

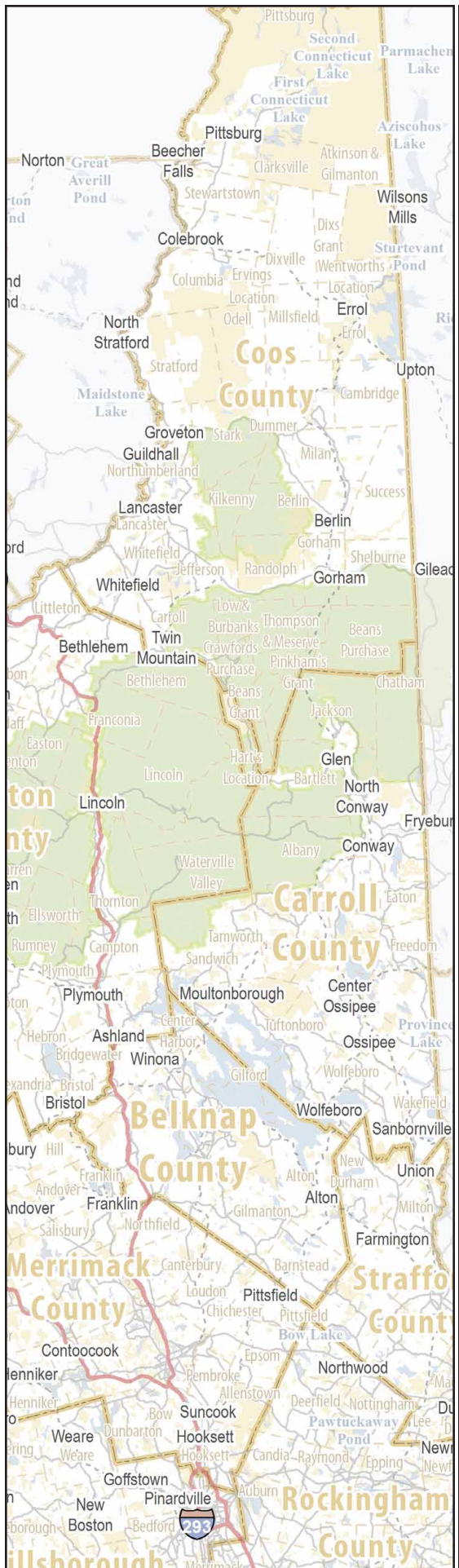


DOE/EIS-0463

FINAL
**NORTHERN PASS
TRANSMISSION LINE PROJECT
ENVIRONMENTAL IMPACT STATEMENT
VOLUME 3: APPENDIX L**

**U.S. DEPARTMENT OF ENERGY
OFFICE OF ELECTRICITY DELIVERY
AND ENERGY RELIABILITY
WASHINGTON, DC**

AUGUST 2017





Department of Energy
Washington, DC 20585
August 2017

Dear Sir/Madam:

Enclosed is the final *Northern Pass Transmission Line Project Environmental Impact Statement* (DOE/EIS-0463) prepared by the Department of Energy (DOE) pursuant to the National Environmental Policy Act of 1969 (NEPA) and its implementing regulations.

The United States Forest Service (USFS) – White Mountain National Forest, United States Environmental Protection Agency (EPA) – Region 1, United States Army Corps of Engineers (USACE) – New England District, and the New Hampshire Office of Energy and Planning (NHOEP) are cooperating agencies in the preparation of the EIS.

The proposed DOE action in the final EIS is to issue a Presidential permit to the Applicant, Northern Pass LLC, to construct, operate, maintain, and connect a new electric transmission line across the U.S./Canada border in northern New Hampshire (NH).

DOE has prepared this final EIS to evaluate the potential environmental impacts in the United States of the proposed action and the range of reasonable alternatives, including the No Action alternative. Under the No Action alternative, the Presidential permit would not be granted, and the proposed transmission line would not cross the U.S./Canada border.

In addition to its Presidential permit application to DOE, Northern Pass LLC applied to the USFS for a special use permit that would authorize Northern Pass LCC to construct, own, operate and maintain an electric transmission line to cross portions of the White Mountain National Forest under its jurisdiction. The final EIS will be used by the Forest Supervisor of the White Mountain National Forest to inform the Record of Decision in regard to this requested use.

DOE will use the EIS to ensure that it has the information it needs for informed decision-making.

The final EIS will also be posted on the project EIS website, <http://www.northernpasseis.us/> and DOE's NEPA website at <https://energy.gov/nepa/listings/environmental-impact-statements-eis>.

Sincerely,

A handwritten signature in black ink, appearing to read "Brian Mills".

Brian Mills
Transmission Permitting and Technical Assistance,
Office of Electricity Delivery and Energy Reliability
U.S. Department of Energy

FINAL

**NORTHERN PASS TRANSMISSION LINE PROJECT
ENVIRONMENTAL IMPACT STATEMENT
DOE/EIS-0463**

Volume 3: Appendix L. Comment Response Document

**U.S. DEPARTMENT OF ENERGY
OFFICE OF ELECTRICITY DELIVERY
AND ENERGY RELIABILITY**



COOPERATING AGENCIES

**United States Forest Service – White Mountain National Forest
United States Environmental Protection Agency– Region 1
United States Army Corps of Engineers – New England District
New Hampshire Office of Energy and Planning**

August 2017

COVER SHEET

RESPONSIBLE FEDERAL AGENCY: U.S. Department of Energy (DOE), Office of Electricity Delivery and Energy Reliability

COOPERATING AGENCIES: United States Forest Service (USFS) – White Mountain National Forest (WMNF); United States Environmental Protection Agency (EPA) – Region 1; United States Army Corps of Engineers (USACE) – New England District; and New Hampshire Office of Energy and Planning (NHOEP)

TITLE: Northern Pass Transmission Line Project Environmental Impact Statement (DOE/EIS-0463)

LOCATION: Coös, Grafton, Belknap, Merrimack, and Rockingham counties in New Hampshire

CONTACTS: For additional information on this Environmental Impact Statement (EIS) contact:

Mr. Brian Mills, National Environmental Policy Act (NEPA) Document Manager
Office of Electricity Delivery and Energy Reliability, OE-20
U.S. Department of Energy
1000 Independence Ave. SW
Washington, DC 20585
Telephone: (202) 586-8267
Brian.Mills@hq.doe.gov

For general information on the DOE NEPA process, please write or call:

Mr. Brian Costner, Acting Director
Office of NEPA Policy and Compliance, GC-54
U.S. Department of Energy
1000 Independence Ave. SW
Washington, DC 20585
askNEPA@hq.doe.gov
Telephone: (202) 586-4600 or leave a message at (800) 472-2756

ABSTRACT: Northern Pass Transmission, LLC (Northern Pass) has applied to the DOE for a Presidential permit to construct, operate, maintain, and connect a 192-mile (309-km) electric transmission line across the United States (U.S.)/Canada border in northern New Hampshire (NH). This final EIS addresses the potential environmental impacts of the Project (Proposed Action), the No Action Alternative, and ten additional action alternatives (Alternatives 2 through 6, with variations). The NH portion of the Project would be a single circuit ± 320 kilovolt (kV) high voltage direct current (HVDC) transmission line running approximately 158 miles (254 km) from the U.S. border crossing with Canada in Pittsburg, NH, to a new direct current-to-alternating current (DC-to-AC) converter station to be constructed in Franklin, NH. From Franklin, NH, to the Project terminus at the Public Service of New Hampshire's existing Deerfield Substation located in Deerfield, NH, the Project would consist of 34 miles (55 km) of 345 kV AC electric transmission line. The total length of the Project would be approximately 192 miles (309 km).

PUBLIC COMMENTS: In preparing this final EIS, DOE considered comments received during the scoping period, which extended from February 11, 2011 to June 14, 2011, and was reopened from June 15, 2011 to November 5, 2013 (DOE accepted and considered all comments during the scoping period from February 11, 2011 to November 5, 2013), and the public comment period on the draft EIS (July 31, 2015 through April 4, 2016). Comments on the draft EIS were accepted during the 45-day period

following publication of EPA's Notice of Availability (NOA) in the *Federal Register* on July 31, 2015; the public comment period was extended until April 4, 2016 following publication of EPA's NOA of the supplement in the *Federal Register* on November 20, 2015. DOE held four public meetings on the draft EIS in Colebrook, NH on March 7, 2016; Waterville Valley, NH on March 9, 2016; Concord, NH on March 10, 2016; and Whitefield, NH on March 11, 2016. All comments were considered during preparation of this final EIS. Appendix L in Volume 3 of this EIS contains the comments received on the draft EIS and DOE's responses to these comments. This final EIS contains revisions and new information based in part on comments received on the draft EIS. Vertical bars in the margins marking changed text indicate the locations of these revisions and new information. Deletions are not indicated. Appendices J and K in Volume 2 and Appendix L in Volume 3 are entirely new parts of this EIS; therefore, they do not contain bars indicating changes from the draft EIS.

The EIS analyzes the potential environmental impacts of DOE issuing a Presidential permit for the proposed Northern Pass Project, which is DOE's proposed federal action. DOE will use the EIS to inform its decision on whether to issue a Presidential permit. Additionally, Northern Pass has applied to the USFS for a special use permit (SUP) authorizing Northern Pass to construct, operate, and maintain an electric power transmission line crossing portions of the WMNF. The WMNF Forest Supervisor will use the EIS to inform its decision regarding: 1) whether to issue a SUP under the Federal Land Policy and Management Act; 2) the selection of an alternative; 3) any need to amend the Forest Plan; and 4) what specific terms and conditions should apply if a SUP is issued.

Copies of the final EIS are available for public review at 30 local libraries and town halls, or a copy can be requested from Mr. Brian Mills. The EIS is also available on the Northern Pass EIS website (<http://www.northernpasseis.us/>). DOE will announce its decision on the Proposed Action in a Record of Decision (ROD) in the *Federal Register* no sooner than 30 days after the EPA publishes the NOA of the final EIS. The USFS will announce its draft decision on the Proposed Action in a draft ROD in the *Federal Register* shortly after the EPA publishes the NOA of the final EIS.

APPENDIX L
COMMENT RESPONSE DOCUMENT

Attachment C.
Response to All Comments on the Draft EIS

Northern Pass EIS Website Comment Receipt

Refers to Comment placed on Aug 12, 2015

ID: 8283

Date Entered: Aug 12, 2015

Source: Website

Topics: Economic

Name: Harry Hintlian

Organization: Reforest The Tropics

Title: Board Chairman

Email: harryhnh@aol.com

Mailing Address: 26 Rockholm Road

City: Gloucester

State: MA

Zip: 01930

Country: US

Comment: The economic effect of the proposed transmission line over the Northern Pass preferred route would have a devastating effect on the current value of real estate properties along the route.

The present transmission line has wooden poles that are barely visible from adjacent properties as the poles barely extend above the treeline where there are trees to block the view of the line. With the proposed higher lines and poles extending well beyond the height of the trees, the negative visual impact increases dramatically.

Whereas the current lines only impact direct abutters, the new higher lines will depreciate real estate values in entire neighborhoods even up to one-half mile away, or more. Who will buy or build a home within eyesight of a power line that's three times higher than their proposed home? It's not just the scenery that's effected but the financial value of hundreds of miles of adjacent lands next to these massive towers and accompanying transmission lines. Buyers come to N.H. for the beautiful scenery and to get away from these kinds of massive intrusions.

There's no real alternative in this day and age but to completely bury the lines.

0085-1

Thank you for your comment. Section 4.1.2 of the EIS addresses the potential for impact to property values as a function of proximity of the Project to private property. Adjustments to the original analysis presented in the draft EIS have been updated in the final EIS to reflect comments on the methodology and assumptions.

0085-1

Sincerely,
Harry N. Hintlian

Northern Pass EIS Website Comment Receipt

Refers to Comment placed on Apr 3, 2016

ID: 9180

Date Entered: Apr 3, 2016

Source: Website

Topics: Purpose and Need, Alternatives, Vegetation, Wildlife, Viewshed/Scenery, Water / Wetlands, Soils, Recreation, Private Property/Land Use, Historic/Cultural, Economic, Tourism, Quality of Life, Cumulative Effects, Environmental Justice

Name: Margaret Mumford

Organization: Holderness School

Email: mmumford@holderness.org

Mailing Address: PO Box 451

City: Plymouth

State: NH

Zip: 03264

Country: US

Comment:

0086-1

Thank you for your comment. The rationale for Northern Pass' selection of Bridgewater as the location for a transition station is outside the scope of this EIS. Potential environmental impacts, including to the Pemigewasset River and adjoining areas, of this facility are analyzed in Section 4.3 of the EIS for each resource under Alternative 7.

My comments are submitted to supplement my oral statement given at the Whitefield DOE Hearing on March 11, 2016. I am opposed to the Northern Pass project in its current configuration, on the basis of environmental justice, economic and aesthetic impact on the state, ecological considerations, and the political and economic maneuvering that Eversource and HydroQuebec are carrying out to achieve their purely economic goals.

I have been a resident of Plymouth NH for 42 years (raised here, moved away and moved back as an adult and property owner.) My family dates back 6 generations to the some of first European settlers of Plymouth and Bridgewater, the Websters. My family members, including me, have owned and maintained properties in Bridgewater to this day.

I work as Sustainability Coordinator and Science Faculty at Holderness School in neighboring Holderness, NH. I have been an active part of energy reduction and the transition to real renewable energies in the local area, both in my personal life and professional work. I studied under one of the first EPA Administrators, Thomas Jorling, who was instrumental in the drafting and implementation of the Clean Water Act, as well as other environmental legislation, and his teachings of the importance of the federal government maintaining the guardianship of resources common to all is now my firm belief. I know the DOE considers environmental impacts with due regard.

Plymouth considers itself to be a gateway to the lakes and mountains. Many in Plymouth have expressed vocal opposition to the project for aesthetic reasons, and some have expressed opposition with the belief that aesthetics will also have economic impacts. Plymouth is also a hub of renewable energy, and I am among those opposed to the project on the grounds that it will deter development of truly renewable and less impactful energy markets. New Hampshire, a net exporter of energy, should not have to bear the burden of the state long degradation of land and an extended eyesore.

The Plymouth Selectboard has been approached by Northern Pass with a multimillion dollar offer for infrastructure to get the town's support. The townspeople are, in general, unaware, but have unknowingly voted for financing a two million dollar loan which one might surmise could be paid by Northern Pass in exchange for support and which definitely represents only a small portion of the monies reported to be offered to the town. This loan is without line item accountability, and there is no instance in recent history of financing such as this. Controversy will likely increase in upcoming months. Plymouth is one of the towns proposed as hosting an underground portion, as of the August 2015 Applicant submission. Main St. is already suffering from a sparse winter and box stores elsewhere. The disruption of businesses during construction could be devastating, even though, with underground lines, Plymouth could be considered by some to be a "winner" in this town lottery.

But some towns will be losers. Bridgewater has, as does Plymouth, the Pemigewasset River running alongside and through it. Yet the towers and lines will criss-cross the river overhead 4 times in less than 10 miles distance, from Ashland through Bridgewater and New Hampton to Bristol, with several additional close approaches, including one in which clearing will occur to within 50 ft. of the mean water mark. Northern Pass attorney Quinlan has been quoted as saying that the lines are transitioning to above ground in Bridgewater due to lack of vocal opposition. This is not a valid reason for route

0086-1

0086-1 cont'd

choice and is not true. There are just not as many residents along the river to be vocal – and that is the point.

The Pemigewasset River is now a gem. Much investment of time, effort, and money has, since the 1950's, resulted in the restoration of this river as a recreational, swimmable river, with intact forest ecosystems bounding it. People experience the river as a corridor by canoe, small fishing boats, kayaks, and even sculling shells. Local businesses depend on the river trips taken by tourists, and one notes the popularity of "Plymouth south to Bridgewater" trip over the more northern segment, as there are fewer crossings of roads and electric lines. It would be highly unfortunate to change the character of outdoor experiences throughout the length of rural New Hampshire slated for overhead lines, whether one is on land or water.

NRCS has a current EQIP project, under the federal Two Chiefs Initiative, the Beebe River Aquatic Connectivity & Habitat Project. The purpose is to "restore water quality and eliminate habitat fragmentation by replacing undersized and degraded road stream crossings in the Beebe River watershed", "a sub-watershed to the Pemigewasset and Merrimack Rivers and part of the largest drainage basin within New Hampshire"¹. Thus, current monies are being spent to improve water quality. It thus does not make sense to support a project which will violate the NH Shoreland Protection Act and degrade the water of the Pemigewasset significantly. Most planned crossing are at locations with steep banks, with the current margins of the right-of way covered with vegetation, including sizable trees, maintaining the integrity of the already erosion-prone banks. The amount of cutting along the steep banks and along tributaries which feed the Pemigewasset will be significant – 60 to 80 ft. at some spots, and will be detrimental to water quality and bank stability. The expanded utility maintenance roads with heavy equipment will provide continued disturbance along many tributaries, increasing silt load. Increased silt load will affect the aquatic ecosystem, being detrimental to fish and macroinvertebrates. Recently, maintenance of lines has not included herbicide use. No such promise is being made for the future.

The Northern Pass project has employed professionals maneuvering to stay ahead of people in a state fighting to keep their state of the character which has provided for it and its people – one of natural beauty, with intact ecosystems. When the original right of ways were granted, there could not have been foreseen the magnification of impact which this project would entail. Those original right of ways took paths that no longer make sense, as they weave back and forth over the landscape, following the route which technologies of the time could traverse. As I stated in my verbal testimony, it appears that Northern Pass is just looking for the weak links and pushing hard in those areas.

I took a tour, along with the NH Site Evaluation Committee and Northern Pass officials, which was purported to be of the route from Plymouth to south of Franklin. What was shown on the tour were existing right of ways already freshly cleared in preparation for the project, a hodge-podge of crossing utility lines over current transformers with disclaimers that these are not in the project and will not be upgraded, (but the Northern Pass lines will simply be added above), and a right of way going directly over more than two dozen trailers and as many houses in a lower socio-economic section of a town. There was avoidance of places along the route in which significant clearing will occur, or in which scenic

0086-1
Continued

0086-2

Thank you for your comment. Sections 3.1.1.1.1 of the Wildlife Technical Report discusses impacts to aquatic species from erosion and sedimentation during construction and operation of the project. Additionally, Appendix H of the Wildlife Technical Report summarizes Applicant-Proposed Impact Avoidance and Mitigation Measures that the Applicant would implement during construction and operation in order to minimize impacts to waterbodies and aquatic species.

0086-2

beauty along the river or on the rural landscape will be disturbed. This is an example of Northern Pass avoiding social responsibility and minimizing the environmental implications of the project, as is the minimal information provided regarding shoreland and wetland impacts.

There are alternatives to the project as proposed which are far more reasonable. Alternative 1, not to build, is the most reasonable. A completely underground route, along Route 93, seems, anecdotally, to be one that many of the people of New Hampshire would accept and is technologically feasible, given Northern Pass plans to move a portion underground. Given the withholding of economic information by Northern Pass until very recently, it has been extremely difficult to assess the Applicant's claim of exorbitant expense. Meanwhile, the people of the state are expected to believe claims of benefits to the state, but no independent verification of Applicant's claims of lower rates and benefits to NH residents, without loss of property value, has been offered.

The opposition to Northern Pass is clear. But the people and towns involved do not have the money to fight this battle on an even playing field. Northern Pass should be spending their money elsewhere, or on burying the line, not on their lawyers and not on "Advance Funds" for "Forward NH". The environmental and aesthetic impacts upon the state and residents there-in should outweigh the perceived benefit, as this is not the path of energy progress and it is not a vital energy project. The project as proposed should not be approved. Please accept these comments and consider them in your deliberations.

Margaret C. Mumford, MD

1:

<http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/programs/farmland/rcpp/?cid=nrcseprd598407#nh>

0086-3

Thank you for your comment. The economic consequences of the Project are analyzed in detail in Section 4.1.2 of the EIS. DOE conducted this EIS analysis without reliance upon any reports or conclusions supplied by the Applicant. Third-party analysts were engaged, by DOE, to independently assess all information detailed in the EIS.

0086-3



0087-1

Thank you for your comment. Following the receipt of the Further Amendment to Presidential Permit Application from Northern Pass on August 31, 2015, DOE prepared a supplement to the draft EIS analyzing the impacts of Alternative 7 - Proposed Action. A Notice of Availability of the supplement to the draft EIS was published by EPA in the Federal Register on November 20, 2015 (80 FR 72719). Public hearings on the draft EIS were held in March 2016 (postponed from previously-announced dates in recognition of the publication of the supplement to the draft EIS) and the comment period was extended until April 4, 2016.

VIA ELECTRONIC MAIL

Brian Mills, Senior Planning Advisor
Office of Electricity Delivery and Energy Reliability (OE-20)
U.S. Department of Energy
1000 Independence Ave. SW
Washington, DC 20585
Email: Brian.Mills@hq.doe.gov

September 14, 2015

Re: Request for a supplement or addendum to the draft Northern Pass Transmission Line Project Environmental Impact Statement (EIS) from the Appalachian Mountain Club, Audubon Society of New Hampshire, Society for the Protection of New Hampshire Forests, Responsible Energy Action, LLC, The Nature Conservancy – NH Chapter

Dear Mr. Mills,

The Appalachian Mountain Club (AMC), Audubon Society of New Hampshire (NHA), Society for the Protection of New Hampshire Forests (SPNHF), Responsible Energy Action LLC (REAL), and The Nature Conservancy – NH Chapter (TNC) are participants in the Northern Pass Transmission Line Project Environmental Impact Statement process. Our organizations collectively represent over 200,000 members who either live in the state of New Hampshire or in the greater northeastern region and visit the state of New Hampshire.

In light of the August 18th, 2015 announcement by Eversource NH and Northern Pass LLC of a new “Preferred Alternative” route which was not among the alternatives studied in the DEIS, we respectfully request the Department of Energy to:

0087-1

1. Issue a supplement, or an addendum, to the draft Northern Pass Transmission Line Project Environmental Impact Statement EIS (NP DEIS) issued July 2015¹ that analyzes the new preferred alternative; and
2. Postpone the scheduled public comment hearings on the draft NP EIS scheduled for October 6, 7 and 8, 2015 in New Hampshire (NH), and delay the written comment deadline of October 29th, 2015², and instead reset both to occur 90 days after the issuance of the supplement to the DEIS requested above.

Our rationale for making these requests is:

1. It is unfair to ask the public to comment on a DEIS that addresses the old preferred alternative in light of the Applicant's recently revealed "Preferred Alternative".
2. It is impossible to accurately compare and contrast the new "Preferred Alternative" with those studied in the DEIS because comparable analyses of the new proposal have not been done.
3. The revised Application contains changes in tower heights, configurations, and locations that were not analyzed in the DEIS.

It is Unfair to the Public

On August 18, 2015 Northern Pass publicly announced its "Forward NH Plan," followed by a letter from James Muntz of Northern Pass (the Applicant) dated August 19, 2015, to the Department of Energy (DOE) titled "*Comment on Draft Environmental Impact Statement.*" The letter was posted on DOE's EIS project website on August 20th, 2015³. This "*Comment on Draft Environmental Impact Statement*" introduces a substantively different "Preferred Alternative by the Applicant" compared to the Applicant's amended Application dated July 1, 2013, which was the basis for the NP DEIS issued in July 2015.

We recognize that the additional 52 miles of burial included in the Applicant's new preferred alternative is an important first step to address the Project's adverse impacts on New Hampshire's iconic landscape. However, like all the other reasonable alternatives that are studied in the DEIS, the impacts of this new "Preferred Alternative" must also be studied as this third iteration of the Applicant's preferred alternative does not fully align with any of the alternatives analyzed in the DEIS. Furthermore, even with the additional documents supporting "Further Amendment to Presidential Permit Application" dated August 31st, 2015, but not posted to the DOE DEIS website until September 10th, 2015, the information available about the new "Preferred Alternative by the Applicant" is inadequate and is being provided unconscionably late given that the DEIS hearings are set to begin in less than one month. Finally, this additional information is not in itself sufficient to allow for an "apples to apples" comparison of this new "Preferred Alternative" route with the other alternatives studied in the DEIS.

We submit that the Applicant could have requested that this new "Preferred Alternative" be studied in detail as one of the DEIS alternatives, but the Applicant failed to do so. The Applicant clearly states in its filing of August 19, 2015 that it has been working on these revisions for well over a year (at page 1), yet it

¹ http://media.northernpasseis.us/media/Draft_EIS_Notification_Letter.pdf

² Federal Register / Vol. 80, No. 167 / Friday, August 28, 2015 / Notices DEPARTMENT OF ENERGY [OE Docket No. PP-371] Notice of Public Hearings for the Draft Northern Pass Transmission Line Project Environmental Impact Statement (DOE/EIS-0463) Oct 6-8. Filing deadline Oct 29, 2015.

³ http://media.northernpasseis.us/media/Northern_Pass_Transmission_08_18_2015.pdf

0087-1 cont'd

0087-1
Continued

0087-2

Thank you for your comment. Following the receipt of the Further Amendment to Presidential Permit Application from Northern Pass on August 31, 2015, DOE prepared a supplement to the draft EIS to analyze the impacts of the Applicant's revised proposal. The supplement designated the revised proposal as Alternative 7 - Proposed Action. The proposed changes included modifications to the proposed transmission line route and to the size of the Project from 1,200 MW to 1,000 MW with a potential transfer capability of up to 1,090 MW. The analysis of Alternative 7 presented in the supplement to the draft EIS reflected these modified project design details. Although Alternative 7 was principally evaluated within the draft EIS under a combination of several of the alternatives, DOE determined that providing a supplement would allow the potential environmental impacts of Alternative 7 to be more clearly displayed as an additional singular alternative and facilitate comparison among the other alternatives. A Notice of Availability of the supplement to the draft EIS was published by EPA in the Federal Register on November 20, 2015 (80 FR 72719). The final EIS incorporates the analysis of Alternative 7 - Proposed Action, which had been analyzed originally in the supplement to the draft EIS. Alternative 7 has also been incorporated into the resource technical reports accompanying the final EIS.

0087-2

0087-3

Thank you for your comment. Following the receipt of the Further Amendment to Presidential Permit Application from Northern Pass on August 31, 2015, DOE prepared a supplement to the draft EIS analyzing the impacts of Alternative 7 - Proposed Action. A Notice of Availability of the supplement to the draft EIS was published in the Federal Register on November 20, 2015 (80 FR 72719). Public hearings on the draft EIS were held in March 2016 (postponed from previously-announced dates in recognition of the publication of the supplement to the draft EIS) and the comment period was extended until April 4, 2016. The EIS and Resource Technical Reports have been revised to fully incorporate the analysis of Alternative 7 - Proposed Action in the final EIS.

0087-3

submits these changes post-release of the DEIS and just weeks before the scheduled public hearings. We are not persuaded that the Applicant developed this proposal as a result of new information revealed by the DEIS process; it has been understood for years that the section of the project now proposed for additional burial was highly problematic to begin with. It is a waste of agency and public time to hold DEIS hearings on an "Applicant's Preferred Alternative" that is no longer in fact the Applicant's preferred alternative.

Our primary concern, however, is that the Applicant's new "Preferred Alternative" does not align with any of the alternatives studied in the DEIS; rather, it represents a mix of alternatives and pieces of route mostly drawn from other alternatives, but never analyzed as a coherent whole in itself. The new "Preferred Alternative" also contains (i) new geographic elements, e.g. approximately 5 miles of new route from the proposed Bethlehem transition station to Franconia that are not covered in any alternative, (ii) the addition of two above to below or reverse transition stations, (iii) a change in the international border crossing that possibly may impact valuable visual resources of concern at that location, and (iv) changes in tower heights, configurations, and locations⁴ not analyzed in the DEIS. Nor is the information currently available about the new route presented in a manner that can be compared to the presentation of routes studied in the DEIS. This lack of alignment with the DEIS alternatives analyses makes it virtually impossible for the public to truly compare this new "Preferred Alternative" with any of the others, using either the tables or text. The new "Preferred Alternative" should undergo the same environmental, cost, socioeconomic, and other analyses as the alternatives presented in the DEIS, and the information should be presented in a comparable manner.

Regulatory Grounds for requesting a supplement or addendum to the Northern Pass DEIS

To ensure that the public has the information and opportunity it needs to accurately compare the new "Preferred Alternative" with the alternatives studied in the DEIS, we believe that a supplement to the DEIS studying the new "Preferred Alternative" is essential and meets the terms of 10 C.F.R. § 1021.314 *Supplemental environmental impact statements*⁵.

⁴ The Applicant suggests that overall tower average heights have decreased. However in examining the replacement Exhibit 5A (dated 18-Aug-2015) for Exhibit 5 (dated 27-Jun-2013), a number of tower heights increase on the 345 kV section of the project, which could impact the visual analysis. As examples, the revised 2015 Application shows one 160 ft tower compared to zero in 2013; the revised 2015 Application shows five 145 ft towers versus four in 2013; the revised 2015 Application shows fifteen 140 ft towers versus seven in 2013; the revised 2015 Application shows eighteen 135 ft towers versus fourteen in 2013, and the revised 2015 Application shows thirty-six 130 ft towers versus twenty six in 2013.

⁵ 10 C.F.R. § 1021.314 Supplemental environmental impact statements.

- (a) DOE shall prepare a supplemental EIS if there are substantial changes to the proposal or significant new circumstances or information relevant to environmental concerns, as discussed in 40 CFR 1502.9(c)(1).
- (b) DOE may supplement a draft EIS or final EIS at any time, to further the purposes of NEPA, in accordance with 40 CFR 1502.9(c)(2).
- (c) When it is unclear whether or not an EIS supplement is required, DOE shall prepare a Supplement Analysis.
- (1) The Supplement Analysis shall discuss the circumstances that are pertinent to deciding whether to prepare a supplemental EIS, pursuant to 40 CFR 1502.9(c).
 - (2) The Supplement Analysis shall contain sufficient information for DOE to determine whether:
 - (i) An existing EIS should be supplemented;
 - (ii) A new EIS should be prepared; or
 - (iii) No further NEPA documentation is required.
 - (3) DOE shall make the determination and the related Supplement Analysis available to the public for information. Copies of the determination and Supplement Analysis shall be provided upon written request. DOE shall make copies available for inspection in the appropriate DOE public reading room(s) or other appropriate location(s) for a reasonable time.

0087-3 cont'd

0087-3
Continued

0087-4

Thank you for your comment. Following the receipt of the Further Amendment to Presidential Permit Application from Northern Pass on August 31, 2015, DOE prepared a supplement to the draft EIS analyzing the impacts of Alternative 7 - Proposed Action. A Notice of Availability of the supplement to the draft EIS was published in the Federal Register on November 20, 2015 (80 FR 72719). Although Alternative 7 is primarily a combination of other alternatives analyzed in the EIS (Alternatives 2, 4c, and 5c), additional fieldwork was performed in Bethlehem and Bridgewater where the Alternative 7 alignment was not captured in any of the other alternatives (including the 5 miles of underground cable between Bethlehem and Franconia, the new transition station locations in Bethlehem and Bridgewater, the minor modification in border crossing location, and changes in project design including structure heights and locations) and analysis of the revised Proposed Action was presented in the supplement. The final EIS and Resource Technical Reports have been revised to fully incorporate the analysis of Alternative 7 - Proposed Action in all resource analyses and geographic sections.

0087-4

0087-5

0087-5

Thank you for your comment. Following the receipt of the Further Amendment to Presidential Permit Application from Northern Pass on August 31, 2015, DOE prepared a supplement to the draft EIS analyzing the impacts of Alternative 7 - Proposed Action. A Notice of Availability of the supplement to the draft EIS was published by EPA in the Federal Register on November 20, 2015 (80 FR 72719). The EIS and Resource Technical Reports have been revised to fully incorporate the analysis of Alternative 7 - Proposed Action in the final EIS.

The "alternatives" section is the heart of the EIS (and DEIS), and should rigorously explore and objectively evaluate *all* reasonable alternatives, including the Applicant's new "Preferred Alternative". It should include **relevant** comparisons on environmental and other grounds. The "environmental consequences" section of the EIS (and DEIS) should discuss the specific environmental impacts or effects of each of the alternatives. In order to avoid duplication between these two sections, most of the "alternatives" section should be devoted to describing and comparing the alternatives. Discussion of the environmental impacts of these alternatives should be limited to a **concise descriptive summary of such impacts in a comparative form, including charts or tables, thus sharply defining the issues and providing a clear basis for choice among options**. The "environmental consequences" section should be devoted largely to a scientific analysis of the direct and indirect environmental effects of the proposed action and of each of the alternatives. It forms the analytic basis for the concise comparison in the "alternatives" section⁶. We submit that to meet these standards in this instance given the new "Preferred Alternative," a supplement to the NP DEIS is required.

Whenever there are changes, new information, or new circumstances relating to a project for which a draft or final EIS has been prepared, DOE must determine whether these result in significant environmental impacts that were not evaluated in the EIS. In this case, it is virtually impossible to compare the Applicant's new "Preferred Alternative" with the alternatives presented in the NP DEIS. DOE should develop the appropriate studies to assess the impacts of proposed changes, new information, or new circumstances. While we may assume that the environmental impacts of the proposed additional burial are less than the above-ground alternatives in many respects, there may be other respects in which the impacts are different or potentially adverse and so should be subject to the same rigorous study applied to the other reasonable alternatives. This requires a supplement to the NP DEIS.

A recently distributed version of a DEIS, FEIS, or supplemental EIS, may be added to at any time. A supplement is to be developed using the same process and format (i.e., DEIS, FEIS, and ROD) as an original EIS, except that scoping is not required. The supplemental DEIS should provide sufficient information to briefly describe the proposed action, the reason(s) why a supplement is being prepared, and the status of the previous draft or final EIS. The supplement needs to address only those changes or new information that are the basis for preparing the supplement and were not addressed in the previous DEIS. Portions of the original DEIS that are unchanged and are still valid may be briefly summarized and referenced. New environmental requirements need to be addressed in the supplemental DEIS to the extent that they apply to the portion of the project being evaluated and are relevant to the subject of the supplement. The supplement should summarize the results of any reevaluations that have been performed for the proposed action. As a result, the supplement will reflect an up-to-date consideration of the entire proposed action and its effects on the environment. When a previous DEIS is referenced, the supplemental DEIS transmittal letter should indicate that copies of the original (draft or final) EIS are available and will be provided to all requesting parties.

(d) DOE shall prepare, circulate, and file a supplement to a draft or final EIS in the same manner as any other draft and final EISs, except that scoping is optional for a supplement. If DOE decides to take action on a proposal covered by a supplemental EIS, DOE shall prepare a ROD in accordance with the provisions of § 1021.315 of this part.

(e) When applicable, DOE will incorporate an EIS supplement, or the determination and supporting Supplement Analysis made under paragraph (c) of this section, into any related formal administrative record on the action that is the subject of the EIS supplement or determination (40 CFR 1502.9(c)(3))

⁶ <http://www.northernpasseis.us/images/uploads/documents/CEQ-40Questions.pdf> Question # 7

0087-6

Thank you for your comment. Following the receipt of the Further Amendment to Presidential Permit Application from Northern Pass on August 31, 2015, DOE prepared a supplement to the draft EIS analyzing the impacts of Alternative 7 - Proposed Action. A Notice of Availability of the supplement to the draft EIS was published by EPA in the Federal Register on November 20, 2015 (80 FR 72719). Public hearings on the draft EIS were held in March 2016 (postponed from previously-announced dates in recognition of the publication of the supplement to the draft EIS) and the comment period was extended until April 4, 2016.

Supplements and addendums to both DEIS and EISs are not atypical. In this proceeding, a Scoping Document addendum was issued on May 2014. DOE has also followed this course of action in other project proceedings⁷.

Conclusion

The public is being asked to review and comment on a NP DEIS that does not study what is now the Applicant's "Preferred Alternative." This situation places an unfair burden on the public participating in this process, and denies them the full and accurate information needed to truly compare and contrast all possible reasonable alternatives. We respectfully request the DOE to postpone the upcoming scheduled NP DEIS public hearings and filing deadline dates, to issue either a supplemental or addendum to the NP DEIS which studies the now revised Application, and to establish new public hearing and comment filing deadlines on the supplemented NP DEIS.

Your timely response to this request is appreciated⁸.

Sincerely,

Susan Arnold, Vice President for Conservation
Appalachian Mountain Club

Carol Foss, Senior Advisor for Science and Policy
Audubon Society of New Hampshire

Will Abbott, Vice President, Policy and Land Management
Society for the Protection of New Hampshire Forests

Susan Schibanoff, co-founder
Responsible Energy Action LLC

Jim O'Brien, Director of External Affairs
The Nature Conservancy—New Hampshire Chapter

cc: US Senator Kelly Ayotte
US Senator Jeanne Shaheen
US NH Representative Ann Kuster
US NH Representative Frank Guinta
NH Governor Maggie Hassan

⁷ Notice of Availability of the Draft Environmental Assessment Addendum for Disposition of Additional Waste at the Paducah Gaseous Diffusion Plant (Federal Register /Vol. 68, No. 83 /Wednesday, April 30, 2003 /Notices 23117

⁸ If, based upon the studies, the Department determines that a supplemental addendum to a DEIS is not necessary, this determination must be documented using the NEPA/CEQA Re-validation form. Following a DEIS, the determination should be noted in the FEIS; following approval of an FEIS, it may be noted in the project file.

Northern Pass EIS Website Comment Receipt

Refers to Comment placed on Mar 21, 2016

ID: 8753

Date Entered: Mar 21, 2016

Source: email

Topics: Purpose and Need, Historic/Cultural

Name: Kris Pastoriza

Organization:

Email: krispastoriza@gmail.com

Comment: The Northern Pass route now continues from Deerfield to Scobie Pond, as was stated in the pre-SEC hearings and many Northern Pass documents, for example historical resources assessments. This should be indicated in the notice above.

The DOE EIS does not assess this route addition, and is therefore incomplete.

"Northern Pass will connect to the regional grid at an existing substation in Deerfield, NH. In order to determine how the project could interconnect at that location, ISO-NE had studied Northern Pass' original 1200 MW design and concluded that certain electrical upgrades to the New England regional transmission grid are required to allow for Northern Pass to connect without adversely impacting grid reliability. Per the study, under certain conditions, without any system modifications, power flowing into Deerfield substation over Northern Pass and into the regional grid will cause two transmission lines to exceed their present rating. The first line is located between Deerfield Substation and Scobie Pond substation in Londonderry, NH. The second line is between Scobie Pond substation and a substation located in Buxton, Maine.

To address the potential for line overloads, additional terminal equipment (a circuit breaker and connecting bus work) will be required to loop the Scobie Pond to Buxton, ME line into and out of Deerfield substation. The line currently runs past Deerfield substation without an electrical connection. In addition, ten existing transmission structures between Deerfield and Scobie Pond substations would need to be raised in order to achieve the required ratings. The increase in height for all but one structure is approximately 5 feet. One structure will be increased approximately 10 feet. The structures are located in the towns of Deerfield (5), Raymond (3) and Chester (2). Finally, to maintain system voltage levels, additional equipment will be installed at both Deerfield and mScobie Pond substations.

ISO-NE is currently studying the project's new 1000 MW design (with a potential to deliver up to 1090 MW), so the identified upgrades described above are subject to change. The project does not anticipate that the results will be materially different for the lower capacity project."

0089-1

Thank you for your comment. The projects mentioned in this comment are described in Section 2.3 of the EIS as "AC System Support Projects." Impacts potentially resulting from these projects were analyzed in Section 4.4 of the EIS.

0089-1

<http://www.northernpass.us/lineand-substation-upgrades.htm>

Please see attached document(s) filed in the above mentioned docket(s). Website to be updated.

Order Public Notice Hearings, Belknap, Grafton and Rockingham Counties
Order Public Notice Hearings, Coos and Merrimack Counties

Thanks, Jody

0089-1
Continued

0089-1 cont'd

0089

Northern Pass EIS Website Comment Receipt

Refers to Comment placed on Sep 2, 2015

ID: 8364

Date Entered: Sep 2, 2015

Source: Website

Topics: Alternatives, Viewshed/Scenery, Tourism, Quality of Life

Name: Elaine Kellerman

Organization:

Email: elaineakellerman@yahoo.com

Mailing Address: 1406 Alton Woods Drive

City: Concord

State: NH

Zip: 03301

Country: US

Comment: I would like to request that the final EIS include more than one international border crossing. Why is there this focus on Pittsburg as if it is the only suitable location for entry from Canada? The most logical point for entry is not in NH at all. Derby Line, VT provides access to Interstate 91 where the line could be buried along its route to Waterford, VT. It could then be buried along Interstate 93 as it makes its way east. Burying the entire line is the only acceptable way to address this project. Overhead lines of this height create an eyesore wherever they are located. They negatively impact any area they cross, decreasing property values and marring the landscape. Personally, I wish this project would not be permitted and never be constructed. But the second best scenario is a completely buried line.

0090-1

Thank you for your comment. Northern Pass has applied to the Department of Energy for a Presidential permit for an international border crossing associated with an HVDC transmission line that would run from Quebec, Canada to Deerfield, NH. Executive Order (EO) 10485, as amended by EO 12038, "requires that executive permission be obtained for the construction and maintenance at the borders of the United States of facilities for the exportation or importation of electric energy." DOE is authorized to "receive applications for the construction, operation, maintenance, or connection, at the borders of the United States, of facilities for the transmission of electric energy between the United States and a foreign country[,]" and "[u]pon finding the issuance of the permit to be consistent with the public interest, and, after obtaining the favorable recommendations of the Secretary of State and the Secretary of Defense thereon, to issue to the applicant, as appropriate, a permit for [the] construction, operation, maintenance, or connection." (EO 10485). DOE, however, does not have siting authority for the Project. In this case, the New Hampshire Site Evaluation Committee has siting authority for the Project in the state of New Hampshire. Additionally, the USFS has siting authority for portions of the Project located in the White Mountain National Forest. (For further discussion, see Sections 1.1-1.3 of the final EIS.) While DOE's authority is limited to the approval or denial of the amended Presidential permit application (August 2015) as requested by the Applicant, DOE's policy is to analyze not only the proposed border crossing, but also the alignment of new infrastructure required between the proposed border crossing and connection to the existing U.S. electricity system as a "connected action" under NEPA. In keeping with this policy, DOE analyzed the potential environmental impacts of the alignment proposed by the Applicant. In addition, in response to input from Cooperating Agencies, other agencies, and extensive public comment, DOE analyzed a range of other alignments and underground and overhead configurations between the proposed border crossing and connection with the existing U.S. electricity system. The EIS analyzes in detail the No Action Alternative and eleven action alternatives. Additionally, seventeen alternatives were considered but eliminated from detailed analysis. Section 2.4 of the final EIS has been updated with additional information on alternatives considered but eliminated from detailed analysis. Among these alternatives, DOE considered two alternate border crossings. One was an alternative that would utilize the existing National Grid Phase I/II route, including its border crossing in Vermont. Based on its review of the National Grid alternative DOE determined that this alternative is not reasonable. Section

0090-1

2.4.3 of the final EIS has been updated with additional information related to the National Grid alternative. Separately, in response to comments received on the draft EIS, DOE considered a second alternative border crossing in Vermont, specifically identified as a border crossing at Derby Line, VT that would utilize I-91. DOE determined that this alternative is not reasonable. Section 2.4.17 of the final EIS has been added to reflect consideration of this alternative and DOE's determination.

Northern Pass EIS Website Comment Receipt

Refers to Comment placed on Sep 8, 2015

ID: 8375

Date Entered: Sep 8, 2015

Source: Website

Topics: Alternatives, Viewshed/Scenery, Tourism, Quality of Life

Name: Brenda Charpentier

Organization:

Email: jbchar@metrocast.net

Mailing Address: PO Box 232

City: Sanbornton

State: NH

Zip: 03269

Country: US

Comment: Dear DOE:

New Hampshire still possesses the natural beauty that many places around the world lost long ago and will never get back.

Please amend the draft Northern Pass EIS to include alternate entry points along the border between Canada and the U.S. To do the least damage to our natural assets, the Northern Transmission line should not enter over Hall's Stream in Pittsburg. One alternative analyzed in the final EIS should be a border crossing in Vermont so that the line utilizes the already disturbed I-91 corridor. Thank you.

0091-1

Thank you for your comment. Northern Pass has applied to the Department of Energy for a Presidential permit for an international border crossing associated with an HVDC transmission line that would run from Quebec, Canada to Deerfield, NH. Executive Order (EO) 10485, as amended by EO 12038, "requires that executive permission be obtained for the construction and maintenance at the borders of the United States of facilities for the exportation or importation of electric energy." DOE is authorized to "receive applications for the construction, operation, maintenance, or connection, at the borders of the United States, of facilities for the transmission of electric energy between the United States and a foreign country[,]" and "[u]pon finding the issuance of the permit to be consistent with the public interest, and, after obtaining the favorable recommendations of the Secretary of State and the Secretary of Defense thereon, to issue to the applicant, as appropriate, a permit for [the] construction, operation, maintenance, or connection." (EO 10485). DOE, however, does not have siting authority for the Project. In this case, the New Hampshire Site Evaluation Committee has siting authority for the Project in the state of New Hampshire. Additionally, the USFS has siting authority for portions of the Project located in the White Mountain National Forest. (For further discussion, see Sections 1.1-1.3 of the final EIS.) While DOE's authority is limited to the approval or denial of the amended Presidential permit application (August 2015) as requested by the Applicant, DOE's policy is to analyze not only the proposed border crossing, but also the alignment of new infrastructure required between the proposed border crossing and connection to the existing U.S. electricity system as a "connected action" under NEPA. In keeping with this policy, DOE analyzed the potential environmental impacts of the alignment proposed by the Applicant. In addition, in response to input from Cooperating Agencies, other agencies, and extensive public comment, DOE analyzed a range of other alignments and underground and overhead configurations between the proposed border crossing and connection with the existing U.S. electricity system. The EIS analyzes in detail the No Action Alternative and eleven action alternatives. Additionally, seventeen alternatives were considered but eliminated from detailed analysis. Section 2.4 of the final EIS has been updated with additional information on alternatives considered but eliminated from detailed analysis. Among these alternatives, DOE considered two alternate border crossings. One was an alternative that would utilize the existing National Grid Phase I/II route, including its border crossing in Vermont. Based on its review of the National Grid alternative DOE determined that this alternative is not reasonable. Section

0091-1

2.4.3 of the final EIS has been updated with additional information related to the National Grid alternative. Separately, in response to comments received on the draft EIS, DOE considered a second alternative border crossing in Vermont, specifically identified as a border crossing at Derby Line, VT that would utilize I-91. DOE determined that this alternative is not reasonable. Section 2.4.17 of the final EIS has been added to reflect consideration of this alternative and DOE's determination.

Northern Pass EIS Website Comment Receipt

Refers to Comment placed on Mar 15, 2016

ID: 8740

Date Entered: Mar 15, 2016

Source: Website

Topics: Purpose and Need, Alternatives, Health and Safety, Wildlife, Viewshed/Scenery, Water / Wetlands, Recreation, Private Property/Land Use, Historic/Cultural, Economic, Tourism, Quality of Life, Cumulative Effects, Design Criteria / Mitigation Measures, Environmental Justice

Organization:

Comment: Dear Mr. Mills,

My comments on the draft EIS are below. These expand on my oral comments from March 11, 2016, at the Whitefield hearing.

Alternatives 2, 3, and 5 a-c should be struck. The draft EIS itself notes that alternative 3 is not practical due to the lack of permission for buried cables in the existing PSNH right of way, stating that "the majority of these easements would need to be amended through agreement with each individual landowner." Importantly, alternatives 2, and 5 a-c, also depend on buried lines through many areas where the applicant will require landowner permission. In many cases the land through which the applicant is proposing to bury the cable would pass through conservation easements where the landowner is both unwilling, and in fact unable to grant permission.

Additionally, the proposed routes in Alternatives 2, 3, and 5 a-c are impeded not only by conservation easements, but by other conflicts, including where the fee proper owners are opposed to buried cable, as well as by water-rights easements that would be violated by either buried or overhead lines. Furthermore, both the buried and aboveground proposals would severely risk destroying the underlying aquifers feeding the wells and springs that supply water to multiple households in the broader area. Northern Pass representatives have admitted the potential impacts verbally during site inspections.

In short, by the standard which the draft EIS has already established, alternatives 2, as well as 5a-c, are not practical. The applicant does not have route control, and obtaining it would be extremely challenging to implement at best. Therefore, in terms of site control, and route viability, alternatives 3, 5a, 5b, and 5c should be removed as options from the final EIS.

Separately, there are additional environmental impacts to consider in the Bear Rock section of Stewartstown, NH, which would arise from Alternatives 2,3,5a, 5b, and 5c. In addition to the impacts on drinking water sources already mentioned these include:

First, the caves nearby, known locally as the "Bear Caves" which may contain hibernacula for state

0092-1

Thank you for your comment. Alternatives 2, 3, 5a, 5b, and 5c are analyzed in detail in the final EIS. Potential impacts resulting from these alternatives are discussed throughout the EIS for a number of resources, including land use, water resources, and visual resources.

0092-2

Thank you for your comment. No known hibernacula including "Bear Caves" occur within the Project corridors or within 5 miles of the Project corridors in the Northern Section. Acoustic surveys were completed and although bat species exist within the Northern Section, there are no known hibernacula to disturb.

0092-1

0092-2

and federal species of concern. The threat of impact to the caves from construction of both the above or underground line needs further study.

Second, the underground portion of the line would disrupt and potentially block the headwaters of the Mohawk River, one of only sixteen bodies of water in the state specifically managed to protect wild brook trout, a state species of concern. To my knowledge these impacts have not yet been evaluated.

Third, the line, after going overhead again, would cross, and be highly visible from, Diamond Pond Road. This road is a highly scenic route, and leads to Little and Big Diamond Ponds, which are renowned for their beauty, as well as for being fishing and snowmobile destinations. The views in this section of town, and the general aesthetics, are a key component driving the tourism economy in Stewartstown.

Fourth, the above-listed alternatives would cross the Cohos Trail multiple times in Stewartstown alone, and be highly visible along the trail. The Cohos Trail is the only long-distance hiking trail in the Great North Woods tourist region, and is a key asset for further encouraging tourism in the area.

Fifth, the overhead lines would climb over the top of Sugar Hill, and cut through the middle of one of the largest intact forest blocks in the entire state.

If this seems like a laundry list of concerns, that is a reflection of how poorly thought out Northern Pass's preferred route is. In the areas along the newly-proposed route, you would be hard pressed to pick a more destructive and more impactful route if you tried.

The draft EIS notes that alternative 5a, 5b, and 5c present visual impacts that are moderately less severe, but similar, to an all-overhead line. This seems correct. However, it is important to note that for those areas, particularly in Northern New Hampshire, where the line would be above-ground, the impact is just as severe. The portion of the state north of the White Mountains would be just as impacted under alternatives 5a-c as in alternative 2. The region is highly dependent on tourism for its economy (see notes on Diamond Ponds above). Even the proposal of an above-ground line has already had a demonstrated impact on property prices, as corroborated by the EIS, and the tourist economy in general. For this reason as well, alternatives 5a, 5b, and 5c are wholly inappropriate and should be dropped from the final EIS.

Relevant to the Section 106 Review, as well as the main EIS:

In terms of historical impact, is it noteworthy that alternatives 2, 3, 5a, 5b, and 5c all propose damaging a significant natural and historic landmark that appears to have been overlooked up to this point. The Bear Rock, after which the Bear Rock Road and Bear Rock district in Stewartstown and Colebrook derive their names, stands at the intersection of the Heath Road and Bear Rock (see the excerpt from the Coos County 1861 map below, as well as the Section 106 Map, excerpted). Bear Rock is a granite outcrop, noteworthy in settlement times for being frequented by bears, which had become rare following agricultural clearing. It has been named such since at least the mid-1800's. Aside from conveying its name to the nearby road and district, Bear Rock stands prominently in local lore and history. Songs were composed about the Rock and the people living nearby. Historically, even today, saying that one was from Bear Rock was a bit like saying you were from the back woods, and is a point of pride. The Bear Rock school, an historic one-room schoolhouse that was later moved to, and still stands in Colebrook, was named after Bear Rock. When the school was functioning it was

0092-2
Continued 0092-2 cont'd

0092-3

0092-3

Thank you for your comment. The Eastern Brook Trout (EBT) was added to Tables 3-14 and 4-61 of the final EIS, as the EBT is now considered a Species of Greatest Need of Conservation (it was not listed during preparation of the draft EIS); additional discussion regarding impacts from thermal loading was also included in these sections of the final EIS. Potential thermal impacts from tree clearing are also considered in Section 4.2.13 in the subsection for Surface Water. In the Wildlife Technical Report, Tables 2, 37 and 39 were revised to include the EBT as a SGNC species. Additional discussion regarding impacts from loss of riparian areas was also added to Sections 3.1.1.1 and 3.2.2.1.1 of the Wildlife Technical Report.

0092-4

0092-5

0092-6

0092-4

Thank you for your comment. Visual impacts in the Northern Section are analyzed in Section 4.2.1 of the EIS. The Project under Alternatives 2, 5a, 5b, 5c, and 7 would cross Diamond Pond Road as an aboveground transmission line, resulting in potential visual impacts. Diamond Pond Road is included in the landscape assessment, but it is not a designated scenic resource. A Key Observation Point (KOP) simulation was added to the final EIS and Visual Impact Assessment Technical Report at Little Diamond Pond in Stewartstown (KOP SE-3).

0092-7

0092-5

Thank you for your comment. The final EIS, Recreation Technical Report, and Visual Impact Assessment Technical Report have been updated to include analysis of the Cohos Trail. Short-term impacts could result from Alternatives 2, 3, 5a, 5b, 5c, and 7 north of Lovering Mountain where the Project would be underground along the trail for 1.8 miles. Additionally, under Alternatives 2, 5a, 5b, 5c, and 7 the Project would cross the Cohos Trail three times as an overhead line, and the trail could be impacted indirectly by visibility of the Project. A Key Observation Point (KOP) has been added to the final EIS and Visual Impact Assessment Technical Report in Stark at the location where the Project would cross the Cohos Trail (KOP ST-4). See Section 4.2.1 and Appendix E of the final EIS. See Section 4.2.3 of the final EIS for a brief discussion of recreation impacts to this resource; additional information has been added to the Recreation Technical Report.

0092-8

0092-6

Thank you for your comment. The EIS analyzes impacts to vegetation in the Central Section under the alternatives noted by the commenter. Additional information pertaining to interior forest tracts has been added to Section 3.1.2.1 of the Vegetation Resources Technical Report.

0092-7

Thank you for your comment. Section 2.1 of the EIS provides detail on the process DOE used to identify reasonable alternatives for analysis. Additionally Section 2.4 of the EIS describes the Alternatives Considered but Eliminated from Further Detailed Analysis. The potential impacts of Alternatives 5a, 5b, and 5c are discussed throughout the EIS across four geographic areas and 14 resource areas. Potential socioeconomic impacts of the Project relating to property values are discussed in Section 4.1.2 of the EIS and visual impacts are discussed in section 4.1.1 of the EIS.

0092-8

Thank you for your comment. The commenter's concern regarding Bear Rock and the Bear Rock School is noted. Bear Rock is not an archaeological or architectural resource, so it is not addressed in Section 3.2.8 or 4.2.8. Bear Rock could be a contributing natural feature to a cultural landscape, see 3.1.8, and will be considered through the cultural landscape studies to be conducted as part of the Section 106 process (see Section 3.1.8.3 for methodology). The Bear Rock School was not considered during preparation of the DEIS because, in its current location, it is outside the area of potential effects [36 C.F.R. part 800.16(d)]. DOE is coordinating its compliance with Section 106, in a manner consistent with 36 C.F.R. Section 800.8, with the pertinent standards of the National Environmental Policy Act of 1969 ("NEPA") pursuant to 40 C.F.R. Sections 1500-1508. This process is described in Sections 1.6 and 1.7.3.2 of the EIS. Changes have been made to Section 3.1.8 regarding this resource.

common for teachers to lead field trips to the Rock.

The above-mentioned alternatives (2, 3, 5a, 5b, 5c) would all involve significant damage to the rock, either through blasting across the southern flank of the Rock, or through the location of a transition station on top of it, which would entail the rock's complete destruction. Bear Rock needs to be included in any discussion of the impact of the various alternatives in the final EIS.

Additionally, several of the area's original homesteads (the eastern part of Stewartstown was actually the original settlement area, including the Hollow and nearby hill farms) were located at the foot of Bear Rock, and the proposed line would potentially be constructed through the archeological remains of these homesteads as well. The general location is observable on one of the county-wide maps from 1861. The above-mentioned alternatives could not be constructed within the proposed right of way without destroying either the archeological resources, or the historic and natural features, of Bear Rock. Alternatives 2, 3, 5a, 5b, and 5c should be rejected from the final EIS for these reasons alone.

Northern Pass, subsequent to the publishing of the Draft EIS, has already changed their proposal to use 1,000 MW underground cables in the WMNF. Given the concerns above, it is only reasonable that Northern Pass bury the cable along the lines of Alternative 4a. Barring that, there is no acceptable current alternative other than alternative 1. Alternatives 4b, 4c, 6a or 6b would avoid the impacts that I have listed but are problematic in their own right, with those problems detailed by other commenters. A potential alternative, mainly burying the line from a crossing in Derby Line, VT, and continuing underground along interstate 91, then to either interstate 93 or 89, should also be considered.

Thank you for your time, and for your considerations of the above-listed concerns.

Sincerely,

John Petrofsky

1730 P St. NW
Washington, D.C.
20036

And,

680, Bear Rock Road
Stewartstown, NH
03576

0092-8

Continued 0092-8 cont'd

0092-9

Thank you for your comment. Northern Pass has applied to the Department of Energy for a Presidential permit for an international border crossing associated with an HVDC transmission line that would run from Quebec, Canada to Deerfield, NH. Executive Order (EO) 10485, as amended by EO 12038, "requires that executive permission be obtained for the construction and maintenance at the borders of the United States of facilities for the exportation or importation of electric energy." DOE is authorized to "receive applications for the construction, operation, maintenance, or connection, at the borders of the United States, of facilities for the transmission of electric energy between the United States and a foreign country[,]" and "[u]pon finding the issuance of the permit to be consistent with the public interest, and, after obtaining the favorable recommendations of the Secretary of State and the Secretary of Defense thereon, to issue to the applicant, as appropriate, a permit for [the] construction, operation, maintenance, or connection." (EO 10485). DOE, however, does not have siting authority for the Project. In this case, the New Hampshire Site Evaluation Committee has siting authority for the Project in the state of New Hampshire. Additionally, the USFS has siting authority for portions of the Project located in the White Mountain National Forest. (For further discussion, see Sections 1.1-1.3 of the final EIS.) While DOE's authority is limited to the approval or denial of the amended Presidential permit application (August 2015) as requested by the Applicant, DOE's policy is to analyze not only the proposed border crossing, but also the alignment of new infrastructure required between the proposed border crossing and connection to the existing U.S. electricity system as a "connected action" under NEPA. In keeping with this policy, DOE analyzed the potential environmental impacts of the alignment proposed by the Applicant. In addition, in response to input from Cooperating Agencies, other agencies, and extensive public comment, DOE analyzed a range of other alignments and underground and overhead configurations between the proposed border crossing and connection with the existing U.S. electricity system. The EIS analyzes in detail the No Action Alternative and eleven action alternatives. Additionally, seventeen alternatives were considered but eliminated from detailed analysis. Section 2.4 of the final EIS has been updated with additional information on alternatives considered but eliminated from detailed analysis. Among these alternatives, DOE considered two alternate border crossings. One was an alternative that would utilize the existing

0092-9

National Grid Phase I/II route, including its border crossing in Vermont. Based on its review of the National Grid alternative DOE determined that this alternative is not reasonable. Section 2.4.3 of the final EIS has been updated with additional information related to the National Grid alternative. Separately, in response to comments received on the draft EIS, DOE considered a second alternative border crossing in Vermont, specifically identified as a border crossing at Derby Line, VT that would utilize I-91. DOE determined that this alternative is not reasonable. Section 2.4.17 of the final EIS has been added to reflect consideration of this alternative and DOE's determination.

Northern Pass EIS Website Comment Receipt

Refers to Comment placed on Mar 23, 2016

ID: 8785

Date Entered: Mar 23, 2016

Source: Website

Topics: Alternatives

Name: Susanne Kibler-Hacker

Organization:

Email: nh2nile@yahoo.com

Mailing Address: 8 Ray Road

City: Dunbarton

State: NH

Zip: 03046

Country: US

Comment: Given that the purpose of the Presidential Permit is to authorize the project to cross the international boundary, to adequately explore alternatives, it is necessary to study more than one border crossing location. There are other feasible border crossings, including Derby, Vermont, that would shorten the line significantly and result in fewer environmental impacts.

0093-1

Thank you for your comment. Northern Pass has applied to the Department of Energy for a Presidential permit for an international border crossing associated with an HVDC transmission line that would run from Quebec, Canada to Deerfield, NH. Executive Order (EO) 10485, as amended by EO 12038, "requires that executive permission be obtained for the construction and maintenance at the borders of the United States of facilities for the exportation or importation of electric energy." DOE is authorized to "receive applications for the construction, operation, maintenance, or connection, at the borders of the United States, of facilities for the transmission of electric energy between the United States and a foreign country[,]" and "[u]pon finding the issuance of the permit to be consistent with the public interest, and, after obtaining the favorable recommendations of the Secretary of State and the Secretary of Defense thereon, to issue to the applicant, as appropriate, a permit for [the] construction, operation, maintenance, or connection." (EO 10485). DOE, however, does not have siting authority for the Project. In this case, the New Hampshire Site Evaluation Committee has siting authority for the Project in the state of New Hampshire. Additionally, the USFS has siting authority for portions of the Project located in the White Mountain National Forest. (For further discussion, see Sections 1.1-1.3 of the final EIS.) While DOE's authority is limited to the approval or denial of the amended Presidential permit application (August 2015) as requested by the Applicant, DOE's policy is to analyze not only the proposed border crossing, but also the alignment of new infrastructure required between the proposed border crossing and connection to the existing U.S. electricity system as a "connected action" under NEPA. In keeping with this policy, DOE analyzed the potential environmental impacts of the alignment proposed by the Applicant. In addition, in response to input from Cooperating Agencies, other agencies, and extensive public comment, DOE analyzed a range of other alignments and underground and overhead configurations between the proposed border crossing and connection with the existing U.S. electricity system. The EIS analyzes in detail the No Action Alternative and eleven action alternatives. Additionally, seventeen alternatives were considered but eliminated from detailed analysis. Section 2.4 of the final EIS has been updated with additional information on alternatives considered but eliminated from detailed analysis. Among these alternatives, DOE considered two alternate border crossings. One was an alternative that would utilize the existing National Grid Phase I/II route, including its border crossing in Vermont. Based on its review of the National Grid alternative DOE determined that this alternative is not reasonable. Section

0093-1

2.4.3 of the final EIS has been updated with additional information related to the National Grid alternative. Separately, in response to comments received on the draft EIS, DOE considered a second alternative border crossing in Vermont, specifically identified as a border crossing at Derby Line, VT that would utilize I-91. DOE determined that this alternative is not reasonable. Section 2.4.17 of the final EIS has been added to reflect consideration of this alternative and DOE's determination.

Northern Pass EIS Website Comment Receipt

Refers to Comment placed on Mar 25, 2016

ID: 8841

Date Entered: Mar 25, 2016

Source: Website

Topics: Purpose and Need, Alternatives, Viewshed/Scenery, Private Property/Land Use, Economic, Tourism, Quality of Life, Cumulative Effects, Forest Service Lands

Name: Claire Lupton

Organization:

Email: luptoncopy@aol.com

Mailing Address: 75 Newell Road

City: Whitefield

State: NH

Zip: 03598

Country: US

Comment: As a direct abutter of the proposed Northern Pass, I respectfully submit the following comments related to the Draft Environmental Impact Statement and Section 106.

First, I want to express my strong opposition to the project as currently proposed. One side of my property borders Forest Lake, a small pristine lake that is home to nesting loons and abundant wildlife. Crossing my property on the opposite side is a power line right-of-way which would be used by the Northern Pass as now proposed.

I was dismayed to learn that while Northern Pass Transmission LLC has determined it's feasible to bury transmission lines in other parts of the project, the company considers it unfeasible to bury the lines fully, including where they cross my property.

I respectfully request the following:

That the Northern Pass be fully buried, with all burial alternatives fully examined. Full burial is technically and economically feasible for long distances with minimal impact to the environment and property owners. It is used by other projects in the region. DOE recently issued Presidential Permits for projects that cross from Canada to New York and Vermont using burial technology in

0094-1

Thank you for your comment. The EIS analyzes several full-burial alternatives in detail (Alternatives 3, 4a, 4b, and 4c). The potential environmental impacts of all twelve alternatives, as well as technical constraints and costs, are discussed throughout the EIS.

0094-1

transportation corridors. In addition, Hydro-Quebec is participating in a proposed fully-buried transmission project at the NY/VT border. Northern Pass should use current technology and bury all lines.

That the Final Environmental Impact Statement reject Northern Pass's unsubstantiated claim that full burial in the I-93 corridor (Alternative 4a), is not doable, or require Northern Pass to independently verify this claim.

That the FEIS examine alternative international border crossings, including I-91/I-89/I-93 burial routes, which are shorter and less environmentally impactful than the proposed route.

That the FEIS correct flaws in the DEIS visual impact analysis to include the visual experience of residents, second homeowners and visitors to this largely undeveloped region.

That the FEIS examine alternative energy options, including distributed generation like solar, grid scale battery storage and energy efficiency as reasonable alternatives to Northern Pass as proposed. These options would create new jobs, have less environmental impact and reduce our reliance on imported energy.

That the FEIS fully examine the issues of fuel diversity and security. Climatic changes and internal energy needs within Canada may well make future Canadian hydropower generation less certain and prices more volatile. Substantially increasing imports of large-scale hydropower may be a risky way to reduce dependence on natural gas compared to an in-region mix of energy efficiency, distributed generation and storage and grid improvements.

Thank you for considering my comments.

Claire Lupton
75 Newell Road
Whitefield, NH 03598

0094-1
Continued 0094-1 cont'd

0094-2 0094-2

Thank you for your comment. The EIS analyzes in detail several alternatives that involve underground cable in the I-93 corridor, including Alternatives 4a, 4b, 4c, 5a, 6a, and 6b. Alternatives 4a, 4b, and 4c would be fully underground. The regulatory framework governing utilities in roadway corridors is discussed in the Land Use Technical Report and the EIS, see Section 3.1.6.4.

0094-4

0094-5 0094-3

Thank you for your comment. Northern Pass has applied to the Department of Energy for a Presidential permit for an international border crossing associated with an HVDC transmission line that would run from Quebec, Canada to Deerfield, NH. Executive Order (EO) 10485, as amended by EO 12038, "requires that executive permission be obtained for the construction and maintenance at the borders of the United States of facilities for the exportation or importation of electric energy." DOE is authorized to "receive applications for the construction, operation, maintenance, or connection, at the borders of the United States, of facilities for the transmission of electric energy between the United States and a foreign country[.]" and "[u]pon finding the issuance of the permit to be consistent with the public interest, and, after obtaining the favorable recommendations of the Secretary of State and the Secretary of Defense thereon, to issue to the applicant, as appropriate, a permit for [the] construction, operation, maintenance, or connection." (EO 10485). DOE, however, does not have siting authority for the Project. In this case, the New Hampshire Site Evaluation Committee has siting authority for the Project in the state of New Hampshire. Additionally, the USFS has siting authority for portions of the Project located in the White Mountain National Forest. (For further discussion, see Sections 1.1-1.3 of the final EIS.) While DOE's authority is limited to the approval or denial of the amended Presidential permit application (August 2015) as requested by the Applicant, DOE's policy is to analyze not only the proposed border crossing, but also the alignment of new infrastructure required between the proposed border crossing and connection to the existing U.S. electricity system as a "connected action" under NEPA. In keeping with this policy, DOE analyzed the potential environmental impacts of the alignment proposed by the Applicant. In addition, in response to input from Cooperating Agencies, other agencies, and extensive public comment, DOE analyzed a range of other alignments and

0094-6

underground and overhead configurations between the proposed border crossing and connection with the existing U.S. electricity system. The EIS analyzes in detail the No Action Alternative and eleven action alternatives. Additionally, seventeen alternatives were considered but eliminated from detailed analysis. Section 2.4 of the final EIS has been updated with additional information on alternatives considered but eliminated from detailed analysis. Among these alternatives, DOE considered two alternate border crossings. One was an alternative that would utilize the existing National Grid Phase I/II route, including its border crossing in Vermont. Based on its review of the National Grid alternative DOE determined that this alternative is not reasonable. Section 2.4.3 of the final EIS has been updated with additional information related to the National Grid alternative. Separately, in response to comments received on the draft EIS, DOE considered a second alternative border crossing in Vermont, specifically identified as a border crossing at Derby Line, VT that would utilize I-91. DOE determined that this alternative is not reasonable. Section 2.4.17 of the final EIS has been added to reflect consideration of this alternative and DOE's determination.

0094-4

Thank you for your comment. The value of scenic sensitivity used in the analysis is the greater of scenic concern or viewer exposure, not the average. Therefore, low viewer exposure in the Northern Section and the WMNF, for example, does not lower the scenic sensitivity of these areas. The rationale for the viewer exposure ratings is explained in Section 2.4.2.5 of the Visual Impact Assessment Technical Report. As discussed, use data are generally not available for scenic or recreation resources in New Hampshire and estimates of transient and tourist populations would be excessively speculative. Therefore, census data were used as an indicator of how many potential viewers exist in an area. The scenic value of the undeveloped nature of the area is captured through the other elements of the landscape assessment, including intrinsic visual quality. The viewer exposure metric was included in this analysis to represent the sensitivity of areas with many viewers but less intrinsic scenic quality.

0094-5

Thank you for your comment. The EIS analyzes in detail the No Action Alternative and eleven action alternatives. Additionally, seventeen alternatives were considered but eliminated from detailed analysis. Section 2.4 of the final EIS has been updated with additional information on alternatives considered but eliminated from detailed analysis. A power generation alternative

was considered but was eliminated from detailed analysis in the EIS because it is not a reasonable alternative. Section 2.4.8 of the final EIS has been updated with additional information about this alternative.

0094-6

Thank you for your comment. Section 4.1.2 of the EIS includes analysis of the impact of the Project on electricity generation, by source and type. However, other impacts of the Project on general fuel diversity, future sources of supply, and energy security are beyond the scope of this EIS.

Northern Pass EIS Website Comment Receipt

Refers to Comment placed on Mar 28, 2016

ID: 8856

Date Entered: Mar 28, 2016

Source: Website

Topics: Viewshed/Scenery

Name: Mark Labuski

Organization:

Email: usnrad-hiking@yahoo.com

Mailing Address: 29 Violets Path

City: Elizabethtown

State: PA

Zip: 17022

Country: US

Comment: My wife and I are avid hikers and nature lovers who fell in love with the White Mountains in New Hampshire after a family vacation several years ago. We loved it so much that after a one week vacation, we decided to buy land and we built our second home at the base of the Kinsman Mountains in Easton, NH. We love that the land's beauty is unspoiled despite multiple use and we sincerely want to keep it that way. Please consider the following issues with regards to the proposed Northern Pass project:

1. Northern Pass should be fully buried and DOE should examine all burial alternatives. Full burial is technically doable and is being used by other projects in the region. Northern Pass should do the same. The DEIS appropriately examines full burial in New Hampshire (Alternatives 3 and 4— click here for a map of the DEIS alternative routes).

Transmission line burial is technologically and economically viable for long distances with minimal social or environmental impacts. But it is critical to select the appropriate corridor for burial. Recently DOE has issued Presidential Permits for projects that cross from Canada into New York and VT using modern burial technology in transportation corridors. In a separate endeavor, Hydro-Quebec is participating in another proposed fully-buried transmission project at the NY-VT border. Likewise, Northern Pass should use current technology and bury all of the lines.

0095-1

Thank you for your comment. Northern Pass has applied to the Department of Energy for a Presidential permit for an HVDC transmission line that would run from Quebec, Canada to Deerfield, NH. Executive Order (EO) 10485, as amended by EO 12038, "requires that executive permission be obtained for the construction and maintenance at the borders of the United States of facilities for the exportation or importation of electric energy." DOE is authorized to "receive applications for the construction, operation, maintenance, or connection, at the borders of the United States, of facilities for the transmission of electric energy between the United States and a foreign country[,]" and "[u]pon finding the issuance of the permit to be consistent with the public interest, and, after obtaining the favorable recommendations of the Secretary of State and the Secretary of Defense thereon, to issue to the applicant, as appropriate, a permit for [the] construction, operation, maintenance, or connection." (EO 10485). DOE, however, does not have siting authority for the Project. In this case, the New Hampshire Site Evaluation Committee has siting authority for the Project in the state of New Hampshire. Additionally, the USFS has siting authority for portions of the Project located in the White Mountain National Forest. (For further discussion, see Sections 1.1-1.3 of the final EIS.) While DOE's authority is limited to the approval or denial of the amended Presidential permit application (August 2015) as requested by the Applicant, DOE's policy is to analyze not only the proposed border crossing, but also the alignment of new infrastructure required between the proposed border crossing and connection to the existing U.S. electricity system as a connected action. In keeping with this policy, DOE analyzed the potential environmental impacts of the alignment proposed by the Applicant. In addition, in response to input from Cooperating Agencies, other agencies, and extensive public comment, DOE analyzed a range of other alignments and underground and overhead configurations between the proposed border crossing and connection with the existing U.S. electricity system. The EIS analyzes in detail the No Action Alternative and eleven action alternatives. The EIS analyzes several full-burial alternatives in detail (Alternatives 3, 4a, 4b, and 4c). The potential environmental impacts of all twelve alternatives, as well as technical constraints and costs, are discussed throughout the EIS. Additionally, seventeen alternatives were considered but eliminated from detailed analysis. Section 2.4 of the final EIS has been updated with additional information on alternatives considered but eliminated from detailed analysis.

0095-1

In the Final Environmental Impact Statement (FEIS), DOE should:

- Reject Northern Pass's misleading and unsubstantiated claim that full burial in the I-93 corridor (Alternative 4a), is not doable, or require Northern Pass to independently verify this claim.

- Examine full burial as outlined in Alternative 4a, but site the DC to AC converter station in Bow NH, where Merrimack Station is located. Merrimack Station is NH's largest coal-fired power plant, and one of New England's top sources of toxic and greenhouse gas pollution. It is also one of the most expensive sources of power for the New England grid. Full burial of Northern Pass to Bow, linked with the decommissioning of this power plant (now for sale by one of the Northern Pass partners, Eversource NH) is a reasonable alternative to consider as it meets the "purpose and need" of this project, even as defined by Northern Pass itself.

- Examine alternative international border crossings, including I-91 burial routes. The DEIS only considers the one border crossing into NH proposed by Northern Pass. Yet DOE's role in the Presidential Permit process is to examine the costs and benefits of a transmission line from Canada into the United States, regardless of where it crosses. A much shorter, less environmentally impacting, full burial route under Interstate-91 in VT will get this power to its intended market in southern New England. The Governor of Vermont has stated that Vermont is ready to consider this concept. A variation on this alternative would be full burial under Interstate-91 in VT to Interstate -89 to Interstate-93 in NH to Londonderry, NH, which is currently the intended terminus for the Northern Pass project. Both of these Interstate-91 burial routes should be studied in the DEIS.

2. Flawed DEIS visual impact analysis. The FEIS needs to correct flaws in the DEIS visual impact analysis. The DEIS correctly ranks the North Country of NH as having high to very high intrinsic visual quality, and appropriately acknowledges that overhead lines and above-to-below-ground conversion stations would impact the visual landscape (and complete burial would not). However, to determine the overall visual impact based on viewer experiences, the DEIS uses a nonsensical approach based on the US Census data for the North Country. Using US Census data as a surrogate for real viewer experiences grossly underestimates the visual impacts of a project like Northern Pass on viewers and viewer expectations of this landscape. Regions such as New Hampshire's North Country, with more natural and undeveloped landscapes, typically have low resident population densities. Rather than US Census data, the FEIS should assess the visual expectations for the undeveloped landscape qualities of the North Country held by residents, second home owners, and visitors to the region.

3. Alternative Energy Options. The DEIS should examine distributed generation like solar, grid scale battery storage, and energy efficiency as reasonable alternatives to Northern Pass as proposed. They create as many if not more new jobs, have the least environmental impact, and will help reduce our reliance on imported energy. Energy efficiency and distributed generation are emphasized in New Hampshire's 2014 update of its 10-Year Energy Strategy. A recent New England grid operator (ISO-NE) report shows rooftop solar installations reducing overall demand by 390 megawatts in the coming years. Grid scale battery storage is practical today— over 40 megawatts of grid scale battery storage were just bid into the region's electric market. The U.S. energy storage market surged 243% in 2015 and is estimated could hit 1 gigawatt by 2019.

4. Energy Diversity. The FEIS should fully examine the issues of fuel diversity and security, along with alternative energy options. In 2015, Canadian hydropower provided close to 13% of New England's net electric energy. The DEIS projects that Northern Pass would increase net imported electricity by over 30%, growing imports of Canadian hydropower to close to 20% of our net electric energy and possibly more, given other projects currently competing to enter the New England market.

0095-2 0095-2

Thank you for your comment. Because an EIS is intended to inform decisionmakers and the public about potential impacts of a major federal action, DOE analyzes in detail several alternatives that involve underground cable in the I-93 corridor, including Alternatives 4a, 4b, 4c, 5a, 6a, and 6b. The regulatory framework governing utilities in roadway corridors, including through Franconia Notch (Section 4.3.6.4 of the EIS), is discussed in the Land Use Technical Report and the EIS, see Section 3.1.6.4. DOE has considered this comment and no change to the EIS was made.

0095-3

0095-3

Thank you for your comment. Alternative 4a is analyzed in detail in the EIS. Alternative project terminus and converter station locations (including Bow, NH; Buxton, ME; Vernon, VT; and Londonderry, NH) were considered but eliminated from detailed analysis in the EIS because they are not reasonable alternatives. Section 2.4.14 of the final EIS has been updated to include additional information about this alternative. Further, DOE does not have siting authority for the Project. In this case, the New Hampshire Site Evaluation Committee has siting authority for the Project in the state of New Hampshire. Additionally, the USFS has siting authority for portions of the Project located in the White Mountain National Forest. (For further discussion, see Sections 1.1-1.3 of the EIS.)

0095-4

0095-4

Thank you for your comment. Northern Pass has applied to the Department of Energy for a Presidential permit for an international border crossing associated with an HVDC transmission line that would run from Quebec, Canada to Deerfield, NH. Executive Order (EO) 10485, as amended by EO 12038, "requires that executive permission be obtained for the construction and maintenance at the borders of the United States of facilities for the exportation or importation of electric energy." DOE is authorized to "receive applications for the construction, operation, maintenance, or connection, at the borders of the United States, of facilities for the transmission of electric energy between the United States and a foreign country[,]" and "[u]pon finding the issuance of the permit to be consistent with the public interest, and, after obtaining the favorable recommendations of the Secretary of State and the Secretary of Defense thereon, to issue to the applicant, as appropriate, a permit for [the] construction, operation, maintenance, or connection." (EO 10485). DOE, however, does not have siting authority for the Project. In this case, the New Hampshire Site Evaluation

0095-5

0095-6

0095-7

Committee has siting authority for the Project in the state of New Hampshire. Additionally, the USFS has siting authority for portions of the Project located in the White Mountain National Forest. (For further discussion, see Sections 1.1-1.3 of the final EIS.) While DOE's authority is limited to the approval or denial of the amended Presidential permit application (August 2015) as requested by the Applicant, DOE's policy is to analyze not only the proposed border crossing, but also the alignment of new infrastructure required between the proposed border crossing and connection to the existing U.S. electricity system as a "connected action" under NEPA. In keeping with this policy, DOE analyzed the potential environmental impacts of the alignment proposed by the Applicant. In addition, in response to input from Cooperating Agencies, other agencies, and extensive public comment, DOE analyzed a range of other alignments and underground and overhead configurations between the proposed border crossing and connection with the existing U.S. electricity system. The EIS analyzes in detail the No Action Alternative and eleven action alternatives. Additionally, seventeen alternatives were considered but eliminated from detailed analysis. Section 2.4 of the final EIS has been updated with additional information on alternatives considered but eliminated from detailed analysis. Among these alternatives, DOE considered two alternate border crossings. One was an alternative that would utilize the existing National Grid Phase I/II route, including its border crossing in Vermont. Based on its review of the National Grid alternative DOE determined that this alternative is not reasonable. Section 2.4.3 of the final EIS has been updated with additional information related to the National Grid alternative. Separately, in response to comments received on the draft EIS, DOE considered a second alternative border crossing in Vermont, specifically identified as a border crossing at Derby Line, VT that would utilize I-91. DOE determined that this alternative is not reasonable. Section 2.4.17 of the final EIS has been added to reflect consideration of this alternative and DOE's determination.

0095-5

Thank you for your comment. The value of scenic sensitivity used in the analysis is the greater of scenic concern or viewer exposure, not the average. Therefore, low viewer exposure in the Northern Section and the WMNF, for example, does not lower the scenic sensitivity of these areas. The rationale for the viewer exposure ratings is explained in Section 2.4.2.5 of the Visual Impact Assessment Technical Report. As discussed, use data are generally not available for scenic or recreation resources in New Hampshire and estimates of transient and tourist populations would be excessively speculative. Therefore, census

data were used as an indicator of how many potential viewers exist in an area. The scenic value of the undeveloped nature of the area is captured through the other elements of the landscape assessment, including intrinsic visual quality. The viewer exposure metric was included in this analysis to represent the sensitivity of areas with many viewers but less intrinsic scenic quality.

0095-6

Thank you for your comment. The EIS analyzes in detail the No Action Alternative and eleven action alternatives. Additionally, seventeen alternatives were considered but eliminated from detailed analysis. Section 2.4 of the final EIS has been updated with additional information on alternatives considered but eliminated from detailed analysis. A power generation alternative was considered but was eliminated from detailed analysis in the EIS because it is not a reasonable alternative. Section 2.4.8 of the final EIS has been updated with additional information about this alternative.

0095-7

Thank you for your comment. Section 4.1.2 of the EIS includes analysis of the impact of the Project on electricity generation, by type of power plant. However, other impacts of the Project on general fuel diversity, future sources of supply and energy security are beyond the scope of this EIS.

Substantially increasing imports of large-scale hydropower may be a risky way to reduce dependence on natural gas (with its carbon emissions and volatile rates), compared to maximizing an in-region mix of energy efficiency, distributed generation like solar, and emerging tools like storage and grid improvements. And, like California hydropower during these past years of drought, future Canadian hydro power generation during the tenure of the Northern Pass project could become less certain, and prices more volatile, because of climatic changes in temperature and precipitation, and internal energy needs within Canada.

0095-7
Continued 0095-7 cont'd

Northern Pass EIS Website Comment Receipt

Refers to Comment placed on Mar 28, 2016

ID: 8865

Date Entered: Mar 28, 2016

Source: Website

Topics: Purpose and Need, Alternatives, Health and Safety, Vegetation, Wildlife, Viewshed/Scenery, Water / Wetlands, Soils, Recreation, Historic/Cultural, Quality of Life, Forest Service Lands, Design Criteria / Mitigation Measures

Organization:

Comment: 1. Northern Pass should be fully buried and DOE should examine all burial alternatives. Full burial is technically doable and is being used by other projects in the region. Northern Pass should do the same. The DEIS appropriately examines full burial in New Hampshire. Transmission line burial is technologically and economically viable for long distances with minimal social or environmental impacts. But it is critical to select the appropriate corridor for burial. Recently DOE has issued Presidential Permits for projects that cross from Canada into New York and VT using modern burial technology in transportation corridors. In a separate endeavor, Hydro-Quebec is participating in another proposed fully-buried transmission project at the NY-VT border. Likewise, Northern Pass should use current technology and bury all of the lines.

In the Final Environmental Impact Statement (FEIS), DOE should:

- o Reject Northern Pass's misleading and unsubstantiated claim that full burial in the I-93 corridor (Alternative 4a), is not doable, or require Northern Pass to independently verify this claim.
- o Examine full burial as outlined in Alternative 4a, but site the DC to AC converter station in Bow NH, where Merrimack Station is located. Merrimack Station is NH's largest coal-fired power plant, and one of New England's top sources of toxic and greenhouse gas pollution. It is also one of the most expensive sources of power for the New England grid. Full burial of Northern Pass to Bow, linked with the decommissioning of this power plant (now for sale by one of the Northern Pass partners, Eversource NH) is a reasonable alternative to consider as it meets the "purpose and need" of this project, even as defined by Northern Pass itself.
- o Examine alternative international border crossings, including I-91 burial routes. The DEIS only considers the one border crossing into NH proposed by Northern Pass. Yet DOE's role in the Presidential Permit process is to examine the costs and benefits of a transmission line from Canada into the United States, regardless of where it crosses. A much shorter, less environmentally impacting, full burial route under Interstate-91 in VT will get this power to its intended market in southern New England. The Governor of Vermont has stated that Vermont is ready to consider this concept. A variation on this alternative would be full burial under Interstate-91 in VT to Interstate -89 to Interstate-93 in NH to Londonderry, NH, which is currently the intended terminus for the Northern Pass project. Both of these Interstate-91 burial routes should be studied in the DEIS.

2. Flawed DEIS visual impact analysis. The FEIS needs to correct flaws in the DEIS visual impact

0096-1

Thank you for your comment. Northern Pass has applied to the Department of Energy for a Presidential permit for an HVDC transmission line that would run from Quebec, Canada to Deerfield, NH. Executive Order (EO) 10485, as amended by EO 12038, "requires that executive permission be obtained for the construction and maintenance at the borders of the United States of facilities for the exportation or importation of electric energy." DOE is authorized to "receive applications for the construction, operation, maintenance, or connection, at the borders of the United States, of facilities for the transmission of electric energy between the United States and a foreign country[,]" and "[u]pon finding the issuance of the permit to be consistent with the public interest, and, after obtaining the favorable recommendations of the Secretary of State and the Secretary of Defense thereon, to issue to the applicant, as appropriate, a permit for [the] construction, operation, maintenance, or connection." (EO 10485). DOE, however, does not have siting authority for the Project. In this case, the New Hampshire Site Evaluation Committee has siting authority for the Project in the state of New Hampshire. Additionally, the USFS has siting authority for portions of the Project located in the White Mountain National Forest. (For further discussion, see Sections 1.1-1.3 of the final EIS.) While DOE's authority is limited to the approval or denial of the amended Presidential permit application (August 2015) as requested by the Applicant, DOE's policy is to analyze not only the proposed border crossing, but also the alignment of new infrastructure required between the proposed border crossing and connection to the existing U.S. electricity system as a connected action. In keeping with this policy, DOE analyzed the potential environmental impacts of the alignment proposed by the Applicant. In addition, in response to input from Cooperating Agencies, other agencies, and extensive public comment, DOE analyzed a range of other alignments and underground and overhead configurations between the proposed border crossing and connection with the existing U.S. electricity system. The EIS analyzes in detail the No Action Alternative and eleven action alternatives. Additionally, seventeen alternatives were considered but eliminated from detailed analysis. Section 2.4 of the final EIS has been updated with additional information on alternatives considered but eliminated from detailed analysis. The EIS analyzes several full-burial alternatives in detail (Alternatives 3, 4a, 4b, and 4c). The potential environmental impacts of all twelve alternatives, as well as technical constraints and costs, are discussed throughout the EIS.

0096-1

0096-2

0096-3

0096-4

0096-5

0096-2

Thank you for your comment. Because an EIS is intended to inform decisionmakers and the public about potential impacts of a major federal action, DOE analyzes in detail several alternatives that involve underground cable in the I-93 corridor, including Alternatives 4a, 4b, 4c, 5a, 6a, and 6b. The regulatory framework governing utilities in roadway corridors, including through Franconia Notch (Section 4.3.6.4 of the EIS), is discussed in the Land Use Technical Report and the EIS, see Section 3.1.6.4. DOE has considered this comment and no change to the EIS was made.

0096-3

Thank you for your comment. Alternative 4a is analyzed in detail in the EIS. Alternative project terminus and converter station locations (including Bow, NH; Buxton, ME; Vernon, VT; and Londonderry, NH) were considered but eliminated from detailed analysis in the EIS because they are not reasonable alternatives. Section 2.4.14 of the final EIS has been updated to include additional information about this alternative. Further, DOE does not have siting authority for the Project. In this case, the New Hampshire Site Evaluation Committee has siting authority for the Project in the state of New Hampshire. Additionally, the USFS has siting authority for portions of the Project located in the White Mountain National Forest. (For further discussion, see Sections 1.1-1.3 of the EIS.)

0096-4

Thank you for your comment. Northern Pass has applied to the Department of Energy for a Presidential permit for an international border crossing associated with an HVDC transmission line that would run from Quebec, Canada to Deerfield, NH. Executive Order (EO) 10485, as amended by EO 12038, "requires that executive permission be obtained for the construction and maintenance at the borders of the United States of facilities for the exportation or importation of electric energy." DOE is authorized to "receive applications for the construction, operation, maintenance, or connection, at the borders of the United States, of facilities for the transmission of electric energy between the United States and a foreign country[,]" and "[u]pon finding the issuance of the permit to be consistent with the public interest, and, after obtaining the favorable recommendations of the Secretary of State and the Secretary of Defense thereon, to issue to the applicant, as appropriate, a permit for [the] construction, operation, maintenance, or connection." (EO 10485). DOE, however, does not have siting authority for the Project. In this case, the New Hampshire Site Evaluation

Committee has siting authority for the Project in the state of New Hampshire. Additionally, the USFS has siting authority for portions of the Project located in the White Mountain National Forest. (For further discussion, see Sections 1.1-1.3 of the final EIS.) While DOE's authority is limited to the approval or denial of the amended Presidential permit application (August 2015) as requested by the Applicant, DOE's policy is to analyze not only the proposed border crossing, but also the alignment of new infrastructure required between the proposed border crossing and connection to the existing U.S. electricity system as a "connected action" under NEPA. In keeping with this policy, DOE analyzed the potential environmental impacts of the alignment proposed by the Applicant. In addition, in response to input from Cooperating Agencies, other agencies, and extensive public comment, DOE analyzed a range of other alignments and underground and overhead configurations between the proposed border crossing and connection with the existing U.S. electricity system. The EIS analyzes in detail the No Action Alternative and eleven action alternatives. Additionally, seventeen alternatives were considered but eliminated from detailed analysis. Section 2.4 of the final EIS has been updated with additional information on alternatives considered but eliminated from detailed analysis. Among these alternatives, DOE considered two alternate border crossings. One was an alternative that would utilize the existing National Grid Phase I/II route, including its border crossing in Vermont. Based on its review of the National Grid alternative DOE determined that this alternative is not reasonable. Section 2.4.3 of the final EIS has been updated with additional information related to the National Grid alternative. Separately, in response to comments received on the draft EIS, DOE considered a second alternative border crossing in Vermont, specifically identified as a border crossing at Derby Line, VT that would utilize I-91. DOE determined that this alternative is not reasonable. Section 2.4.17 of the final EIS has been added to reflect consideration of this alternative and DOE's determination.

0096-5

Thank you for your comment. The value of scenic sensitivity used in the analysis is the greater of scenic concern or viewer exposure, not the average. Therefore, low viewer exposure in the Northern Section and the WMNF, for example, does not lower the scenic sensitivity of these areas. The rationale for the viewer exposure ratings is explained in Section 2.4.2.5 of the Visual Impact Assessment Technical Report. As discussed, use data are generally not available for scenic or recreation resources in New Hampshire and estimates of transient and tourist populations would be excessively speculative. Therefore, census

data were used as an indicator of how many potential viewers exist in an area. The scenic value of the undeveloped nature of the area is captured through the other elements of the landscape assessment, including intrinsic visual quality. The viewer exposure metric was included in this analysis to represent the sensitivity of areas with many viewers but less intrinsic scenic quality.

analysis. The DEIS correctly ranks the North Country of NH as having high to very high intrinsic visual quality, and appropriately acknowledges that overhead lines and above-to-below-ground conversion stations would impact the visual landscape (and complete burial would not). However, to determine the overall visual impact based on viewer experiences, the DEIS uses a nonsensical approach based on the US Census data for the North Country. Using US Census data as a surrogate for real viewer experiences grossly underestimates the visual impacts of a project like Northern Pass on viewers and viewer expectations of this landscape. Regions such as New Hampshire's North Country, with more natural and undeveloped landscapes, typically have low resident population densities. Rather than US Census data, the FEIS should assess the visual expectations for the undeveloped landscape qualities of the North Country held by residents, second home owners, and visitors to the region.

3. Alternative Energy Options. The DEIS should examine distributed generation like solar, grid scale battery storage, and energy efficiency as reasonable alternatives to Northern Pass as proposed. They create as many if not more new jobs, have the least environmental impact, and will help reduce our reliance on imported energy. Energy efficiency and distributed generation are emphasized in New Hampshire's 2014 update of its 10-Year Energy Strategy. A recent New England grid operator (ISO-NE) report shows rooftop solar installations reducing overall demand by 390 megawatts in the coming years. Grid scale battery storage is practical today— over 40 megawatts of grid scale battery storage were just bid into the region's electric market. The U.S. energy storage market surged 243% in 2015 and is estimated could hit 1 gigawatt by 2019.

4. Energy Diversity. The FEIS should fully examine the issues of fuel diversity and security, along with alternative energy options. In 2015, Canadian hydropower provided close to 13% of New England's net electric energy. The DEIS projects that Northern Pass would increase net imported electricity by over 30%, growing imports of Canadian hydropower to close to 20% of our net electric energy and possibly more, given other projects currently competing to enter the New England market. Substantially increasing imports of large-scale hydropower may be a risky way to reduce dependence on natural gas (with its carbon emissions and volatile rates), compared to maximizing an in-region mix of energy efficiency, distributed generation like solar, and emerging tools like storage and grid improvements. And, like California hydropower during these past years of drought, future Canadian hydro power generation during the tenure of the Northern Pass project could become less certain, and prices more volatile, because of climatic changes in temperature and precipitation, and internal energy needs within Canada.

0096-5

Continued 0096-5 cont'd

0096-6

Thank you for your comment. The EIS analyzes in detail the No Action Alternative and eleven action alternatives. Additionally, seventeen alternatives were considered but eliminated from detailed analysis. Section 2.4 of the final EIS has been updated with additional information on alternatives considered but eliminated from detailed analysis. A power generation alternative was considered but was eliminated from detailed analysis in the EIS because it is not a reasonable alternative. Section 2.4.8 of the final EIS has been updated with additional information about this alternative. Section 1.4 of the final EIS has been updated to include new information on market trends and energy use, including demand-side management and energy efficiency, since the draft EIS was published in 2015.

0096-6

0096-7

0096-7

Thank you for your comment. Section 4.1.2 of the EIS includes analysis of the impact of the Project on electricity generation, by source and type. However, other impacts of the Project on general fuel diversity, future sources of supply, and energy security are beyond the scope of this EIS.

Northern Pass EIS Website Comment Receipt

Refers to Comment placed on Mar 28, 2016

ID: 8868

Date Entered: Mar 28, 2016

Source: Website

Topics:

Name: Harry and Jill Brownfield

Organization:

Email: hbrown6905@aol.com

Mailing Address: 74 Acker Road

City: Newport

State: PA

Zip: 17074

Country: US

Comment: As you move forward with consideration of the Northern Pass project, please consider our comments in the following four areas:

1. Northern Pass should be fully buried and DOE should examine all burial alternatives. Full burial is technically doable and is being used by other projects in the region. Northern Pass should do the same. The DEIS appropriately examines full burial in New Hampshire.

Transmission line burial is technologically and economically viable for long distances with minimal social or environmental impacts. But it is critical to select the appropriate corridor for burial. Recently DOE has issued Presidential Permits for projects that cross from Canada into New York and VT using modern burial technology in transportation corridors. In a separate endeavor, Hydro-Quebec is participating in another proposed fully-buried transmission project at the NY-VT border. Likewise, Northern Pass should use current technology and bury all of the lines. In the Final Environmental Impact Statement (FEIS), DOE should: ?Reject Northern Pass's misleading and unsubstantiated claim that full burial in the I-93 corridor (Alternative 4a), is not doable, or require Northern Pass to independently verify this claim.

Examine full burial as outlined in Alternative 4a, but site the DC to AC converter station in Bow NH, where Merrimack Station is located. Merrimack Station is NH's largest coal-fired power plant, and one

0097-1

Thank you for your comment. Northern Pass has applied to the Department of Energy for a Presidential permit for an HVDC transmission line that would run from Quebec, Canada to Deerfield, NH. Executive Order (EO) 10485, as amended by EO 12038, "requires that executive permission be obtained for the construction and maintenance at the borders of the United States of facilities for the exportation or importation of electric energy." DOE is authorized to "receive applications for the construction, operation, maintenance, or connection, at the borders of the United States, of facilities for the transmission of electric energy between the United States and a foreign country[,]" and "[u]pon finding the issuance of the permit to be consistent with the public interest, and, after obtaining the favorable recommendations of the Secretary of State and the Secretary of Defense thereon, to issue to the applicant, as appropriate, a permit for [the] construction, operation, maintenance, or connection." (EO 10485). DOE, however, does not have siting authority for the Project. In this case, the New Hampshire Site Evaluation Committee has siting authority for the Project in the state of New Hampshire. Additionally, the USFS has siting authority for portions of the Project located in the White Mountain National Forest. (For further discussion, see Sections 1.1-1.3 of the final EIS.) While DOE's authority is limited to the approval or denial of the amended Presidential permit application (August 2015) as requested by the Applicant, DOE's policy is to analyze not only the proposed border crossing, but also the alignment of new infrastructure required between the proposed border crossing and connection to the existing U.S. electricity system as a connected action. In keeping with this policy, DOE analyzed the potential environmental impacts of the alignment proposed by the Applicant. In addition, in response to input from Cooperating Agencies, other agencies, and extensive public comment, DOE analyzed a range of other alignments and underground and overhead configurations between the proposed border crossing and connection with the existing U.S. electricity system. The EIS analyzes in detail the No Action Alternative and eleven action alternatives. The EIS analyzes several full-burial alternatives in detail (Alternatives 3, 4a, 4b, and 4c). The potential environmental impacts of all twelve alternatives, as well as technical constraints and costs, are discussed throughout the EIS. Additionally, seventeen alternatives were considered but eliminated from detailed analysis. Section 2.4 of the final EIS has been updated with additional information on alternatives considered but eliminated from detailed analysis.

0097-1

0097-2

0097-2

Thank you for your comment. Alternative 4a is analyzed in detail in the EIS. Alternative project terminus and converter station locations (including Bow, NH; Buxton, ME; Vernon, VT; and Londonderry, NH) were considered but eliminated from detailed analysis in the EIS because they are not reasonable alternatives. Section 2.4.14 of the final EIS has been updated to include additional information about this alternative. Further, DOE does not have siting authority for the Project. In this case, the New Hampshire Site Evaluation Committee has siting authority for the Project in the state of New Hampshire. Additionally, the USFS has siting authority for portions of the Project located in the White Mountain National Forest. (For further discussion, see Sections 1.1-1.3 of the EIS.)

of New England's top sources of toxic and greenhouse gas pollution. It is also one of the most expensive sources of power for the New England grid. Full burial of Northern Pass to Bow, linked with the decommissioning of this power plant (now for sale by one of the Northern Pass partners, Eversource NH) is a reasonable alternative to consider as it meets the "purpose and need" of this project, even as defined by Northern Pass itself.

Examine alternative international border crossings, including I-91 burial routes. The DEIS only considers the one border crossing into NH proposed by Northern Pass. Yet DOE's role in the Presidential Permit process is to examine the costs and benefits of a transmission line from Canada into the United States, regardless of where it crosses. A much shorter, less environmentally impacting, full burial route under Interstate-91 in VT will get this power to its intended market in southern New England. The Governor of Vermont has stated that Vermont is ready to consider this concept. A variation on this alternative would be full burial under Interstate-91 in VT to Interstate -89 to Interstate-93 in NH to Londonderry, NH, which is currently the intended terminus for the Northern Pass project. Both of these Interstate-91 burial routes should be studied in the DEIS.

2. Flawed DEIS visual impact analysis. The FEIS needs to correct flaws in the DEIS visual impact analysis. The DEIS correctly ranks the North Country of NH as having high to very high intrinsic visual quality, and appropriately acknowledges that overhead lines and above-to-below-ground conversion stations would impact the visual landscape (and complete burial would not). However, to determine the overall visual impact based on viewer experiences, the DEIS uses a nonsensical approach based on the US Census data for the North Country. Using US Census data as a surrogate for real viewer experiences grossly underestimates the visual impacts of a project like Northern Pass on viewers and viewer expectations of this landscape. Regions such as New Hampshire's North Country, with more natural and undeveloped landscapes, typically have low resident population densities. Rather than US Census data, the FEIS should assess the visual expectations for the undeveloped landscape qualities of the North Country held by residents, second home owners, and visitors to the region.

3. Alternative Energy Options. The DEIS should examine distributed generation like solar, grid scale battery storage, and energy efficiency as reasonable alternatives to Northern Pass as proposed. They create as many if not more new jobs, have the least environmental impact, and will help reduce our reliance on imported energy. Energy efficiency and distributed generation are emphasized in New Hampshire's 2014 update of its 10-Year Energy Strategy. A recent New England grid operator (ISO-NE) report shows rooftop solar installations reducing overall demand by 390 megawatts in the coming years. Grid scale battery storage is practical today— over 40 megawatts of grid scale battery storage were just bid into the region's electric market. The U.S. energy storage market surged 243% in 2015 and is estimated could hit 1 gigawatt by 2019.

4. Energy Diversity. The FEIS should fully examine the issues of fuel diversity and security, along with alternative energy options. In 2015, Canadian hydropower provided close to 13% of New England's net electric energy. The DEIS projects that Northern Pass would increase net imported electricity by over 30%, growing imports of Canadian hydropower to close to 20% of our net electric energy and possibly more, given other projects currently competing to enter the New England market. Substantially increasing imports of large-scale hydropower may be a risky way to reduce dependence on natural gas (with its carbon emissions and volatile rates), compared to maximizing an in-region mix of energy efficiency, distributed generation like solar, and emerging tools like storage and grid improvements. And, like California hydropower during these past years of drought, future Canadian hydro power generation during the tenure of the Northern Pass project could become less certain, and prices more volatile, because of climatic changes in temperature and precipitation, and internal

0097-2
Continued 0097-2 cont'd

0097-3

0097-3

Thank you for your comment. The EIS analyzes in detail the No Action Alternative and eleven action alternatives. Additionally, seventeen alternatives were considered but eliminated from detailed analysis. Section 2.4 of the final EIS has been updated with additional information on alternatives considered but eliminated from detailed analysis. Among these alternatives, DOE considered two alternate border crossings. One was an alternative that would utilize the existing National Grid Phase I/II route, including its border crossing in Vermont. Based on its review of the National Grid alternative DOE determined that this alternative is not reasonable. Section 2.4.3 of the final EIS has been updated with additional information related to the National Grid alternative. Separately, in response to comments received on the draft EIS, DOE considered a second alternative border crossing in Vermont, specifically identified as a border crossing at Derby Line, VT that would utilize I-91. DOE determined that this alternative is not reasonable. Section 2.4.17 of the final EIS has been added to reflect consideration of this alternative and DOE's determination.

0097-4

0097-5

0097-4

Thank you for your comment. The value of scenic sensitivity used in the analysis is the greater of scenic concern or viewer exposure, not the average. Therefore, low viewer exposure in the Northern Section and the WMNF, for example, does not lower the scenic sensitivity of these areas. The rationale for the viewer exposure ratings is explained in Section 2.4.2.5 of the Visual Impact Assessment Technical Report. As discussed, use data are generally not available for scenic or recreation resources in New Hampshire and estimates of transient and tourist populations would be excessively speculative. Therefore, census data were used as an indicator of how many potential viewers exist in an area. The scenic value of the undeveloped nature of the area is captured through the other elements of the landscape assessment, including intrinsic visual quality. The viewer exposure metric was included in this analysis to represent the sensitivity of areas with many viewers but less intrinsic scenic quality.

0097-6

0097-5

Thank you for your comment. The EIS analyzes in detail the No Action Alternative and eleven action alternatives. Additionally,

seventeen alternatives were considered but eliminated from detailed analysis. Section 2.4 of the final EIS has been updated with additional information on alternatives considered but eliminated from detailed analysis. A power generation alternative was considered but was eliminated from detailed analysis in the EIS because it is not a reasonable alternative. Section 2.4.8 of the final EIS has been updated with additional information about this alternative. Section 1.4 of the final EIS has been updated to include new information on market trends and energy use, including demand-side management and energy efficiency, since the draft EIS was published in 2015.

0097-6

Thank you for your comment. Section 4.1.2 of the EIS includes analysis of the impact of the Project on electricity generation, by source and type. However, other impacts of the Project on general fuel diversity, future sources of supply, and energy security are beyond the scope of this EIS.

energy needs within Canada.

Thank you for your consideration of our input.

0097-6
Continued 0097-6 cont'd

Northern Pass EIS Website Comment Receipt

Refers to Comment placed on Mar 28, 2016

ID: 8870

Date Entered: Mar 28, 2016

Source: Website

Topics: Purpose and Need

Organization:

Comment: Northern Pass should be fully buried and DOE should examine all burial alternatives. Full burial is technically doable and is being used by other projects in the region. Northern Pass should do the same. The DEIS appropriately examines full burial in New Hampshire (Alternatives 3 and 4— click here for a map of the DEIS alternative routes).

Transmission line burial is technologically and economically viable for long distances with minimal social or environmental impacts. But it is critical to select the appropriate corridor for burial. Recently DOE has issued Presidential Permits for projects that cross from Canada into New York and VT using modern burial technology in transportation corridors. In a separate endeavor, Hydro-Quebec is participating in another proposed fully-buried transmission project at the NY-VT border. Likewise, Northern Pass should use current technology and bury all of the lines.

In the Final Environmental Impact Statement (FEIS), DOE should:

Reject Northern Pass's misleading and unsubstantiated claim that full burial in the I-93 corridor (Alternative 4a), is not doable, or require Northern Pass to independently verify this claim.

Examine full burial as outlined in Alternative 4a, but site the DC to AC converter station in Bow NH, where Merrimack Station is located. Merrimack Station is NH's largest coal-fired power plant, and one of New England's top sources of toxic and greenhouse gas pollution. It is also one of the most expensive sources of power for the New England grid. Full burial of Northern Pass to Bow, linked with the decommissioning of this power plant (now for sale by one of the Northern Pass partners, Eversource NH) is a reasonable alternative to consider as it meets the "purpose and need" of this project, even as defined by Northern Pass itself.

Examine alternative international border crossings, including I-91 burial routes. The DEIS only considers the one border crossing into NH proposed by Northern Pass. Yet DOE's role in the Presidential Permit process is to examine the costs and benefits of a transmission line from Canada into the United States, regardless of where it crosses. A much shorter, less environmentally impacting, full burial route under Interstate-91 in VT will get this power to its intended market in southern New England. The Governor of Vermont has stated that Vermont is ready to consider this concept. A variation on this alternative would be full burial under Interstate-91 in VT to Interstate -89 to Interstate-93 in NH to Londonderry, NH, which is currently the intended terminus for the Northern Pass project. Both of these Interstate-91 burial routes should be studied in the DEIS.

Flawed DEIS visual impact analysis. The FEIS needs to correct flaws in the DEIS visual impact analysis. The DEIS correctly ranks the North Country of NH as having high to very high intrinsic visual quality, and appropriately acknowledges that overhead lines and above-to-below-ground conversion

0098-1

Thank you for your comment. Northern Pass has applied to the Department of Energy for a Presidential permit for an HVDC transmission line that would run from Quebec, Canada to Deerfield, NH. Executive Order (EO) 10485, as amended by EO 12038, "requires that executive permission be obtained for the construction and maintenance at the borders of the United States of facilities for the exportation or importation of electric energy." DOE is authorized to "receive applications for the construction, operation, maintenance, or connection, at the borders of the United States, of facilities for the transmission of electric energy between the United States and a foreign country[,]" and "[u]pon finding the issuance of the permit to be consistent with the public interest, and, after obtaining the favorable recommendations of the Secretary of State and the Secretary of Defense thereon, to issue to the applicant, as appropriate, a permit for [the] construction, operation, maintenance, or connection." (EO 10485). DOE, however, does not have siting authority for the Project. In this case, the New Hampshire Site Evaluation Committee has siting authority for the Project in the state of New Hampshire. Additionally, the USFS has siting authority for portions of the Project located in the White Mountain National Forest. (For further discussion, see Sections 1.1-1.3 of the final EIS.) While DOE's authority is limited to the approval or denial of the amended Presidential permit application (August 2015) as requested by the Applicant, DOE's policy is to analyze not only the proposed border crossing, but also the alignment of new infrastructure required between the proposed border crossing and connection to the existing U.S. electricity system as a connected action. In keeping with this policy, DOE analyzed the potential environmental impacts of the alignment proposed by the Applicant. In addition, in response to input from Cooperating Agencies, other agencies, and extensive public comment, DOE analyzed a range of other alignments and underground and overhead configurations between the proposed border crossing and connection with the existing U.S. electricity system. The EIS analyzes in detail the No Action Alternative and eleven action alternatives. The EIS analyzes several full-burial alternatives in detail (Alternatives 3, 4a, 4b, and 4c). The potential environmental impacts of all twelve alternatives, as well as technical constraints and costs, are discussed throughout the EIS. Additionally, seventeen alternatives were considered but eliminated from detailed analysis. Section 2.4 of the final EIS has been updated with additional information on alternatives considered but eliminated from detailed analysis.

0098-1

0098-2

0098-3

0098-4

0098-5

0098-2

Thank you for your comment. Because an EIS is intended to inform decisionmakers and the public about potential impacts of a major federal action, DOE analyzes in detail several alternatives that involve underground cable in the I-93 corridor, including Alternatives 4a, 4b, 4c, 5a, 6a, and 6b. The regulatory framework governing utilities in roadway corridors, including through Franconia Notch (Section 4.3.6.4 of the EIS), is discussed in the Land Use Technical Report and the EIS, see Section 3.1.6.4. DOE has considered this comment and no change to the EIS was made.

0098-3

Thank you for your comment. Alternative 4a is analyzed in detail in the EIS. Alternative project terminus and converter station locations (including Bow, NH; Buxton, ME; Vernon, VT; and Londonderry, NH) were considered but eliminated from detailed analysis in the EIS because they are not reasonable alternatives. Section 2.4.14 of the final EIS has been updated to include additional information about this alternative. Further, DOE does not have siting authority for the Project. In this case, the New Hampshire Site Evaluation Committee has siting authority for the Project in the state of New Hampshire. Additionally, the USFS has siting authority for portions of the Project located in the White Mountain National Forest. (For further discussion, see Sections 1.1-1.3 of the EIS.)

0098-4

Thank you for your comment. The EIS analyzes in detail the No Action Alternative and eleven action alternatives. Additionally, seventeen alternatives were considered but eliminated from detailed analysis. Section 2.4 of the final EIS has been updated with additional information on alternatives considered but eliminated from detailed analysis. Among these alternatives, DOE considered two alternate border crossings. One was an alternative that would utilize the existing National Grid Phase I/II route, including its border crossing in Vermont. Based on its review of the National Grid alternative DOE determined that this alternative is not reasonable. Section 2.4.3 of the final EIS has been updated with additional information related to the National Grid alternative. Separately, in response to comments received on the draft EIS, DOE considered a second alternative border crossing in Vermont, specifically identified as a border crossing at Derby Line, VT that would utilize I-91. DOE determined that this alternative is not reasonable. Section 2.4.17 of the final EIS has been added to reflect consideration of this alternative and DOE's determination.

0098-5

Thank you for your comment. The value of scenic sensitivity used in the analysis is the greater of scenic concern or viewer exposure, not the average. Therefore, low viewer exposure in the Northern Section and the WMNF, for example, does not lower the scenic sensitivity of these areas. The rationale for the viewer exposure ratings is explained in Section 2.4.2.5 of the Visual Impact Assessment Technical Report. As discussed, use data are generally not available for scenic or recreation resources in New Hampshire and estimates of transient and tourist populations would be excessively speculative. Therefore, census data were used as an indicator of how many potential viewers exist in an area. The scenic value of the undeveloped nature of the area is captured through the other elements of the landscape assessment, including intrinsic visual quality. The viewer exposure metric was included in this analysis to represent the sensitivity of areas with many viewers but less intrinsic scenic quality.

stations would impact the visual landscape (and complete burial would not). However, to determine the overall visual impact based on viewer experiences, the DEIS uses a nonsensical approach based on the US Census data for the North Country. Using US Census data as a surrogate for real viewer experiences grossly underestimates the visual impacts of a project like Northern Pass on viewers and viewer expectations of this landscape. Regions such as New Hampshire's North Country, with more natural and undeveloped landscapes, typically have low resident population densities. Rather than US Census data, the FEIS should assess the visual expectations for the undeveloped landscape qualities of the North Country held by residents, second home owners, and visitors to the region.

Alternative Energy Options. The DEIS should examine distributed generation like solar, grid scale battery storage, and energy efficiency as reasonable alternatives to Northern Pass as proposed. They create as many if not more new jobs, have the least environmental impact, and will help reduce our reliance on imported energy. Energy efficiency and distributed generation are emphasized in New Hampshire's 2014 update of its 10-Year Energy Strategy. A recent New England grid operator (ISO-NE) report shows rooftop solar installations reducing overall demand by 390 megawatts in the coming years. Grid scale battery storage is practical today— over 40 megawatts of grid scale battery storage were just bid into the region's electric market. The U.S. energy storage market surged 243% in 2015 and is estimated could hit 1 gigawatt by 2019.

Energy Diversity. The FEIS should fully examine the issues of fuel diversity and security, along with alternative energy options. In 2015, Canadian hydropower provided close to 13% of New England's net electric energy. The DEIS projects that Northern Pass would increase net imported electricity by over 30%, growing imports of Canadian hydropower to close to 20% of our net electric energy and possibly more, given other projects currently competing to enter the New England market. Substantially increasing imports of large-scale hydropower may be a risky way to reduce dependence on natural gas (with its carbon emissions and volatile rates), compared to maximizing an in-region mix of energy efficiency, distributed generation like solar, and emerging tools like storage and grid improvements. And, like California hydropower during these past years of drought, future Canadian hydro power generation during the tenure of the Northern Pass project could become less certain, and prices more volatile, because of climatic changes in temperature and precipitation, and internal energy needs within Canada.

0098-5
Continued 0098-5 cont'd

0098-6

Thank you for your comment. The EIS analyzes in detail the No Action Alternative and eleven action alternatives. Additionally, seventeen alternatives were considered but eliminated from detailed analysis. Section 2.4 of the final EIS has been updated with additional information on alternatives considered but eliminated from detailed analysis. A power generation alternative was considered but was eliminated from detailed analysis in the EIS because it is not a reasonable alternative. Section 2.4.8 of the final EIS has been updated with additional information about this alternative. Section 1.4 of the final EIS has been updated to include new information on market trends and energy use, including demand-side management and energy efficiency, since the draft EIS was published in 2015.

0098-6

0098-7

Thank you for your comment. Section 4.1.2 of the EIS includes analysis of the impact of the Project on electricity generation, by source and type. However, other impacts of the Project on general fuel diversity, future sources of supply, and energy security are beyond the scope of this EIS.

Northern Pass EIS Website Comment Receipt

Refers to Comment placed on Mar 28, 2016

ID: 8876

Date Entered: Mar 28, 2016

Source: Website

Topics: Alternatives, Health and Safety, Vegetation, Wildlife, Viewshed/Scenery, Water / Wetlands, Soils, Recreation, Private Property/Land Use, Historic/Cultural, Economic, Tourism, Quality of Life, Air Quality, Cumulative Effects, Forest Service Lands, NEPA Process, Design Criteria / Mitigation Measures, Environmental Justice

Name: Jean Devine

Organization:

Email: jeanm.devine@verizon.net

Mailing Address: 52 Raleigh Road

City: Belmont

State: MA

Country: US

Comment: I agree with the AMC in their assessment. The Northern Pass, if it passes, should be 100% buried. Alt. 3 & 4 allow for that. DOE also should explore the alternative of burying the line under Rt 91.

In the Final Environmental Impact Statement (FEIS), DOE should:

Reject Northern Pass's misleading and unsubstantiated claim that full burial in the I-93 corridor (Alternative 4a), is not doable, or require Northern Pass to independently verify this claim. Examine full burial as outlined in Alternative 4a, but site the DC to AC converter station in Bow NH, where Merrimack Station is located. Merrimack Station is NH's largest coal-fired power plant, and one of New England's top sources of toxic and greenhouse gas pollution. It is also one of the most expensive sources of power for the New England grid. Full burial of Northern Pass to Bow, linked with the decommissioning of this power plant (now for sale by one of the Northern Pass partners, Eversource NH) is a reasonable alternative to consider as it meets the "purpose and need" of this project, even as defined by Northern Pass itself.

Examine alternative international border crossings, including I-91 burial routes. The DEIS only considers the one border crossing into NH proposed by Northern Pass. Yet DOE's role in the Presidential Permit process is to examine the costs and benefits of a transmission line from Canada

0099-1

Thank you for your comment. Northern Pass has applied to the Department of Energy for a Presidential permit for an international border crossing associated with an HVDC transmission line that would run from Quebec, Canada to Deerfield, NH. Executive Order (EO) 10485, as amended by EO 12038, "requires that executive permission be obtained for the construction and maintenance at the borders of the United States of facilities for the exportation or importation of electric energy." DOE is authorized to "receive applications for the construction, operation, maintenance, or connection, at the borders of the United States, of facilities for the transmission of electric energy between the United States and a foreign country[,]" and "[u]pon finding the issuance of the permit to be consistent with the public interest, and, after obtaining the favorable recommendations of the Secretary of State and the Secretary of Defense thereon, to issue to the applicant, as appropriate, a permit for [the] construction, operation, maintenance, or connection." (EO 10485). DOE, however, does not have siting authority for the Project. In this case, the New Hampshire Site Evaluation Committee has siting authority for the Project in the state of New Hampshire. Additionally, the USFS has siting authority for portions of the Project located in the White Mountain National Forest. (For further discussion, see Sections 1.1-1.3 of the final EIS.) While DOE's authority is limited to the approval or denial of the amended Presidential permit application (August 2015) as requested by the Applicant, DOE's policy is to analyze not only the proposed border crossing, but also the alignment of new infrastructure required between the proposed border crossing and connection to the existing U.S. electricity system as a connected action. In keeping with this policy, DOE analyzed the potential environmental impacts of the alignment proposed by the Applicant. In addition, in response to input from Cooperating Agencies, other agencies, and extensive public comment, DOE analyzed a range of other alignments and underground and overhead configurations between the proposed border crossing and connection with the existing U.S. electricity system. The EIS analyzes in detail the No Action Alternative and eleven action alternatives. Additionally, seventeen alternatives were considered but eliminated from detailed analysis. Section 2.4 of the final EIS has been updated with additional information on alternatives considered but eliminated from detailed analysis. Among these alternatives, DOE considered two alternate border crossings. In response to comments received on the draft EIS, DOE considered an alternative border crossing in Vermont, specifically identified as a border crossing at Derby Line, VT that would utilize I-91. DOE determined that this alternative is not

0099-1

0099-2

0099-3

0099-4

reasonable. Section 2.4.17 of the final EIS has been added to reflect consideration of this alternative and DOE's determination.

0099-2

Thank you for your comment. Because an EIS is intended to inform decisionmakers and the public about potential impacts of a major federal action, DOE analyzes in detail several alternatives that involve underground cable in the I-93 corridor, including Alternatives 4a, 4b, 4c, 5a, 6a, and 6b. The regulatory framework governing utilities in roadway corridors, including through Franconia Notch (Section 4.3.6.4 of the EIS), is discussed in the Land Use Technical Report and the EIS, see Section 3.1.6.4. DOE has considered this comment and no change to the EIS was made.

0099-3

Thank you for your comment. Alternative 4a is analyzed in detail in the EIS. Alternative project terminus and converter station locations (including Bow, NH; Buxton, ME; Vernon, VT; and Londonderry, NH) were considered but eliminated from detailed analysis in the EIS because they are not reasonable alternatives. Section 2.4.14 of the final EIS has been updated to include additional information about this alternative. Further, DOE does not have siting authority for the Project. In this case, the New Hampshire Site Evaluation Committee has siting authority for the Project in the state of New Hampshire. Additionally, the USFS has siting authority for portions of the Project located in the White Mountain National Forest. (For further discussion, see Sections 1.1-1.3 of the EIS.)

0099-4

Thank you for your comment. The EIS analyzes in detail the No Action Alternative and eleven action alternatives. Additionally, seventeen alternatives were considered but eliminated from detailed analysis. Section 2.4 of the final EIS has been updated with additional information on alternatives considered but eliminated from detailed analysis. Among these alternatives, DOE considered two alternate border crossings. One was an alternative that would utilize the existing National Grid Phase I/II route, including its border crossing in Vermont. Based on its review of the National Grid alternative DOE determined that this alternative is not reasonable. Section 2.4.3 of the final EIS has been updated with additional information related to the National Grid alternative. Separately, in response to comments received on the draft EIS, DOE considered a second alternative border crossing in Vermont, specifically identified as a border crossing at

Derby Line, VT that would utilize I-91. DOE determined that this alternative is not reasonable. Section 2.4.17 of the final EIS has been added to reflect consideration of this alternative and DOE's determination.

into the United States, regardless of where it crosses. A much shorter, less environmentally impacting, full burial route under Interstate-91 in VT will get this power to its intended market in southern New England. The Governor of Vermont has stated that Vermont is ready to consider this concept. A variation on this alternative would be full burial under Interstate-91 in VT to Interstate -89 to Interstate-93 in NH to Londonderry, NH, which is currently the intended terminus for the Northern Pass project. Both of these Interstate-91 burial routes should be studied in the DEIS.

0099-4
Continued 0099-4 cont'd

Northern Pass EIS Website Comment Receipt

Refers to Comment placed on Mar 28, 2016

ID: 8883

Date Entered: Mar 28, 2016

Source: Website

Topics:

Organization:

Comment: I am writing to request that the Northern Pass be fully buried and that DOE examine all burial alternatives. Full burial is technically doable and is being used by other projects in the region. Northern Pass should do the same.

Transmission line burial is technologically and economically viable for long distances with minimal social or environmental impacts. But it is critical to select the appropriate corridor for burial. Recently DOE has issued Presidential Permits for projects that cross from Canada into New York and VT using modern burial technology in transportation corridors. In a separate endeavor, Hydro-Quebec is participating in another proposed fully-buried transmission project at the NY-VT border. Likewise, Northern Pass should use current technology and bury all of the lines.

In the Final Environmental Impact Statement (FEIS), DOE should:

1. Reject Northern Pass's misleading and unsubstantiated claim that full burial in the I-93 corridor (Alternative 4a), is not doable, or require Northern Pass to independently verify this claim.
2. Examine full burial as outlined in Alternative 4a, but site the DC to AC converter station in Bow NH, where Merrimack Station is located. Merrimack Station is NH's largest coal-fired power plant, and one of New England's top sources of toxic and greenhouse gas pollution. It is also one of the most expensive sources of power for the New England grid. Full burial of Northern Pass to Bow, linked with the decommissioning of this power plant (now for sale by one of the Northern Pass partners, Eversource NH) is a reasonable alternative to consider as it meets the "purpose and need" of this project, even as defined by Northern Pass itself.
3. Examine alternative international border crossings, including I-91 burial routes. The DEIS only considers the one border crossing into NH proposed by Northern Pass. Yet DOE's role in the Presidential Permit process is to examine the costs and benefits of a transmission line from Canada into the United States, regardless of where it crosses. A much shorter, less environmentally impacting, full burial route under Interstate-91 in VT will get this power to its intended market in southern New England. The Governor of Vermont has stated that Vermont is ready to consider this concept. A variation on this alternative would be full burial under Interstate-91 in VT to Interstate -89 to Interstate-93 in NH to Londonderry, NH, which is currently the intended terminus for the Northern

0100-1

Thank you for your comment. The EIS analyzes several full-burial alternatives in detail (Alternatives 3, 4a, 4b, and 4c). The potential environmental impacts of all twelve alternatives, as well as technical constraints and costs, are discussed throughout the EIS.

0100-2

Thank you for your comment. Because an EIS is intended to inform decisionmakers and the public about potential impacts of a major federal action, DOE analyzes in detail several alternatives that involve underground cable in the I-93 corridor, including Alternatives 4a, 4b, 4c, 5a, 6a, and 6b. The regulatory framework governing utilities in roadway corridors, including through Franconia Notch (Section 4.3.6.4 of the EIS), is discussed in the Land Use Technical Report and the EIS, see Section 3.1.6.4. DOE has considered this comment and no change to the EIS was made.

0100-3

Thank you for your comment. Alternative 4a is analyzed in detail in the EIS. Alternative project terminus and converter station locations (including Bow, NH; Buxton, ME; Vernon, VT; and Londonderry, NH) were considered but eliminated from detailed analysis in the EIS because they are not reasonable alternatives. Section 2.4.14 of the final EIS has been updated to include additional information about this alternative. Further, DOE does not have siting authority for the Project. In this case, the New Hampshire Site Evaluation Committee has siting authority for the Project in the state of New Hampshire. Additionally, the USFS has siting authority for portions of the Project located in the White Mountain National Forest. (For further discussion, see Sections 1.1-1.3 of the EIS.)

0100-4

Thank you for your comment. Northern Pass has applied to the Department of Energy for a Presidential permit for an international border crossing associated with an HVDC transmission line that would run from Quebec, Canada to Deerfield, NH. Executive Order (EO) 10485, as amended by EO 12038, "requires that executive permission be obtained for the construction and maintenance at the borders of the United States of facilities for the exportation or importation of electric energy." DOE is authorized to "receive applications for the construction, operation, maintenance, or connection, at the borders of the United States, of facilities for the transmission of electric energy between the United States and a foreign country[,]" and "[u]pon

finding the issuance of the permit to be consistent with the public interest, and, after obtaining the favorable recommendations of the Secretary of State and the Secretary of Defense thereon, to issue to the applicant, as appropriate, a permit for [the] construction, operation, maintenance, or connection." (EO 10485). DOE, however, does not have siting authority for the Project. In this case, the New Hampshire Site Evaluation Committee has siting authority for the Project in the state of New Hampshire. Additionally, the USFS has siting authority for portions of the Project located in the White Mountain National Forest. (For further discussion, see Sections 1.1-1.3 of the final EIS.) While DOE's authority is limited to the approval or denial of the amended Presidential permit application (August 2015) as requested by the Applicant, DOE's policy is to analyze not only the proposed border crossing, but also the alignment of new infrastructure required between the proposed border crossing and connection to the existing U.S. electricity system as a "connected action" under NEPA. In keeping with this policy, DOE analyzed the potential environmental impacts of the alignment proposed by the Applicant. In addition, in response to input from Cooperating Agencies, other agencies, and extensive public comment, DOE analyzed a range of other alignments and underground and overhead configurations between the proposed border crossing and connection with the existing U.S. electricity system. The EIS analyzes in detail the No Action Alternative and eleven action alternatives. Additionally, seventeen alternatives were considered but eliminated from detailed analysis. Section 2.4 of the final EIS has been updated with additional information on alternatives considered but eliminated from detailed analysis. Among these alternatives, DOE considered two alternate border crossings. One was an alternative that would utilize the existing National Grid Phase I/II route, including its border crossing in Vermont. Based on its review of the National Grid alternative DOE determined that this alternative is not reasonable. Section 2.4.3 of the final EIS has been updated with additional information related to the National Grid alternative. Separately, in response to comments received on the draft EIS, DOE considered a second alternative border crossing in Vermont, specifically identified as a border crossing at Derby Line, VT that would utilize I-91. DOE determined that this alternative is not reasonable. Section 2.4.17 of the final EIS has been added to reflect consideration of this alternative and DOE's determination.

Pass project. Both of these Interstate-91 burial routes should be studied in the DEIS.

Sincerely,

David Belford

0100-4 0100-4 cont'd
Continued

0101-1

Thank you for your comment. Northern Pass has applied to the Department of Energy for a Presidential permit for an international border crossing associated with an HVDC transmission line that would run from Quebec, Canada to Deerfield, NH. Executive Order (EO) 10485, as amended by EO 12038, "requires that executive permission be obtained for the construction and maintenance at the borders of the United States of facilities for the exportation or importation of electric energy." DOE is authorized to "receive applications for the construction, operation, maintenance, or connection, at the borders of the United States, of facilities for the transmission of electric energy between the United States and a foreign country[,]" and "[u]pon finding the issuance of the permit to be consistent with the public interest, and, after obtaining the favorable recommendations of the Secretary of State and the Secretary of Defense thereon, to issue to the applicant, as appropriate, a permit for [the] construction, operation, maintenance, or connection." (EO 10485). DOE, however, does not have siting authority for the Project. In this case, the New Hampshire Site Evaluation Committee has siting authority for the Project in the state of New Hampshire. Additionally, the USFS has siting authority for portions of the Project located in the White Mountain National Forest. (For further discussion, see Sections 1.1-1.3 of the final EIS.) While DOE's authority is limited to the approval or denial of the amended Presidential permit application (August 2015) as requested by the Applicant, DOE's policy is to analyze not only the proposed border crossing, but also the alignment of new infrastructure required between the proposed border crossing and connection to the existing U.S. electricity system as a "connected action" under NEPA. In keeping with this policy, DOE analyzed the potential environmental impacts of the alignment proposed by the Applicant. In addition, in response to input from Cooperating Agencies, other agencies, and extensive public comment, DOE analyzed a range of other alignments and underground and overhead configurations between the proposed border crossing and connection with the existing U.S. electricity system. The EIS analyzes in detail the No Action Alternative and eleven action alternatives. Additionally, seventeen alternatives were considered but eliminated from detailed analysis. Section 2.4 of the final EIS has been updated with additional information on alternatives considered but eliminated from detailed analysis. Among these alternatives, DOE considered two alternate border crossings. One was an alternative that would utilize the existing National Grid Phase I/II route, including its border crossing in Vermont. Based on its review of the National Grid alternative DOE determined that this alternative is not reasonable. Section

Thank you for the opportunity. At the Northern Pass public scoping meetings in March of 2011, in September 2013, you said that DOE's primary role was to determine eligibility for a Presidential permit which if approved would allow the project to cross the international border. You also said the responsibility for siting the project within the New Hampshire would rest with the New Hampshire SEC. In the Draft EIS and supplement, you have presented many alternatives to siting the project. Most of these alternatives include a burial portion. We thank you for all the burial alternatives because we believe they had a major impact on Northern Pass deciding to bury an additional 52 miles from Bethlehem to Bridgewater. It is interesting to note in the Draft EIS that you did not consider any alternative border crossings. All the alternative routes start from the same point in Pittsburg. It would seem if your primary role is to determine if Northern Pass should cross the border that you should have looked at some alternative crossing points. For example, a more direct route would be a border crossing at Derby Line, Vermont, connecting to Route 91 and then to Route 93. In closing, I would like to say the best siting alternative for the Northern Pass transmission project is complete burial, similar to the Champlain Hudson in New York, the Northeast Energy Link in Maine, the New England Clean Power Link in Vermont, and the Draft EIS alternative 4 A. Bury it all the way.

0101-1

2.4.3 of the final EIS has been updated with additional information related to the National Grid alternative. Separately, in response to comments received on the draft EIS, DOE considered a second alternative border crossing in Vermont, specifically identified as a border crossing at Derby Line, VT that would utilize I-91. DOE determined that this alternative is not reasonable. Section 2.4.17 of the final EIS has been added to reflect consideration of this alternative and DOE's determination.

I did sign up and fill in a card. I did fill in a card also. MR. KERVITSKY: I apologize. SPEAKER: That's okay. I'm Suzanne Smith from Grafton County District 8, and like Representative Ford, I was at the State House until past my bedtime last night so I was not able to make it to Concord to the Grappone Center. It would have been my preference also, although it was a beautiful drive up here tonight. As has been said before, the new improved Northern Pass plan makes residents of New Hampshire winners and losers. The northern part of New Hampshire which has been devastated right below where we would cross the border will now be covered with high voltage transmission lines and towers. Where there is a larger percentage of money, tourists, the line will be buried. Plymouth, Holderness and Ashland, gateway towns to Squam Lake and Plymouth State University, will see their lines buried. However, as we cross the border from Ashland to Bridgewater, New Hampton, Bristol Hill and even Franklin, towers again will rise high along the roads and the rights-of-way. Peaked Hill in Bristol, home to barely visible poles now, will be inundated with tall towers. Why is Northern Pass picking and choosing. The Environmental Impact Statement Draft does address and give some great alternatives for Northern Pass. You'll have to excuse me. I lost my glasses somewhere along the way so I can barely see what I've written. Massachusetts and Connecticut will enjoy this expanded energy from Quebec Hydropower and much of New Hampshire will have the pleasure of gazing at tall towers for many years to come. I live in Hebron and Northern Pass towers do come down along through Hebron from Monroe down towards Massachusetts. We don't need any more lines above ground. I would ask the Department of Energy to consider that if the line were buried all the way, and we wanted to avoid the White Mountain National Forest, you could cross the international line at Derby, Vermont, come down along Interstate 91 and cross over either along Route 25 in New Hampshire or all the way down and across 89 to get down to Massachusetts utilizing the interstate rights of way, and I think that would be an excellent improvement, avoiding the White Mountain National Forest all together. You have listened thus far to the people of New Hampshire and I really appreciate the last draft that was put out by the Department of Energy. I ask you to continue to listen and bury the Northern Pass or deny the Presidential permit. Thank you.

0102-1

Thank you for your comment. Northern Pass has applied to the Department of Energy for a Presidential permit for an international border crossing associated with an HVDC transmission line that would run from Quebec, Canada to Deerfield, NH. Executive Order (EO) 10485, as amended by EO 12038, "requires that executive permission be obtained for the construction and maintenance at the borders of the United States of facilities for the exportation or importation of electric energy." DOE is authorized to "receive applications for the construction, operation, maintenance, or connection, at the borders of the United States, of facilities for the transmission of electric energy between the United States and a foreign country[,]" and "[u]pon finding the issuance of the permit to be consistent with the public interest, and, after obtaining the favorable recommendations of the Secretary of State and the Secretary of Defense thereon, to issue to the applicant, as appropriate, a permit for [the] construction, operation, maintenance, or connection." (EO 10485). DOE, however, does not have siting authority for the Project. In this case, the New Hampshire Site Evaluation Committee has siting authority for the Project in the state of New Hampshire. Additionally, the USFS has siting authority for portions of the Project located in the White Mountain National Forest. (For further discussion, see Sections 1.1-1.3 of the final EIS.) While DOE's authority is limited to the approval or denial of the amended Presidential permit application (August 2015) as requested by the Applicant, DOE's policy is to analyze not only the proposed border crossing, but also the alignment of new infrastructure required between the proposed border crossing and connection to the existing U.S. electricity system as a "connected action" under NEPA. In keeping with this policy, DOE analyzed the potential environmental impacts of the alignment proposed by the Applicant. In addition, in response to input from Cooperating Agencies, other agencies, and extensive public comment, DOE analyzed a range of other alignments and underground and overhead configurations between the proposed border crossing and connection with the existing U.S. electricity system. The EIS analyzes in detail the No Action Alternative and eleven action alternatives. Additionally, seventeen alternatives were considered but eliminated from detailed analysis. Section 2.4 of the final EIS has been updated with additional information on alternatives considered but eliminated from detailed analysis. Among these alternatives, DOE considered two alternate border crossings. One was an alternative that would utilize the existing National Grid Phase I/II route, including its border crossing in Vermont. Based on its review of the National Grid alternative DOE determined that this alternative is not reasonable. Section

0102-1

2.4.3 of the final EIS has been updated with additional information related to the National Grid alternative. Separately, in response to comments received on the draft EIS, DOE considered a second alternative border crossing in Vermont, specifically identified as a border crossing at Derby Line, VT that would utilize I-91. DOE determined that this alternative is not reasonable. Section 2.4.17 of the final EIS has been added to reflect consideration of this alternative and DOE's determination.

For the record, Chris Thayer from Sugar Hill, New Hampshire. My name is Chris Thayer, and I'm Director of North Country Programs & Outreach for the Appalachian Mountain Club. The AMC is the oldest conservation and recreation organization in the country, with more than 100,000 members and supporters from Maine to Washington, DC, including more than 12,000 here in New Hampshire. In our 140-year history, AMC has helped to protect this region's open spaces, including from poorly sited energy generation and transmission projects like Northern Pass which is requesting to use high impact old technologies to maximize profits at the expense of New Hampshire's iconic landscape. As I testified earlier this week in Waterville, same guy, AMC commends the Department of Energy and the DEIS for examining alternatives using 21st century technology, full burial HVDC transmission line technologies and accepting it as a feasible technology in other recently issued DOE Presidential Permits in Vermont and New York. The Northern Pass application for a Presidential permit has only moved the needle slightly towards participation in the 21st century, going for a position that burial is totally impracticable to now avoiding permit denial in the White Mountain National Forest by conceding to bury 60 of the proposed 192 miles of their project. The Applicant is now almost one-third of the way into this century. The DEIS examines alternative routes and burial options only in New Hampshire; yet, DOE acknowledges its role is not to select the actual project route and DOE has failed to look at alternative border crossings, focusing only on the single one proposed by the Applicant. Yet the international crossing is where DOE does have jurisdiction when it issues a Presidential permit. A much more direct and shorter route with far less environmental impact or cost for this energy would be to cross the Canadian border into Vermont and follow a buried route along I-91 south to the intended markets in Massachusetts, Connecticut and Rhode Island. Further making this a logical and reasonable alternative is that I-91 goes directly by the Vermont Yankee nuclear power plant in Vernon, Vermont, which is now undergoing decommissioning and its grid switchyard is without power and about to go unused. Even the Governor of Vermont stated publicly in 2014 that Vermont is open to such a concept. The Applicant claims that Northern Pass is needed to help fill the gap caused by the Vermont nuclear power plant going off line. Yet the DEIS does not even explore physically going there. Variation of this concept is burial along I-91 to I-89 to I-93 that would end up in Londonderry, New Hampshire, the intended terminus for the currently proposed project. Both of these alternatives using different international border crossings should be studied and included in the FEIS. The DEIS assumes that the Northern Pass project would result in a net increase in imports of electricity into the ISO New England region of approximately 6600 gigawatt hours of electricity, assuming 76 percent of maximum capacity through the year and that this would result in approximately a 9 percent decrease in natural gas, five percent decrease in coal and a 43 percent decrease in oil demand for electric generation in the ISO New England region. It also translates these into greenhouse gas emission reductions. Since there are now many other competing projects in the region, including more than 20 that have been bid into the New England Clean Power RFP solicited by Mass., Connecticut and Rhode Island that would also reduce greenhouse emissions, the FEIS needs to be updated and acknowledge that those reductions would likely occur with or without the permitting of Northern Pass. As framed in the DEIS, it assumes these reductions in fossil fuel, electric generation and resultant greenhouse gas reductions would not occur without the permitting of Northern Pass. I'll submit the rest of my comments and just wrap up for the sake of time.

0103-1

Thank you for your comment. Northern Pass has applied to the Department of Energy for a Presidential permit for an international border crossing associated with an HVDC transmission line that would run from Quebec, Canada to Deerfield, NH. Executive Order (EO) 10485, as amended by EO 12038, "requires that executive permission be obtained for the construction and maintenance at the borders of the United States of facilities for the exportation or importation of electric energy." DOE is authorized to "receive applications for the construction, operation, maintenance, or connection, at the borders of the United States, of facilities for the transmission of electric energy between the United States and a foreign country[,]" and "[u]pon finding the issuance of the permit to be consistent with the public interest, and, after obtaining the favorable recommendations of the Secretary of State and the Secretary of Defense thereon, to issue to the applicant, as appropriate, a permit for [the] construction, operation, maintenance, or connection." (EO 10485). DOE, however, does not have siting authority for the Project. In this case, the New Hampshire Site Evaluation Committee has siting authority for the Project in the state of New Hampshire. Additionally, the USFS has siting authority for portions of the Project located in the White Mountain National Forest. (For further discussion, see Sections 1.1-1.3 of the final EIS.) While DOE's authority is limited to the approval or denial of the amended Presidential permit application (August 2015) as requested by the Applicant, DOE's policy is to analyze not only the proposed border crossing, but also the alignment of new infrastructure required between the proposed border crossing and connection to the existing U.S. electricity system as a "connected action" under NEPA. In keeping with this policy, DOE analyzed the potential environmental impacts of the alignment proposed by the Applicant. In addition, in response to input from Cooperating Agencies, other agencies, and extensive public comment, DOE analyzed a range of other alignments and underground and overhead configurations between the proposed border crossing and connection with the existing U.S. electricity system. The EIS analyzes in detail the No Action Alternative and eleven action alternatives. Additionally, seventeen alternatives were considered but eliminated from detailed analysis. Section 2.4 of the final EIS has been updated with additional information on alternatives considered but eliminated from detailed analysis. Among these alternatives, DOE considered two alternate border crossings. One was an alternative that would utilize the existing National Grid Phase I/II route, including its border crossing in Vermont. Based on its review of the National Grid alternative DOE determined that this alternative is not reasonable. Section

0103-1

0103-2

2.4.3 of the final EIS has been updated with additional information related to the National Grid alternative. Separately, in response to comments received on the draft EIS, DOE considered a second alternative border crossing in Vermont, specifically identified as a border crossing at Derby Line, VT that would utilize I-91. DOE determined that this alternative is not reasonable. Section 2.4.17 of the final EIS has been added to reflect consideration of this alternative and DOE's determination.

0103-2

Thank you for your comment. Section 4.1.10 of the EIS includes an analysis of greenhouse gas emissions potentially resulting from the Project. The cumulative analysis of air quality in Chapter 5 of the EIS considers other regional energy projects that have emerged as part of the competitive clean energy RFPs in ISO-NE. Under the No Action Alternative, it is assumed that existing energy sources would continue to supply the ISO-NE region.

Northern Pass EIS Website Comment Receipt

Refers to Comment placed on Mar 31, 2016

ID: 9147

Date Entered: Mar 31, 2016

Source: Website

Topics: Purpose and Need, Alternatives, Health and Safety, Vegetation, Wildlife, Viewshed/Scenery, Water / Wetlands, Soils, Recreation, Private Property/Land Use, Taxes, Historic/Cultural, Economic, Traffic, National Security, Tourism, Quality of Life, Air Quality, Cumulative Effects, Noise, Forest Service Lands, NEPA Process, Design Criteria / Mitigation Measures, Environmental Justice, Other

Organization:

Comment: 1. Northern Pass is not an environmentally green proposal because of the destruction of forests to create the hydro-power. The loss of these carbon sinks exacerbates and accelerates climate change.

2. Northern Pass should be fully buried, if at all permitted, and DOE should examine all burial alternatives. Full burial is technically doable and is being used by other projects in the region. Northern Pass should do the same. Northern Pass should use current technology and bury all of the lines, specifically, along Rte 93.

3. Northern Pass should examine alternative international border crossings, including I-91 burial routes. The DEIS only considers the one border crossing into NH proposed by Northern Pass. Yet DOE's role in the Presidential Permit process is to examine the costs and benefits of a transmission line from Canada into the United States, regardless of where it crosses. A much shorter, less environmentally impacting, full burial route under Interstate-91 in VT will get this power to its intended market in southern New England. The Governor of Vermont has stated that Vermont is ready to consider this concept. A variation on this alternative would be full burial under Interstate-91 in VT to Interstate -89 to Interstate-93 in NH to Londonderry, NH, which is currently the intended terminus for the Northern Pass project. Both of these Interstate-91 burial routes should be studied in the DEIS.

4. This project will ruin the NH scenery and the beauty of its visual aspects.

5. Alternative Energy Options. The DEIS should examine roof-top solar and energy efficiency as alternatives to Northern Pass. They create as many if not more new jobs, have the least environmental impact, and will help reduce our reliance on imported energy. Canadian energy is imported energy.

6. This is just another project to allow a big business to make money at the expense of the people and the landscape we love. We don't need this project and don't want it.

0104-1

Thank you for your comment. Potential impacts in Canada from the construction and operation of electricity infrastructure, including hydropower generation and transmission in Canada, are beyond the scope of this NEPA analysis. NEPA does not require an analysis of potential environmental impacts that occur within another sovereign nation that result from actions approved by that sovereign nation. Additionally, the construction and operation of Hydro-Quebec power generation projects and electricity transmission line projects in the bulk Hydro-Quebec system will occur regardless of and independent to whether DOE issues a Presidential permit for the proposed Northern Pass Project international border crossing. For these reasons, potential environmental impacts in Canada are not addressed in this EIS. Section 1.5.4.1 of the Final EIS has been updated in response to this comment.

0104-2

0104-1 Thank you for your comment. Northern Pass has applied to the Department of Energy for a Presidential permit for an HVDC transmission line that would run from Quebec, Canada to Deerfield, NH. Executive Order (EO) 10485, as amended by EO 12038, "requires that executive permission be obtained for the construction and maintenance at the borders of the United States of facilities for the exportation or importation of electric energy." DOE is authorized to "receive applications for the construction, operation, maintenance, or connection, at the borders of the United States, of facilities for the transmission of electric energy between the United States and a foreign country[,] and "[u]pon finding the issuance of the permit to be consistent with the public interest, and, after obtaining the favorable recommendations of the Secretary of State and the Secretary of Defense thereon, to issue to the applicant, as appropriate, a permit for [the] construction, operation, maintenance, or connection." (EO 10485). DOE, however, does not have siting authority for the Project. In this case, the New Hampshire Site Evaluation Committee has siting authority for the Project in the state of New Hampshire. Additionally, the USFS has siting authority for portions of the Project located in the White Mountain National Forest. (For further discussion, see Sections 1.1-1.3 of the final EIS.) While DOE's authority is limited to the approval or denial of the amended Presidential permit application (August 2015) as requested by the Applicant, DOE's policy is to analyze not only the proposed border crossing, but also the alignment of new infrastructure required between the proposed border crossing and connection to the existing U.S. electricity system as a connected action. In keeping with this policy, DOE analyzed the

potential environmental impacts of the alignment proposed by the Applicant. In addition, in response to input from Cooperating Agencies, other agencies, and extensive public comment, DOE analyzed a range of other alignments and underground and overhead configurations between the proposed border crossing and connection with the existing U.S. electricity system. The EIS analyzes in detail the No Action Alternative and eleven action alternatives. The EIS analyzes several full-burial alternatives in detail (Alternatives 3, 4a, 4b, and 4c). The potential environmental impacts of all twelve alternatives, as well as technical constraints and costs, are discussed throughout the EIS. Additionally, seventeen alternatives were considered but eliminated from detailed analysis. Section 2.4 of the final EIS has been updated with additional information on alternatives considered but eliminated from detailed analysis.

0104-3

Thank you for your comment. Northern Pass has applied to the Department of Energy for a Presidential permit for an international border crossing associated with an HVDC transmission line that would run from Quebec, Canada to Deerfield, NH. Executive Order (EO) 10485, as amended by EO 12038, "requires that executive permission be obtained for the construction and maintenance at the borders of the United States of facilities for the exportation or importation of electric energy." DOE is authorized to "receive applications for the construction, operation, maintenance, or connection, at the borders of the United States, of facilities for the transmission of electric energy between the United States and a foreign country[,] and "[u]pon finding the issuance of the permit to be consistent with the public interest, and, after obtaining the favorable recommendations of the Secretary of State and the Secretary of Defense thereon, to issue to the applicant, as appropriate, a permit for [the] construction, operation, maintenance, or connection." (EO 10485). DOE, however, does not have siting authority for the Project. In this case, the New Hampshire Site Evaluation Committee has siting authority for the Project in the state of New Hampshire. Additionally, the USFS has siting authority for portions of the Project located in the White Mountain National Forest. (For further discussion, see Sections 1.1-1.3 of the final EIS.) While DOE's authority is limited to the approval or denial of the amended Presidential permit application (August 2015) as requested by the Applicant, DOE's policy is to analyze not only the proposed border crossing, but also the alignment of new infrastructure required between the proposed border crossing and connection to the existing U.S. electricity system as a "connected action" under NEPA. In keeping with this policy, DOE

analyzed the potential environmental impacts of the alignment proposed by the Applicant. In addition, in response to input from Cooperating Agencies, other agencies, and extensive public comment, DOE analyzed a range of other alignments and underground and overhead configurations between the proposed border crossing and connection with the existing U.S. electricity system. The EIS analyzes in detail the No Action Alternative and eleven action alternatives. Additionally, seventeen alternatives were considered but eliminated from detailed analysis. Section 2.4 of the final EIS has been updated with additional information on alternatives considered but eliminated from detailed analysis. Among these alternatives, DOE considered two alternate border crossings. One was an alternative that would utilize the existing National Grid Phase I/II route, including its border crossing in Vermont. Based on its review of the National Grid alternative DOE determined that this alternative is not reasonable. Section 2.4.3 of the final EIS has been updated with additional information related to the National Grid alternative. Separately, in response to comments received on the draft EIS, DOE considered a second alternative border crossing in Vermont, specifically identified as a border crossing at Derby Line, VT that would utilize I-91. DOE determined that this alternative is not reasonable. Section 2.4.17 of the final EIS has been added to reflect consideration of this alternative and DOE's determination.

0104-4

Thank you for your comment. The EIS analyzes in detail the No Action Alternative and eleven action alternatives. Additionally, seventeen alternatives were considered but eliminated from detailed analysis. Section 2.4 of the final EIS has been updated with additional information on alternatives considered but eliminated from detailed analysis. A power generation alternative was considered but was eliminated from detailed analysis in the EIS because it is not a reasonable alternative. Section 2.4.8 of the final EIS has been updated with additional information about this alternative. Section 1.4 of the final EIS has been updated to include new information on market trends and energy use, including demand-side management and energy efficiency, since the draft EIS was published in 2015.

Northern Pass EIS Website Comment Receipt

Refers to Comment placed on Apr 2, 2016

ID: 9158

Date Entered: Apr 2, 2016

Source: Website

Topics: Purpose and Need, Alternatives, Health and Safety, Historic/Cultural, Economic, Tourism, Quality of Life, Cumulative Effects

Organization:

Comment: Northern Pass should be fully buried and DOE should examine all burial alternatives. Full burial is possible and is being used by other projects in the region. Northern Pass should do the same. The DEIS appropriately examines full burial in New Hampshire (Alternatives 3 and 4— click here for a map of the DEIS alternative routes).

Transmission line burial is technologically and economically viable for long distances with minimal social or environmental impacts. But it is critical to select the appropriate corridor for burial. Recently DOE has issued Presidential Permits for projects that cross from Canada into New York and VT using modern burial technology in transportation corridors. In a separate endeavor, Hydro-Quebec is participating in another proposed fully-buried transmission project at the NY-VT border. Likewise, Northern Pass should use current technology and bury all of the lines.

In the Final Environmental Impact Statement (FEIS), DOE should:

1. Reject Northern Pass's misleading and unsubstantiated claim that full burial in the I-93 corridor (Alternative 4a), is not doable, or require Northern Pass to independently verify this claim.
2. Examine full burial as outlined in Alternative 4a, but site the DC to AC converter station in Bow NH, where Merrimack Station is located. Merrimack Station is NH's largest coal-fired power plant, and one of New England's top sources of toxic and greenhouse gas pollution. It is also one of the most expensive sources of power for the New England grid. Full burial of Northern Pass to Bow, linked with the decommissioning of this power plant (now for sale by one of the Northern Pass partners, Eversource NH) is a reasonable alternative to consider as it meets the "purpose and need" of this project, even as defined by Northern Pass itself.
3. Examine alternative international border crossings, including I-91 burial routes. The DEIS only considers the one border crossing into NH proposed by Northern Pass. Yet DOE's role in the Presidential Permit process is to examine the costs and benefits of a transmission line from Canada into the United States, regardless of where it crosses. A much shorter, less environmentally impacting, full burial route under Interstate-91 in VT will get this power to its intended market in southern New England. The Governor of Vermont has stated that Vermont is ready to consider this concept. A variation on this alternative would be full burial under Interstate-91 in VT to Interstate -89 to Interstate-93 in NH to Londonderry, NH, which is currently the intended terminus for the Northern

0105-1

Thank you for your comment. Northern Pass has applied to the Department of Energy for a Presidential permit for an HVDC transmission line that would run from Quebec, Canada to Deerfield, NH. Executive Order (EO) 10485, as amended by EO 12038, "requires that executive permission be obtained for the construction and maintenance at the borders of the United States of facilities for the exportation or importation of electric energy." DOE is authorized to "receive applications for the construction, operation, maintenance, or connection, at the borders of the United States, of facilities for the transmission of electric energy between the United States and a foreign country[,]" and "[u]pon finding the issuance of the permit to be consistent with the public interest, and, after obtaining the favorable recommendations of the Secretary of State and the Secretary of Defense thereon, to issue to the applicant, as appropriate, a permit for [the]

0105-1

construction, operation, maintenance, or connection." (EO 10485). DOE, however, does not have siting authority for the Project. In this case, the New Hampshire Site Evaluation Committee has siting authority for the Project in the state of New Hampshire. Additionally, the USFS has siting authority for portions of the Project located in the White Mountain National Forest. (For further discussion, see Sections 1.1-1.3 of the final EIS.) While DOE's authority is limited to the approval or denial of the amended Presidential permit application (August 2015) as requested by the Applicant, DOE's policy is to analyze not only the proposed border crossing, but also the alignment of new infrastructure required between the proposed border crossing and connection to the existing U.S. electricity system as a connected action. In keeping with this policy, DOE analyzed the potential environmental impacts of the alignment proposed by the Applicant. In addition, in response to input from Cooperating Agencies, other agencies, and extensive public comment, DOE analyzed a range of other alignments and underground and overhead configurations between the proposed border crossing and connection with the existing U.S. electricity system. The EIS analyzes in detail the No Action Alternative and eleven action alternatives. The EIS analyzes several full-burial alternatives in detail (Alternatives 3, 4a, 4b, and 4c). The potential environmental impacts of all twelve alternatives, as well as technical constraints and costs, are discussed throughout the EIS. Additionally, seventeen alternatives were considered but eliminated from detailed analysis. Section 2.4 of the final EIS has been updated with additional information on alternatives considered but eliminated from detailed analysis.

0105-2

0105-3

0105-4

0105-2

Thank you for your comment. Because an EIS is intended to inform decisionmakers and the public about potential impacts of a major federal action, DOE analyzes in detail several alternatives that involve underground cable in the I-93 corridor, including Alternatives 4a, 4b, 4c, 5a, 6a, and 6b. The regulatory framework governing utilities in roadway corridors, including through Franconia Notch (Section 4.3.6.4 of the EIS), is discussed in the Land Use Technical Report and the EIS, see Section 3.1.6.4. DOE has considered this comment and no change to the EIS was made.

0105-3

Thank you for your comment. Alternative 4a is analyzed in detail in the EIS. Alternative project terminus and converter station locations (including Bow, NH; Buxton, ME; Vernon, VT; and Londonderry, NH) were considered but eliminated from detailed analysis in the EIS because they are not reasonable alternatives. Section 2.4.14 of the final EIS has been updated to include additional information about this alternative. Further, DOE does not have siting authority for the Project. In this case, the New Hampshire Site Evaluation Committee has siting authority for the Project in the state of New Hampshire. Additionally, the USFS has siting authority for portions of the Project located in the White Mountain National Forest. (For further discussion, see Sections 1.1-1.3 of the EIS.)

0105-4

Thank you for your comment. Northern Pass has applied to the Department of Energy for a Presidential permit for an international border crossing associated with an HVDC transmission line that would run from Quebec, Canada to Deerfield, NH. Executive Order (EO) 10485, as amended by EO 12038, "requires that executive permission be obtained for the construction and maintenance at the borders of the United States of facilities for the exportation or importation of electric energy." DOE is authorized to "receive applications for the construction, operation, maintenance, or connection, at the borders of the United States, of facilities for the transmission of electric energy between the United States and a foreign country[,]" and "[u]pon finding the issuance of the permit to be consistent with the public interest, and, after obtaining the favorable recommendations of the Secretary of State and the Secretary of Defense thereon, to issue to the applicant, as appropriate, a permit for [the] construction, operation, maintenance, or connection." (EO 10485). DOE, however, does not have siting authority for the Project. In this case, the New Hampshire Site Evaluation Committee has siting authority for the Project in the state of New

Hampshire. Additionally, the USFS has siting authority for portions of the Project located in the White Mountain National Forest. (For further discussion, see Sections 1.1-1.3 of the final EIS.) While DOE's authority is limited to the approval or denial of the amended Presidential permit application (August 2015) as requested by the Applicant, DOE's policy is to analyze not only the proposed border crossing, but also the alignment of new infrastructure required between the proposed border crossing and connection to the existing U.S. electricity system as a "connected action" under NEPA. In keeping with this policy, DOE analyzed the potential environmental impacts of the alignment proposed by the Applicant. In addition, in response to input from Cooperating Agencies, other agencies, and extensive public comment, DOE analyzed a range of other alignments and underground and overhead configurations between the proposed border crossing and connection with the existing U.S. electricity system. The EIS analyzes in detail the No Action Alternative and eleven action alternatives. Additionally, seventeen alternatives were considered but eliminated from detailed analysis. Section 2.4 of the final EIS has been updated with additional information on alternatives considered but eliminated from detailed analysis. Among these alternatives, DOE considered two alternate border crossings. One was an alternative that would utilize the existing National Grid Phase I/II route, including its border crossing in Vermont. Based on its review of the National Grid alternative DOE determined that this alternative is not reasonable. Section 2.4.3 of the final EIS has been updated with additional information related to the National Grid alternative. Separately, in response to comments received on the draft EIS, DOE considered a second alternative border crossing in Vermont, specifically identified as a border crossing at Derby Line, VT that would utilize I-91. DOE determined that this alternative is not reasonable. Section 2.4.17 of the final EIS has been added to reflect consideration of this alternative and DOE's determination.

Pass project. Both of these Interstate-91 burial routes should be studied in the DEIS.

Flawed DEIS visual impact analysis: The FEIS needs to correct flaws in the DEIS visual impact analysis. The DEIS correctly ranks the North Country of NH as having high to very high intrinsic visual quality, and appropriately acknowledges that overhead lines and above-to-below-ground conversion stations would impact the visual landscape (and complete burial would not). However, to determine the overall visual impact based on viewer experiences, the DEIS uses a nonsensical approach based on the US Census data for the North Country. Using US Census data as a surrogate for real viewer experiences grossly underestimates the visual impacts of a project like Northern Pass on viewers and viewer expectations of this landscape. Regions such as New Hampshire's North Country, with more natural and undeveloped landscapes, typically have low resident population densities. Rather than US Census data, the FEIS should assess the visual expectations for the undeveloped landscape qualities of the North Country held by residents, second home owners, and visitors to the region.

Alternative Energy Options. The DEIS should examine distributed generation like solar, grid scale battery storage, and energy efficiency as reasonable alternatives to Northern Pass as proposed. They create as many if not more new jobs, have the least environmental impact, and will help reduce our reliance on imported energy. Energy efficiency and distributed generation are emphasized in New Hampshire's 2014 update of its 10-Year Energy Strategy. A recent New England grid operator (ISO-NE) report shows rooftop solar installations reducing overall demand by 390 megawatts in the coming years. Grid scale battery storage is practical today— over 40 megawatts of grid scale battery storage were just bid into the region's electric market. The U.S. energy storage market surged 243% in 2015 and is estimated could hit 1 gigawatt by 2019.

Energy Diversity. The FEIS should fully examine the issues of fuel diversity and security, along with alternative energy options. In 2015, Canadian hydropower provided close to 13% of New England's net electric energy. The DEIS projects that Northern Pass would increase net imported electricity by over 30%, growing imports of Canadian hydropower to close to 20% of our net electric energy and possibly more, given other projects currently competing to enter the New England market. Substantially increasing imports of large-scale hydropower may be a risky way to reduce dependence on natural gas (with its carbon emissions and volatile rates), compared to maximizing an in-region mix of energy efficiency, distributed generation like solar, and emerging tools like storage and grid improvements. And, like California hydropower during these past years of drought, future Canadian hydro power generation during the tenure of the Northern Pass project could become less certain, and prices more volatile, because of climatic changes in temperature and precipitation, and internal energy needs within Canada.

0105-4

Continued 0105-4 cont'd

0105-5

0105-5

Thank you for your comment. The value of scenic sensitivity used in the analysis is the greater of scenic concern or viewer exposure, not the average. Therefore, low viewer exposure in the Northern Section and the WMNF, for example, does not lower the scenic sensitivity of these areas. The rationale for the viewer exposure ratings is explained in Section 2.4.2.5 of the Visual Impact Assessment Technical Report. As discussed, use data are generally not available for scenic or recreation resources in New Hampshire and estimates of transient and tourist populations would be excessively speculative. Therefore, census data were used as an indicator of how many potential viewers exist in an area. The scenic value of the undeveloped nature of the area is captured through the other elements of the landscape assessment, including intrinsic visual quality. The viewer exposure metric was included in this analysis to represent the sensitivity of areas with many viewers but less intrinsic scenic quality.

0105-6

0105-6

0105-7

Thank you for your comment. The EIS analyzes in detail the No Action Alternative and eleven action alternatives. Additionally, seventeen alternatives were considered but eliminated from detailed analysis. Section 2.4 of the final EIS has been updated with additional information on alternatives considered but eliminated from detailed analysis. A power generation alternative was considered but was eliminated from detailed analysis in the EIS because it is not a reasonable alternative. Section 2.4.8 of the final EIS has been updated with additional information about this alternative. Section 1.4 of the final EIS has been updated to include new information on market trends and energy use, including demand-side management and energy efficiency, since the draft EIS was published in 2015.

0105-7

Thank you for your comment. Section 4.1.2 of the EIS includes analysis of the impact of the Project on electricity generation, by source and type. However, other impacts of the Project on general fuel diversity, future sources of supply, and energy security are beyond the scope of this EIS.

Northern Pass EIS Website Comment Receipt

Refers to Comment placed on Apr 2, 2016

ID: 9165

Date Entered: Apr 2, 2016

Source: Website

Topics: Alternatives, Health and Safety, Viewshed/Scenery, Private Property/Land Use, Quality of Life, Design Criteria / Mitigation Measures

Name: Elmer Lupton

Organization:

Email: neillup@aol.com

Mailing Address: 75 Newell Lane

City: Whitefield

State: NH

Zip: 03598

Country: US

Comment: I own property in northern New Hampshire. The Northern Pass as proposed would run above ground directly through my property. The project's towers would be about 130 feet high. As a direct abutter of the proposed Northern Pass, I respectfully submit the following comments related to the Draft Environmental Impact Statement and Section 106.

First, I want to express my strong opposition to the project as currently proposed.

I am especially concerned about the security of the lines and the related security of my property and adjoining properties. In November 2015 in Europe, power transmission lines like the proposed overhead Northern Pass were downed by explosives in what was thought to be a terrorist attack. The result was that 1.6 million people lost power and were in darkness. The Crimea declared a state of emergency (See attached articles).

Our area in Northern New Hampshire is very lightly populated, and overhead lines and towers are easily and totally accessible. They could be a tempting and accessible target. A person with evil intent could drive a vehicle on public roads directly underneath the proposed lines on and near our property, drive less than a minute --a couple of hundred yards -- on a dirt road and position the vehicle immediately adjacent to one of the towers. If the vehicle contained explosives, it could bring down the

0106-1

Thank you for your comment. Section 4.1.4.2 in the EIS and Section 3.1.9 of the Public Health and Safety Technical Report discuss impacts related to intentional destructive acts. Impacts to health and safety from intentional destructive acts would be unlikely to be greater than the potential impacts from events involving extreme weather. If such an act were to occur and to succeed in destroying aboveground infrastructure or other components of the project, the main consequence for the public would be the temporary loss of electrical service from the Project (i.e., the loss of the 1,090 or 1,200 MW supplied by the Project) in the ISO-NE region.

0106-1

tower.

I have heard no consideration of security of this sort and of the havoc that could be created if the area I understand the Northern Pass is intended to serve (New Jersey/New York) were suddenly deprived of power. Buried lines would appear to address and remove this security concern.

The overhead lines would also be a massive impairment to the gentle rural and wilderness character of the area. One side of my property borders Forest Lake, a small pristine lake that is home to nesting loons and abundant wildlife. Crossing my property on the opposite side is a power line right-of-way which would be used by the Northern Pass as now proposed.

I was dismayed to learn that while Northern Pass Transmission LLC has determined it's feasible to bury transmission lines in other parts of the project, the company considers it unfeasible to bury the lines fully, including where they cross my property.

I respectfully request the following:

That the Northern Pass be fully buried, with all burial alternatives fully examined. Full burial is technically and economically feasible for long distances with minimal impact to the environment and property owners. It is used by other projects in the region. DOE recently issued Presidential Permits for projects that cross from Canada to New York and Vermont using burial technology in transportation corridors. In addition, Hydro-Quebec is participating in a proposed fully-buried transmission project at the NY/VT border. Northern Pass should use current technology and bury all lines.

That the Final Environmental Impact Statement (FEIS) reject Northern Pass's unsubstantiated claim that full burial in the I-93 corridor (Alternative 4a), is not doable, or require Northern Pass to independently verify this claim.

That the FEIS address the security problems and deficiencies which the overhead lines represent.

That the FEIS examine alternative international border crossings, including I-91/I-89/I-93 burial routes, which are shorter and less environmentally impactful than the proposed route.

That the FEIS correct flaws in the DEIS visual impact analysis to include the visual experience of residents, second homeowners and visitors to this largely undeveloped region.

That the FEIS examine alternative energy options, including distributed generation like solar, grid scale battery storage and energy efficiency as reasonable alternatives to Northern Pass as proposed. These options would create new jobs, have less environmental impact and reduce our reliance on imported energy.

That the FEIS fully examine the issues of fuel diversity and security. Climatic changes and internal energy needs within Canada may well make future Canadian hydropower generation less certain and prices more volatile. Substantially increasing imports of large-scale hydropower may be a risky way to reduce dependence on natural gas compared to an in-region mix of energy efficiency, distributed generation and storage and grid improvements.

0106-2

Thank you for your comment. Because an EIS is intended to inform decisionmakers and the public about potential impacts of a major federal action, DOE analyzes in detail several fully- and partially-buried alternatives that involve underground cable in the I-93 corridor, including Alternatives 4a, 4b, 4c, 5a, 6a, and 6b. The regulatory framework governing utilities in roadway corridors is discussed in the Land Use Technical Report and the EIS, see Section 3.1.6.4. DOE has considered this comment but no change to the EIS was made. Northern Pass has applied to the Department of Energy for a Presidential permit for an HVDC transmission line that would run from Quebec, Canada to Deerfield, NH. Executive Order (EO) 10485, as amended by EO 12038, "requires that executive permission be obtained for the construction and maintenance at the borders of the United States of facilities for the exportation or importation of electric energy." DOE is authorized to "receive applications for the construction, operation, maintenance, or connection, at the borders of the United States, of facilities for the transmission of electric energy between the United States and a foreign country[,]" and "[u]pon finding the issuance of the permit to be consistent with the public interest, and, after obtaining the favorable recommendations of the Secretary of State and the Secretary of Defense thereon, to issue to the applicant, as appropriate, a permit for [the] construction, operation, maintenance, or connection." (EO 10485). DOE, however, does not have siting authority for the Project. In this case, the New Hampshire Site Evaluation Committee has siting authority for the Project in the state of New Hampshire. Additionally, the USFS has siting authority for portions of the Project located in the White Mountain National Forest. (For further discussion, see Sections 1.1-1.3 of the final EIS.) While DOE's authority is limited to the approval or denial of the amended Presidential permit application (August 2015) as requested by the Applicant, DOE's policy is to analyze not only the proposed border crossing, but also the alignment of new infrastructure required between the proposed border crossing and connection to the existing U.S. electricity system as a connected action. In keeping with this policy, DOE analyzed the potential environmental impacts of the alignment proposed by the Applicant. In addition, in response to input from Cooperating Agencies, other agencies, and extensive public comment, DOE analyzed a range of other alignments and underground/overhead configurations between the proposed border crossing and connection with the existing U.S. electricity system. The EIS analyzes in detail the No Action Alternative and eleven action alternatives. Additionally, seventeen alternatives were considered but eliminated from detailed analysis. Section 2.4 of the final EIS

0106-2

0106-3

0106-4

0106-5

0106-6

0106-7

has been updated with additional information on alternatives considered but eliminated from detailed analysis.

0106-3

Thank you for your comment. Section 4.1.4.2 in the EIS and Section 3.1.9 of the Public Health and Safety Technical Report discuss impacts related to intentional destructive acts. Impacts to health and safety from intentional destructive acts would be unlikely to be greater than the potential impacts from events involving extreme weather. If such an act were to occur and to succeed in destroying aboveground infrastructure or other components of the project, the main consequence for the public would be the temporary loss of electrical service from the Project (i.e., the loss of the 1,090 or 1,200 MW supplied by the Project) in the ISO-NE region.

0106-4

Thank you for your comment. Northern Pass has applied to the Department of Energy for a Presidential permit for an international border crossing associated with an HVDC transmission line that would run from Quebec, Canada to Deerfield, NH. Executive Order (EO) 10485, as amended by EO 12038, "requires that executive permission be obtained for the construction and maintenance at the borders of the United States of facilities for the exportation or importation of electric energy." DOE is authorized to "receive applications for the construction, operation, maintenance, or connection, at the borders of the United States, of facilities for the transmission of electric energy between the United States and a foreign country[,]" and "[u]pon finding the issuance of the permit to be consistent with the public interest, and, after obtaining the favorable recommendations of the Secretary of State and the Secretary of Defense thereon, to issue to the applicant, as appropriate, a permit for [the] construction, operation, maintenance, or connection." (EO 10485). DOE, however, does not have siting authority for the Project. In this case, the New Hampshire Site Evaluation Committee has siting authority for the Project in the state of New Hampshire. Additionally, the USFS has siting authority for portions of the Project located in the White Mountain National Forest. (For further discussion, see Sections 1.1-1.3 of the final EIS.) While DOE's authority is limited to the approval or denial of the amended Presidential permit application (August 2015) as requested by the Applicant, DOE's policy is to analyze not only the proposed border crossing, but also the alignment of new infrastructure required between the proposed border crossing and connection to the existing U.S. electricity system as a

"connected action" under NEPA. In keeping with this policy, DOE analyzed the potential environmental impacts of the alignment proposed by the Applicant. In addition, in response to input from Cooperating Agencies, other agencies, and extensive public comment, DOE analyzed a range of other alignments and underground and overhead configurations between the proposed border crossing and connection with the existing U.S. electricity system. The EIS analyzes in detail the No Action Alternative and eleven action alternatives. Additionally, seventeen alternatives were considered but eliminated from detailed analysis. Section 2.4 of the final EIS has been updated with additional information on alternatives considered but eliminated from detailed analysis. Among these alternatives, DOE considered two alternate border crossings. One was an alternative that would utilize the existing National Grid Phase I/II route, including its border crossing in Vermont. Based on its review of the National Grid alternative DOE determined that this alternative is not reasonable. Section 2.4.3 of the final EIS has been updated with additional information related to the National Grid alternative. Separately, in response to comments received on the draft EIS, DOE considered a second alternative border crossing in Vermont, specifically identified as a border crossing at Derby Line, VT that would utilize I-91. DOE determined that this alternative is not reasonable. Section 2.4.17 of the final EIS has been added to reflect consideration of this alternative and DOE's determination.

0106-5

Thank you for your comment. The value of scenic sensitivity used in the analysis is the greater of scenic concern or viewer exposure, not the average. Therefore, low viewer exposure in the Northern Section and the WMNF, for example, does not lower the scenic sensitivity of these areas. The rationale for the viewer exposure ratings is explained in Section 2.4.2.5 of the Visual Impact Assessment Technical Report. As discussed, use data are generally not available for scenic or recreation resources in New Hampshire and estimates of transient and tourist populations would be excessively speculative. Therefore, census data were used as an indicator of how many potential viewers exist in an area. The scenic value of the undeveloped nature of the area is captured through the other elements of the landscape assessment, including intrinsic visual quality. The viewer exposure metric was included in this analysis to represent the sensitivity of areas with many viewers but less intrinsic scenic quality.

0106-6

Thank you for your comment. The EIS analyzes in detail the No

Action Alternative and eleven action alternatives. Additionally, seventeen alternatives were considered but eliminated from detailed analysis. Section 2.4 of the final EIS has been updated with additional information on alternatives considered but eliminated from detailed analysis. A power generation alternative was considered but was eliminated from detailed analysis in the EIS because it is not a reasonable alternative. Section 2.4.8 of the final EIS has been updated with additional information about this alternative. Section 1.4 of the final EIS has been updated to include new information on market trends and energy use, including demand-side management and energy efficiency, since the draft EIS was published in 2015.

0106-7

Thank you for your comment. The purpose of, and need for, DOE's action is to determine whether or not to grant the requested Presidential permit for the Project, which is a proposed transmission line crossing the international border. As discussed in Section 1.4 of the EIS, Northern Pass set forth a range of project objectives and benefits in its permit application. DOE and the cooperating agencies reviewed this documentation and determined that the project objectives include addressing three primary needs concerning New England's electricity supply: diverse, low-carbon, non-intermittent electricity. Section 2.4 of the EIS discusses alternatives considered but eliminated from further analysis. DOE determined that other transmission projects, power generation alternatives, and energy conservation do not meet the purpose and need for DOE's action. The EIS analyzes in detail the potential environmental impacts of a No Action Alternative and eleven action alternatives. Under the No Action Alternative, it is assumed that existing energy sources, including distributed generation and alternative energy generation, would continue to supply the ISO-NE region and that energy efficiency measures would continue. Section 3.1.2.5 of the EIS discusses the existing condition of Electricity System Infrastructure which would be anticipated to persist under the No Action Alternative.

Thank you for considering my comments.

Elmer Lupton
75 Newell Road
Whitefield, NH 03598
603-837-3355
617-388-5550 (cell)



54 Portsmouth Street
Concord, NH 03301
Tel. 603.224.9945
Fax 603.228.0423
info@forestsociety.org
www.forestsociety.org

April 4, 2016

Mr. Brian Mills
NEPA Document Manager
Office of Electricity Delivery & Energy Reliability
U.S. Department of Energy
1000 Independence Avenue, SW
Washington, DC 20585

Dear Mr. Mills,

This letter is to share comments and recommendations concerning the Draft Environmental Impact Statement (DEIS) for the Northern Pass Transmission Line Project published by the Department of Energy (DOE) on July 31, 2015 and the subsequent Supplement to the DEIS published in November 2015. We have two observations and two recommendations for the DOE to consider that we believe would improve the Final EIS (FEIS) on this project and also improve the ultimate decision that DOE must make on the Northern Pass Presidential Permit application.

Observation #1: The DEIS Adds Credibility to Alternatives for Burial of the Northern Pass Project

We believe that the alternatives analysis in the DEIS clearly demonstrates that there are credible alternatives to the project Northern Pass first proposed to the US DOE in November 2010, and subsequently amended in July of 2013 and again in August of 2015. In fact, we believe that Northern Pass amended its proposed project last August specifically because of the work done by DOE in the DEIS published in July 2015.

The several alternative routes studied in the DEIS carefully detail the feasibility of burial as an appropriate technology. The DEIS also documents that the preferred alternative Northern Pass proposed in June 2013 is in fact the most damaging environmental alternative studied by the DOE. As the DEIS also explains, the proposed benefits cited by Northern Pass for the 2013 version of its scheme as they relate to property tax revenues to municipalities in New Hampshire and jobs for the New Hampshire economy are only enhanced by alternatives that propose to completely bury the transmission facility.

Observation #2: The DEIS Fails to Meet the Most Critical Standard Established by the National Environmental Policy Act for Alternatives Analysis

The Northern Pass DEIS fails to meet the principle purpose of NEPA because it only studies one credible alternative for crossing the international border. The only regulatory jurisdiction that the Presidential Permit decision has in geographic terms is to approve the actual crossing proposed by NP of the International Border between the United States and Canada. The NP preferred alternative is to cross the International

0109-1

Thank you for your comment. The EIS analyzes several full-burial alternatives in detail (Alternatives 3, 4a, 4b, and 4c). The potential environmental impacts of all twelve alternatives (including on tax revenue and jobs), as well as technical constraints and costs, are discussed throughout the EIS.

0109-2

Thank you for your comment. Northern Pass has applied to the Department of Energy for a Presidential permit for an international border crossing associated with an HVDC transmission line that would run from Quebec, Canada to Deerfield, NH. Executive Order (EO) 10485, as amended by EO 12038, "requires that executive permission be obtained for the construction and maintenance at the borders of the United States of facilities for the exportation or importation of electric energy." DOE is authorized to "receive applications for the construction, operation, maintenance, or connection, at the borders of the United States, of facilities for the transmission of electric energy between the United States and a foreign country[,]" and "[u]pon finding the issuance of the permit to be consistent with the public interest, and, after obtaining the favorable recommendations of the Secretary of State and the Secretary of Defense thereon, to issue to the applicant, as appropriate, a permit for [the] construction, operation, maintenance, or connection." (EO 10485). DOE, however, does not have siting authority for the Project. In this case, the New Hampshire Site Evaluation Committee has siting authority for the Project in the state of New Hampshire. Additionally, the USFS has siting authority for portions of the Project located in the White Mountain National Forest. (For further discussion, see Sections 1.1-1.3 of the final EIS.) While DOE's authority is limited to the approval or denial of the amended Presidential permit application (August 2015) as requested by the Applicant, DOE's policy is to analyze not only the proposed border crossing, but also the alignment of new infrastructure required between the proposed border crossing and connection to the existing U.S. electricity system as a "connected action" under NEPA. In keeping with this policy, DOE analyzed the potential environmental impacts of the alignment proposed by the Applicant. In addition, in response to input from Cooperating Agencies, other agencies, and extensive public comment, DOE analyzed a range of other alignments and underground and overhead configurations between the proposed border crossing and connection with the existing U.S. electricity system. The EIS analyzes in detail the No Action Alternative and eleven action alternatives. Additionally, seventeen alternatives were considered but eliminated from detailed analysis. Section

0109-1

0109-2

2.4 of the final EIS has been updated with additional information on alternatives considered but eliminated from detailed analysis. Among these alternatives, DOE considered two alternate border crossings. One was an alternative that would utilize the existing National Grid Phase I/II route, including its border crossing in Vermont. Based on its review of the National Grid alternative DOE determined that this alternative is not reasonable. Section 2.4.3 of the final EIS has been updated with additional information related to the National Grid alternative. Separately, in response to comments received on the draft EIS, DOE considered a second alternative border crossing in Vermont, specifically identified as a border crossing at Derby Line, VT that would utilize I-91. DOE determined that this alternative is not reasonable. Section 2.4.17 of the final EIS has been added to reflect consideration of this alternative and DOE's determination.

Border at Hall's Stream in Pittsburg, New Hampshire. In fact, this is the only credible alternative that the DEIS studies for the border crossing. It is no small irony that the DEIS studies 11 alternatives for the siting of the NP transmission facility once it crosses the border; the DOE has no regulatory jurisdiction over the actual siting of NP on New Hampshire land. For the decision that DOE must make, whether to grant a Presidential Permit to cross the International Border, the DEIS thoroughly studies only one alternative. And the only credible alternative studied is the one chosen by the applicant.

The National Environmental Policy Act (NEPA), according to its implementing rules adopted by the White House Council on Environmental Quality (CEQ), "is our basic national charter for the protection of the environment." Its purpose is to enable public policy makers to make well-informed decisions. It does this by mandating a process for studying alternatives to a proposed action called the "environmental impact statement," or EIS, to study alternatives which inform decision-makers what the least damaging environmental alternative is for a proposed project. NEPA does not require that the agency actually choose the least damaging alternative, only that the decision-makers have available to them a range of alternatives analyzed by an EIS to inform the decision they make.

The key purpose of an EIS is detailed in the CEQ rules: "It shall provide full and fair discussion of significant environmental impacts and shall inform decision-makers and the public of the reasonable alternatives which would avoid or minimize adverse impacts or enhance the quality of the human environment."

If the DEIS had studied a second crossing at Derby Line, Vermont, and if the DEIS had added an alternative corridor for siting a buried line down Interstate 91 to Hartford or I-91 to I-93 (or down I-91, to I-89, to I-93) and then onto Boston, would DOE decision-makers be better informed for the decision they must make on this Presidential Permit application? We submit that the answer to this question is yes. We submit further that the failure to study more than one crossing of the International Border in this case amounts to a failure on the part of DOE to meet the minimum requirements of NEPA and the CEQ implementing rules for NEPA.

Recommendation #1: Add at Least One Additional Border Crossing for Study in the Final EIS (FEIS)

We recommend that the DOE add at least one additional border crossing to the FEIS. We recommend that a second crossing be added to the FEIS at Derby Line, Vermont, where Canadian Route 55 and US Interstate 91 meet. This would enable the DOE to study a complete burial alternative for NP down I-91 in Vermont to I-93, then south on I-93 to a destination in New Hampshire or Massachusetts to a converter station that would convert the Direct Current to Alternating Current. Not only would this comply with the letter and the spirit of NEPA and the CEQ implementing rules, but also it would more fully inform decision-makers at DOE concerning an alternative that may be less damaging to the environment than the sole alternative proposed by the applicant.

0109-2 0109-2 cont'd
Continued

0109-3

Thank you for your comment. In response to comments received on the draft EIS, DOE considered a second alternative border crossing in Vermont, specifically identified as a border crossing at Derby Line, VT that would utilize I-91. DOE determined that this alternative is not reasonable. Section 2.4.17 of the final EIS has been added to reflect consideration of this alternative and DOE's determination.

0109-3

Recommendation #2: Add at Least One New Alternative Corridor to the FEIS

The FEIS would be considerably enhanced if the addition of a second border crossing led to a thorough study of a completely buried transmission line down the I-91 and I-93 corridors. Alternatively, it may make more sense to look at a corridor down I-91 to I-89 in White River Junction, Vermont, and then down I-89 to I-93 in Concord, New Hampshire. Location of a converter station closer to the Massachusetts border than Franklin, New Hampshire may also make sense. The electricity is intended for consumer markets in Massachusetts. Experts at Eversource and at ISO-New England are certainly capable of informing DOE consultants as to potential locations (if other than Deerfield, NH) for the electricity to enter the New England grid.

The linear distance of a route that would follow I-91 from Derby Line, VT to Exit 40 in New Hampshire (where Route 302 crosses I-93) is more than 10 miles shorter than the NP preferred circuitous route through Northern Coos County New Hampshire. A buried line on the Interstates would require no new rights of way to be cleared and built through Coos County. All of the adverse impacts on natural resources in Coos County would be avoided, as would many of the adverse impacts on natural resources south of Coos County as they presently exist in the applicant's preferred alternative. All of the adverse visual impacts caused by 132 miles of above ground towers in the NP preferred alternative would be avoided. All of the adverse impacts on the tourism economies of the region would be avoided, save for the temporary inconvenience during construction. All adverse impacts on property rights and property values would be avoided.

In conclusion, the purpose of NEPA would be well served if DOE included consideration of a second border crossing at Derby Line, VT in the FEIS. In addition, the purpose of NEPA would also be better served if the DOE included a new alternative to its portfolio of corridor siting alternatives enabled by the study of a second border crossing. We believe DOE should study the alternative that would completely bury NP down interstate highway corridors as suggested above. We strongly encourage DOE to take these actions in the FEIS.

Thank you for the opportunity to comment on the DEIS and for its extensive documentation that complete burial of this project is a credible alternative to the overhead route proposed by the applicant.

Sincerely,



Jane A. Difley, President/Forester

0109-4

0109-4

Thank you for your comment. The EIS analyzes in detail the No Action Alternative and eleven action alternatives. Several alternatives analyzed in detail in the EIS include segments of underground cable within the I-93 corridor, including Alternatives 4a, 4b, 4c, 5a, 6a, and 6b. Laws and regulations governing the installation of utilities in interstate highways are discussed in Section 3.1.6.4 of the EIS. The EIS analyzes several full-burial alternatives in detail (Alternatives 3, 4a, 4b, and 4c). The potential environmental impacts of all twelve alternatives, as well as technical constraints and costs, are discussed throughout the EIS. In response to comments received on the draft EIS, DOE considered an alternative border crossing in Vermont, specifically identified as a border crossing at Derby Line, VT that would utilize I-91. DOE determined that this alternative is not reasonable. Section 2.4.17 of the final EIS has been added to reflect consideration of this alternative and DOE's determination. Alternative project terminus and converter station locations (including Bow, NH; Buxton, ME; Vernon, VT; and Londonderry, NH) were considered but eliminated from detailed analysis in the EIS because they are not reasonable alternatives. Section 2.4.14 of the final EIS has been updated with additional information about this alternative. Further, DOE does not have siting authority for the Project. In this case, the New Hampshire Site Evaluation Committee has siting authority for the Project in the state of New Hampshire. Additionally, the USFS has siting authority for portions of the Project located in the White Mountain National Forest. (For further discussion, see Sections 1.1-1.3 of the EIS.)

Northern Pass EIS Website Comment Receipt

0110-1

Thank you for your comment.

Refers to Comment placed on Aug 12, 2015

ID: 8284**Date Entered:** Aug 12, 2015**Source:** Website**Topics:** Purpose and Need**Name:** Carole Benoit**Organization:****Email:** benoits1@myfairpoint.net**Country:** US

Comment: No means NO. The people of NH, where the PASS intrudes, have a right to say NO to incursion onto our lands. It has never been the American way to make the few suffer so that many can gain financially...oh, except for the Federal Government's treatment of our own indigenous peoples. Sound familiar? LIVE FREE OR DIE
NO PASS

0110-1

Northern Pass EIS Website Comment Receipt

0111-1

Thank you for your comment.

Refers to Comment placed on Aug 12, 2015

ID: 8285**Date Entered:** Aug 12, 2015**Source:** Website**Topics:** Vegetation, Wildlife, Viewshed/Scenery, Quality of Life**Name:** Melanie Hamilton**Organization:****City:** Northwood**State:** NH**Country:** US

Comment: The forest lands of NH are far too valuable to destroy them with the plans for the Northern Pass. While it's an area where not many people live, it should not be sacrificed for a project that would destroy so much, and ruin the vistas that are so dear to everyone. Once those vistas are destroyed, it would take years - if ever - for them to return to their current pristine state.

0111-1



**Chris Thayer, Director of North Country Programs & Outreach
Appalachian Mountain Club
Comments to the US Department of Energy on the Northern Pass DEIS
March 11, 2016 – Whitefield, NH**

My name is Chris Thayer and I am Director of North Country Programs & Outreach for the Appalachian Mountain Club. The AMC is the oldest conservation and recreation organization in the country, with more than 100,000 members and supporters from Maine to Washington, DC, including more than 12,000 here in New Hampshire. In our 140 year history, AMC has helped to protect this region's open spaces, including from poorly sited energy generation and transmission projects like Northern Pass, which is requesting to use high impact, old technologies to maximize profits at the expense of NH's iconic landscape.

As I testified earlier this week in Waterville, AMC commends the Department of Energy in the DEIS for examining alternatives using 21st century technology - full burial HVDC transmission line technologies - and accepting it as a feasible technology in other, recently issued DOE Presidential Permits in VT and NY. The Northern Pass application for a Presidential Permit has only moved the needle slightly towards participation in the 21st century – going from a position that burial is totally impractical, to now avoiding permit denial in the White Mountain National Forest by conceding to bury 60 of the proposed 192 miles of their project. The applicant is now almost one-third of the way into this century.

The DEIS examines alternative routes and burial options only in New Hampshire, yet DOE acknowledges its role is not to select the actual project route. And DOE has failed to look at alternative international border crossings, focusing only on the single one proposed by the Applicant. Yet the international crossing is where DOE does have jurisdiction when it issues a Presidential Permit. A much more direct and shorter route with far less environmental impact or cost for this energy would be to cross the Canadian border into Vermont and follow a buried route along I-91 south to the intended markets in MA, CT and RI. Further making this a logical and reasonable alternative is that I-91 goes directly by the Vermont Yankee nuclear power plant in Vernon, VT, which is now undergoing decommissioning and its grid switchyard is without power and about to go unused. Even the Governor of Vermont stated publicly in 2014 that Vermont is open to such a concept. The Applicant claims that Northern Pass is needed to help fill the gap caused by the Vermont nuclear power plant going off line, yet the DEIS does not even explore physically going there. A variation of this concept is burial along I-91 to I-89 to I-93 that would end up in Londonderry, NH, the intended terminus for the currently proposed project. Both of these Alternatives using different international border crossings should be studied and included in the FEIS.

Main Headquarters: 5 Joy Street • Boston, MA 02108-1490 • 617-523-0636 • outdoors.org

Regional Headquarters: Pinkham Notch Visitor Center • 361 Route 16 • Gorham, NH 03581-0298 • 603 466-2721

Additional Offices: Bretton Woods, NH • Greenville, ME • Portland, ME • New York, NY • Bethlehem, PA

0112-1

Thank you for your comment. Northern Pass has applied to the Department of Energy for a Presidential permit for an international border crossing associated with an HVDC transmission line that would run from Quebec, Canada to Deerfield, NH. Executive Order (EO) 10485, as amended by EO 12038, "requires that executive permission be obtained for the construction and maintenance at the borders of the United States of facilities for the exportation or importation of electric energy." DOE is authorized to "receive applications for the construction, operation, maintenance, or connection, at the borders of the United States, of facilities for the transmission of electric energy between the United States and a foreign country[,]" and "[u]pon finding the issuance of the permit to be consistent with the public interest, and, after obtaining the favorable recommendations of the Secretary of State and the Secretary of Defense thereon, to issue to the applicant, as appropriate, a permit for [the] construction, operation, maintenance, or connection." (EO 10485). DOE, however, does not have siting authority for the Project. In this case, the New Hampshire Site Evaluation Committee has siting authority for the Project in the state of New Hampshire. Additionally, the USFS has siting authority for portions of the Project located in the White Mountain National Forest. (For further discussion, see Sections 1.1-1.3 of the final EIS.) While DOE's authority is limited to the approval or denial of the amended Presidential permit application (August 2015) as requested by the Applicant, DOE's policy is to analyze not only the proposed border crossing, but also the alignment of new infrastructure required between the proposed border crossing and connection to the existing U.S. electricity system as a "connected action" under NEPA. In keeping with this policy, DOE analyzed the potential environmental impacts of the alignment proposed by the Applicant. In addition, in response to input from Cooperating Agencies, other agencies, and extensive public comment, DOE analyzed a range of other alignments and underground and overhead configurations between the proposed border crossing and connection with the existing U.S. electricity system. The EIS analyzes in detail the No Action Alternative and eleven action alternatives. Additionally, seventeen alternatives were considered but eliminated from detailed analysis. Section 2.4 of the final EIS has been updated with additional information on alternatives considered but eliminated from detailed analysis. Among these alternatives, DOE considered two alternate border crossings. One was an alternative that would utilize the existing National Grid Phase I/II route, including its border crossing in Vermont. Based on its review of the National Grid alternative DOE determined that this alternative is not reasonable. Section

0112-1

2.4.3 of the final EIS has been updated with additional information related to the National Grid alternative. Separately, in response to comments received on the draft EIS, DOE considered a second alternative border crossing in Vermont, specifically identified as a border crossing at Derby Line, VT that would utilize I-91. DOE determined that this alternative is not reasonable. Section 2.4.17 of the final EIS has been added to reflect consideration of this alternative and DOE's determination.



The DEIS assumes that the Northern Pass Project would result in a net increase in imports of electricity into the ISO-New England region of approximately 6,600 Gigawatt hours of electricity, assuming 76 percent of maximum capacity through the year and that this would result in approximately a 9% decrease in natural gas, a 5% decrease in coal, and a 43% decrease in oil demand for electric generation in the ISO-NE region. It also translates these into assumed greenhouse gas emission reductions. Since there are now many other competing projects in the region, including more than 20 that have bid into the New England Clean Power RFP solicited by MA, CT and RI that would also reduce greenhouse emissions, the FEIS needs to be updated and acknowledge that those reductions would likely occur with or without the permitting of Northern Pass. As framed in the DEIS, it assumes these reductions in fossil fuel electric generation and resultant greenhouse gas reductions would not occur without the permitting of Northern Pass.

The FEIS also needs to examine the environmental impacts across the international border resulting from Hydro-Quebec's reservoirs and river diversions that are necessary to generate the power for this project. It is one sided to look across the international border and determine that this is a greenhouse gas reducing energy source, and then fail to also look across the border at the associated negative impacts of this energy source. This includes but is not limited to the size of the area that Hydro-Quebec must flood in order to generate 1090 MW – an area almost 4 times larger than Lake Winnepesaukee. A substantial amount of methane – one of the most potent greenhouse gases and 80 times more potent than carbon dioxide – is emitted due to the decomposition of the flooded organic rich forest soils. These actual reservoir methane emissions need to be subtracted from the estimated overall reduction in greenhouse gases for this Project in the FEIS. Consideration of greenhouse gas emissions based on the source of the fuel across the international boundary occurred when the Presidential Permit was recently denied for the Keystone Pipeline. A cross-border examination of impacts is not novel, and is required by NEPA as part of a cumulative impact analysis in an environmental impact study.

The DEIS is unclear about what criteria the US DOE will use to determine if it will issue a Presidential Permit. This lack of clarity is disconcerting to say the least. The FEIS needs to be clear about what criteria was used to make your final decision. Providing further insight in advance of the FEIS would also help encourage targeted and appropriate comments from the public going forward.

Finally, Mr. Mills has indicated at previous hearings that the DOE will not be making the final decision about whether the Project as proposed will be approved, and that the proposal may evolve as the Project moves through the State's certification process. Does this mean that the DOE will not be issuing the FEIS, or Record of Decision, before the Site Evaluation Committee has made its determination on whether or not to certify NP?

Thank you for your time and consideration.

Main Headquarters: 5 Joy Street • Boston, MA 02108-1490 • 617-523-0636 • outdoors.org
 Regional Headquarters: Pinkham Notch Visitor Center • 361 Route 16 • Gorham, NH 03581-0298 • 603 466-2721
 Additional Offices: Bretton Woods, NH • Greenville, ME • Portland, ME • New York, NY • Bethlehem, PA

0112-2

Thank you for your comment. Section 4.1.10 of the EIS includes an analysis of greenhouse gas emissions potentially resulting from the Project. The cumulative analysis of air quality in Chapter 5 of the EIS considers other regional energy projects that have emerged as part of the competitive clean energy RFPs in ISO-NE. Under the No Action Alternative, it is assumed that existing energy sources would continue to supply the ISO-NE region.

0112-3

Thank you for your comment. Potential impacts in Canada from the construction and operation of electricity infrastructure, including hydropower generation and transmission in Canada, are beyond the scope of this NEPA analysis. NEPA does not require an analysis of potential environmental impacts that occur within another sovereign nation that result from actions approved by that sovereign nation. Additionally, the construction and operation of Hydro-Quebec power generation projects and electricity transmission line projects in the bulk Hydro-Quebec system will occur regardless of and independent to whether DOE issues a Presidential permit for the proposed Northern Pass Project international border crossing. For these reasons, potential environmental impacts in Canada are not addressed in this EIS. Section 1.5.4.1 of the Final EIS has been updated in response to this comment. Chapter 5 of the EIS discusses potential cumulative impacts, including greenhouse gas emissions, to all resource areas under all alternatives in the United States.

0112-4

Thank you for your comment. As described in Section 1.1.1 of the EIS, Executive Order (E.O.) 10485, as amended by E.O. 12038, authorizes the Secretary of Energy "Upon finding the issuance of the permit to be consistent with the public interest, and, after obtaining the favorable recommendations of the Secretary of State and the Secretary of Defense thereon, to issue to the applicant, as appropriate, a permit for [the] construction, operation, maintenance, or connection" of "facilities for the transmission of electric energy between the United States and a foreign country." Thus, in deciding whether to issue a Presidential permit, DOE must determine whether doing so would be "consistent with the public interest." In addition, the Departments of State and Defense must both make "favorable recommendations" on the issuance of the permit. In deciding whether the issuance of a Presidential permit would be consistent with the public interest, DOE assesses the

environmental impacts of the proposed project and reasonable alternatives, the impact of the proposed action on electric reliability, and any other factors that DOE may also consider relevant to the public interest. DOE will announce its decision whether to issue a permit – as well as the factors DOE considered in making its decision – in the Record of Decision (ROD). DOE would issue a ROD no sooner than 30 days after the EPA publishes the Notice of Availability for this final EIS in the Federal Register.

DRAFT EIS HEARING WATERVILLE VALLEY 3/9/16

AT THE NP PUBLIC SCOPING MEETINGS IN MARCH, 2001 AND SEPTEMBER, 2013, YOU SAID THAT DOE'S PRIMARY ROLE WAS TO DETERMINE ELIGIBILITY FOR A PRESIDENTIAL PERMIT, WHICH IF APPROVED WOULD ALLOW THE PROJECT TO CROSS THE INTERNATIONAL BORDER. YOU ALSO SAID THE RESPONSIBILITY FOR SITING THE PROJECT WITHIN NH WOULD REST WITH THE NH SEC.

IN THE DEIS AND SUPPLEMENT YOU HAVE PRESENTED MANY ALTERNATIVES TO SITING THE PROJECT. MOST OF THESE ALTERNATIVES INCLUDE A BURIAL PORTION. WE THANK YOU FOR ALL THE BURIAL ALTERNATIVES BECAUSE WE BELIEVE THEY HAD A MAJOR ^{IMPACT} ON NP DECIDING TO BURY AN ADDITIONAL 52 MILES FROM BETHLEHEM TO BRIDGEWATER.

IT IS INTERESTING TO NOTE IN THE DEIS, THAT YOU DID NOT CONSIDER ANY ALTERNATIVE BORDER CROSSINGS. ALL THE ALTERNATIVE ROUTES START FROM THE SAME POINT IN PITTSBURG. IT WOULD SEEM IF YOUR PRIMARY ROLE WAS TO DETERMINE IF NP COULD CROSS THE BORDER, THAT YOU SHOULD HAVE LOOKED AT SOME ALTERNATIVE CROSSING POINTS. FOR EXAMPLE, A MORE DIRECT ROUTE TO SOUTHERN NH MIGHT BE WEST OF PITTSBURG, CLOSER TO ROUTE 91. * * * →

IN CLOSING, I WOULD LIKE TO SAY THE BEST SITING ALTERNATIVE FOR THE NPT PROJECT IS COMPLETE BURIAL SIMILAR TO THE CHAMPLAIN-HUDSON (NH), THE NORTHEAST ENERGY LINK (NE), THE NEW ENGLAND CLEAN POWER LINK ^(VT) AND THE DEIS ALTERNATIVE 4A.

- BURY IT ALL THE WAY -

0113-1

Thank you for your comment. Northern Pass has applied to the Department of Energy for a Presidential permit for an international border crossing associated with an HVDC transmission line that would run from Quebec, Canada to Deerfield, NH. Executive Order (EO) 10485, as amended by EO 12038, "requires that executive permission be obtained for the construction and maintenance at the borders of the United States of facilities for the exportation or importation of electric energy." DOE is authorized to "receive applications for the construction, operation, maintenance, or connection, at the borders of the United States, of facilities for the transmission of electric energy between the United States and a foreign country[.]" and "[u]pon finding the issuance of the permit to be consistent with the public interest, and, after obtaining the favorable recommendations of the Secretary of State and the Secretary of Defense thereon, to issue to the applicant, as appropriate, a permit for [the] construction, operation, maintenance, or connection." (EO 10485). DOE, however, does not have siting authority for the Project. In this case, the New Hampshire Site Evaluation Committee has siting authority for the Project in the state of New Hampshire. Additionally, the USFS has siting authority for portions of the Project located in the White Mountain National Forest. (For further discussion, see Sections 1.1-1.3 of the final EIS.) While DOE's authority is limited to the approval or denial of the amended Presidential permit application (August 2015) as requested by the Applicant, DOE's policy is to analyze not only the proposed border crossing, but also the alignment of new infrastructure required between the proposed border crossing and connection to the existing U.S. electricity system as a "connected action" under NEPA. In keeping with this policy, DOE analyzed the potential environmental impacts of the alignment proposed by the Applicant. In addition, in response to input from Cooperating Agencies, other agencies, and extensive public comment, DOE analyzed a range of other alignments and underground and overhead configurations between the proposed border crossing and connection with the existing U.S. electricity system. The EIS analyzes in detail the No Action Alternative and eleven action alternatives. Additionally, seventeen alternatives were considered but eliminated from detailed analysis. Section 2.4 of the final EIS has been updated with additional information on alternatives considered but eliminated from detailed analysis. Among these alternatives, DOE considered two alternate border crossings. One was an alternative that would utilize the existing National Grid Phase I/II route, including its border crossing in Vermont. Based on its review of the National Grid alternative DOE determined that this alternative is not reasonable. Section

ROBERT TUNESON, HOLDERNESS

2.4.3 of the final EIS has been updated with additional information related to the National Grid alternative. Separately, in response to comments received on the draft EIS, DOE considered a second alternative border crossing in Vermont, specifically identified as a border crossing at Derby Line, VT that would utilize I-91. DOE determined that this alternative is not reasonable. Section 2.4.17 of the final EIS has been added to reflect consideration of this alternative and DOE's determination.

A MORE DIRECT ROUTE WOULD BE A BORDER
CROSSING AT DERBY LINE CONNECTING TO
RTE 91 AND THEN TO RTE 93

0113-1
Continued

0114-1

Thank you for your comment. Northern Pass has applied to the Department of Energy for a Presidential permit for an international border crossing associated with an HVDC transmission line that would run from Quebec, Canada to Deerfield, NH. Executive Order (EO) 10485, as amended by EO 12038, "requires that executive permission be obtained for the construction and maintenance at the borders of the United States of facilities for the exportation or importation of electric energy." DOE is authorized to "receive applications for the construction, operation, maintenance, or connection, at the borders of the United States, of facilities for the transmission of electric energy between the United States and a foreign country[,]" and "[u]pon finding the issuance of the permit to be consistent with the public interest, and, after obtaining the favorable recommendations of the Secretary of State and the Secretary of Defense thereon, to issue to the applicant, as appropriate, a permit for [the] construction, operation, maintenance, or connection." (EO 10485). DOE, however, does not have siting authority for the Project. In this case, the New Hampshire Site Evaluation Committee has siting authority for the Project in the state of New Hampshire. Additionally, the USFS has siting authority for portions of the Project located in the White Mountain National Forest. (For further discussion, see Sections 1.1-1.3 of the final EIS.) While DOE's authority is limited to the approval or denial of the amended Presidential permit application (August 2015) as requested by the Applicant, DOE's policy is to analyze not only the proposed border crossing, but also the alignment of new infrastructure required between the proposed border crossing and connection to the existing U.S. electricity system as a "connected action" under NEPA. In keeping with this policy, DOE analyzed the potential environmental impacts of the alignment proposed by the Applicant. In addition, in response to input from Cooperating Agencies, other agencies, and extensive public comment, DOE analyzed a range of other alignments and underground and overhead configurations between the proposed border crossing and connection with the existing U.S. electricity system. The EIS analyzes in detail the No Action Alternative and eleven action alternatives. Additionally, seventeen alternatives were considered but eliminated from detailed analysis. Section 2.4 of the final EIS has been updated with additional information on alternatives considered but eliminated from detailed analysis. Among these alternatives, DOE considered two alternate border crossings. One was an alternative that would utilize the existing National Grid Phase I/II route, including its border crossing in Vermont. Based on its review of the National Grid alternative DOE determined that this alternative is not reasonable. Section

Thank you. Kevin Kimball. I'm Director of Research for the Appalachian Mountain Club. Tonight, I will make my comments focused to the DEIS. First on the alternative analysis, at Section 1.1, the Draft EIS states it was prepared to meet among several key objectives describe and evaluate the range of reasonable alternatives to proposed action in the US including the no action alternative number 3. The DEIS examined alternative routes and burial operations in New Hampshire only. However, DOE acknowledges that its role is not to select the final route in New Hampshire. Rather, DOE's jurisdiction for Presidential permit is the international border crossing. MR. HONIGBERG: I'm sorry, Mr. Kimball. Just a second. Whoever is speaking over there, you know, we can hear you. So please stop. He deserves your respect and your full and undivided attention. MR. KIMBALL: Thank you. To date, DOE has refused to look at any alternative international crossing site other than the single one proposed by the Applicant. DOE should consider alternative international boarding crossing locations. A much more direct and shorter route with far less environmental impacts or costs for this energy would be to cross in Vermont and follow the buried route along I-91 south to the intended markets Mass., Connecticut and Rhode Island. This logical alternative route goes directly to the Vermont Yankee nuclear power plant in Vernon, Vermont, which is now being decommissioned, and its bridge switch yard is now without power. The Applicant claims the need for Northern Pass is to fill the gap caused by the Vermont nuclear power plant going off line. The Governor of Vermont publicly stated back in 2014 that Vermont stands ready to consider this Vermont alternative. Variation on this approach is burial along I-89 to I-91 to I-93 as Mr. Abbott just spoke to. Both of these alternatives should be studied and included in the Final EIS. Second, on the use of New Hampshire's interstates. The Applicant's filing for both the New Hampshire SEC and the US DOE, the interstates in New Hampshire cannot effectively be used for power line right-of-ways, has never been publicly verified. The Applicant has never asked the three parties that signed the MOU, the Franconia Notch I-93 on those possibilities. Its preference has been to cram more than 1100 more cheap transmission towers which will be 2 to 3 times tree height in Applicant's right-of-way to increase short-term profits at the long-term expense of the New Hampshire landscape. Neither DOE nor the SEC should accept without full documentation that can be publicly reviewed that burial and interstate right-of-ways for electric power transmission is legally or fiscally impossible. My final comment goes to the visual impact analysis in the DEIS. The DEIS correctly ranks the North Country study region as having high to very high scenic intrinsic visual quality in contrast to convoluted visual assessments submitted to SEC by the Applicant. The DEIS appropriately acknowledges that overhead lines above and below ground conversion stations would impact the visual landscape whereas complete burial would not. However, one component of the Draft EIS visual component is problematic. When it gets around to trying to understand the visitor's perception and expectations, it can't find readily available data so it resorts to the US National Census Data which is based on the population per square mile. It's obvious that if you have a national landscape, there will be few people there, whereas if you have urban landscape, there will be a lot of people, and that greatly skews that model when it is actually implemented. The Final EIS needs to go back and actually ask, what is the visitor's expectation of this area. That includes not only the residents but the second homeowners and the tourists that come here. I think as you'll see from many of the people sitting behind me here today, their expectations are a little bit different than just simply using census data which really skews the results and this need to be corrected in the Final EIS. Thank you very much.

0114-1

0114-2

0114-3

2.4.3 of the final EIS has been updated with additional information related to the National Grid alternative. Separately, in response to comments received on the draft EIS, DOE considered a second alternative border crossing in Vermont, specifically identified as a border crossing at Derby Line, VT that would utilize I-91. DOE determined that this alternative is not reasonable. Section 2.4.17 of the final EIS has been added to reflect consideration of this alternative and DOE's determination.

0114-2

Thank you for your comment. Because an EIS is intended to inform decisionmakers and the public about potential impacts of a major federal action, DOE analyzes in detail several alternatives that involve underground cable in the I-93 corridor, including Alternatives 4a, 4b, 4c, 5a, 6a, and 6b. The regulatory framework governing utilities in roadway corridors is discussed in the Land Use Technical Report and the EIS, see Section 3.1.6.4. In particular, the Franconia Notch State Park and I-93 Memorandum of Agreement is discussed in Section 3.3.6.4 of the EIS. DOE has considered this comment and no change to the EIS was made.

0114-3

Thank you for your comment. The value of scenic sensitivity used in the analysis is the greater of scenic concern or viewer exposure, not the average. Therefore, low viewer exposure in the Northern Section and the WMNF, for example, does not lower the scenic sensitivity of these areas. The rationale for the viewer exposure ratings is explained in Section 2.4.2.5 of the Visual Impact Assessment Technical Report. As discussed, use data are generally not available for scenic or recreation resources in New Hampshire and estimates of transient and tourist populations would be excessively speculative. Therefore, census data were used as an indicator of how many potential viewers exist in an area. The scenic value of the undeveloped nature of the area is captured through the other elements of the landscape assessment, including intrinsic visual quality. The viewer exposure metric was included in this analysis to represent the sensitivity of areas with many viewers but less intrinsic scenic quality.

Northern Pass SEC hearing on March, 7, 2016

We the Headwaters Subcommittee of the Connecticut River are charged with the preservation and protection of the resources of the Connecticut River Valley. Slicing out a 32 mile wide scar starting at Hall Stream is a far cry from protecting and preserving our natural resources.

31 towns have voted NO to Northern Pass at their town meetings. Shouldn't this be enough?

If indeed Northern Pass was serious about minimal impacts and utilizing existing corridors, they would have come south on U.S. Rte. 3 cutting their mileage in half, and minimizing the impacts both ecological and aesthetic! This would eliminate the horrific scarring of the countryside, alleviate many concerns in terms of the environment and aesthetics, and bolster the State of New Hampshire's economy.

As you are traveling north on U.S. Rte. 3 you will climb a large hill prior to the Town of Lancaster. At the top is a scenic pullover, with a spectacular view of the gateway to the Headwaters region we are in. This spectacular view will be despoiled by over 80 towers set in a broad swath of cleared land across the countryside. This image is completely at odds with the picture we set for our tourism industry.

As our Chairman stated "The Headwaters Committee has consistently opposed the Northern Pass Project. Some reasons that have been cited at many of our meetings are the effect on scenic beauty, loss of working forestland, impacts to wetlands, reduction in property values, negative effect on tourism, and the lack of any long term benefits to this region.

Member Tom Caron wrote" Other regions of N.H. do not rely so heavily upon their natural resources and tourism industry than do the Great North Woods and White Mountain regions of the state. While other regions to the south have large industrial and manufacturing sectors of their economies, the Great North Woods and White Mt. regions do not. All of our eggs are unfortunately in one basket---tourism.

The fact that the transmission line as proposed is buried along its journey through the White Mts. Region for 52 miles and similarly buried for only an 8 mile segment along Rte 145 in Clarksville (in the Great North Woods region) is curious. If it can be buried going through ecologically and tourism sensitive White Mts. National Forest, why not be buried in just as beautiful and sensitive a part of NH as the Great North Woods?" A better option is to bury the Northern Pass project in its entirety.

In the wetlands application under Env-Wt 302.04 #4. Northern Pass states "Work was not performed outside the proposed ROW. The impacts ARE NOT KNOWN but are stated as "the proposed transmission line will have little to no permanent direct impacts." This is a tremendous leap in assumptions! #17. Relocation of TS 1 and TS 5 to areas outside of wetlands would be much preferred. Burying the line would eliminate these structures altogether. Section

0115-1

Thank you for your comment. Several alternatives analyzed in the EIS include underground cable in Route 3, including Alternatives 4a, 4b, 4c, 5c, and 7. Overhead alternatives in the US Route 3 corridor were not considered in this analysis. Alternatives 3, 4a, 4b, 4c, 5a, 5b, 5c, 6a, 6b, and 7 focus on using existing corridors to minimize impacts.

0115-1

0115-2

Thank you for your comment. The commenter's concerns are related to the project proponent's application to the state Site Evaluation Committee (SEC). The SEC process is separate from, and beyond scope of, this NEPA EIS analysis.

0115-2

6 Table 3. Summary of wetlands, rivers, streams, and vernal pool impacts. Half the impacted wetlands are in the "North Country". This is not a good example of avoiding/ minimizing wetland impacts.

Table 4. Communities

Northern White Cedar-Balsam Fir Swamp

Purchasing wetlands and then proposing to develop the property is not responsible, environmentally sensitive, aesthetically pleasing, and most importantly does not take into consideration minimizing wetland impacts.

6.1.19.1 Route Selection

Northern Pass states "identifying the shortest route feasible."

The shortest route is traveling south in the U.S. Rte. 3 corridor. Northern Pass has played "connect the lots" trying to develop an alternate route that they would own.

This region is our home for us and future generations to come. We refuse to have it maligned due to so called progress, corporate greed, or the supposed needs of southern neighbors. New Hampshire is and has always been an exporter of electrical power. There is no demonstrated need for our state to have this transmission line.

We the Headwaters Committee of the Connecticut River Joint Commission stand opposed to this Northern Pass Project as presented. Perhaps if a different approach had been used rather than trying to shove this project down peoples' throats there may have been a different outcome.

Thank you



Glenn Normandeau
Executive Director

New Hampshire Fish and Game Department

11 Hazen Drive, Concord, NH 03301-6500
Headquarters: (603) 271-3421
Web site: www.WildNH.com

TDD Access: Relay NH 1-800-735-2964
FAX (603) 271-1438
E-mail: info@wildlife.nh.gov

April 4, 2016

Mr. Brian Mills
Office of Electricity Delivery and Energy Reliability (OE-20)
US Department of Energy
1000 Independence Avenue, SW
Washington, D.C. 20585

**RE: Comments on Draft Environmental Impact Statement (EIS) and Supplement to the Draft EIS for the Proposed Northern Pass Transmission Line Project
DOE/EIS - 0463**

Dear Mr. Mills:

The NH Fish and Game Department is the State agency responsible for the protection, conservation and management of the State's fish, wildlife and marine resources and their habitats. As such, the Department is responsible to provide direction and guidance to any public project whose actions may affect these resources. The Department would like to take this opportunity to comment on the Draft and Supplemental Environmental Impact Statement (EIS) for the proposed Northern Pass Transmission Line project in New Hampshire.

Although the Department understands that the Department of Energy (DOE) does not have siting or project alignment authority for projects proposed in applications for Presidential permits (Volume 1: Impact Analyses, p. 1-1), the following information should be considered prior to the issuance of the final EIS and subsequent, Record of Decision (ROD), regarding whether the proposed action will have an unreasonable adverse effect on the natural environment. Also, the Department appreciates that the DOE will be participating in the State's Site Evaluation Committee (SEC) process throughout this project's siting and alignment review.

Comments are as follows:

Alternatives:

The Department originally suggested in a letter dated April 11, 2011, the following: "What are the alternative routes for minimizing the impacts to the natural environment in the State of NH by connecting through other States; for example, using existing Vermont transmission lines rather than building new lines in the North Country?" This Alternative was not discussed or dismissed in the EIS nor was it included in Appendix B. The analysis of this alternative should have been addressed in order to evaluate the potential differences in impacts expected to occur in the Northern Section by the construction of approximately 32 miles of new right-of-way (ROW) as proposed.

0116-1

Thank you for your comment. Northern Pass has applied to the Department of Energy for a Presidential permit for an international border crossing associated with an HVDC transmission line that would run from Quebec, Canada to Deerfield, NH. Executive Order (EO) 10485, as amended by EO 12038, "requires that executive permission be obtained for the construction and maintenance at the borders of the United States of facilities for the exportation or importation of electric energy." DOE is authorized to "receive applications for the construction, operation, maintenance, or connection, at the borders of the United States, of facilities for the transmission of electric energy between the United States and a foreign country[.]" and "[u]pon finding the issuance of the permit to be consistent with the public interest, and, after obtaining the favorable recommendations of the Secretary of State and the Secretary of Defense thereon, to issue to the applicant, as appropriate, a permit for [the] construction, operation, maintenance, or connection." (EO 10485). DOE, however, does not have siting authority for the Project. In this case, the New Hampshire Site Evaluation Committee has siting authority for the Project in the state of New Hampshire. Additionally, the USFS has siting authority for portions of the Project located in the White Mountain National Forest. (For further discussion, see Sections 1.1-1.3 of the final EIS.) While DOE's authority is limited to the approval or denial of the amended Presidential permit application (August 2015) as requested by the Applicant, DOE's policy is to analyze not only the proposed border crossing, but also the alignment of new infrastructure required between the proposed border crossing and connection to the existing U.S. electricity system as a "connected action" under NEPA. In keeping with this policy, DOE analyzed the potential environmental impacts of the alignment proposed by the Applicant. In addition, in response to input from Cooperating Agencies, other agencies, and extensive public comment, DOE analyzed a range of other alignments and underground and overhead configurations between the proposed border crossing and connection with the existing U.S. electricity system. The EIS analyzes in detail the No Action Alternative and eleven action alternatives. Additionally, seventeen alternatives were considered but eliminated from detailed analysis. Section 2.4 of the final EIS has been updated with additional information on alternatives considered but eliminated from detailed analysis. Among these alternatives, DOE considered two alternate border crossings. One was an alternative that would utilize the existing National Grid Phase I/II route, including its border crossing in Vermont. Based on its review of the National Grid alternative DOE determined that this alternative is not reasonable. Section

0116-1

2.4.3 of the final EIS has been updated with additional information related to the National Grid alternative. Separately, in response to comments received on the draft EIS, DOE considered a second alternative border crossing in Vermont, specifically identified as a border crossing at Derby Line, VT that would utilize I-91. DOE determined that this alternative is not reasonable. Section 2.4.17 of the final EIS has been added to reflect consideration of this alternative and DOE's determination.

Northern Section:

This ROW will pass through two blocks of remote forest land in Coos County that are currently undeveloped and are only bisected by one highway, Route 26. The mosaic of forest conditions found within these blocks provides habitat favorable to a full complement of northern wildlife species and this landscape is important particularly to wide ranging carnivores which require these larger habitat blocks. This would include fisher, bobcat, black bear, Canada lynx and American marten. The Region 1 biologist detected tracks of fisher, marten and bobcat during field reconnaissance along the proposed alignment in the winter of 2016.

Fresh Canada lynx tracks located in Millsfield, a short distance from the proposed ROW were confirmed by Department personnel in March of 2016. These blocks are part of a larger matrix of forest lands in northern New Hampshire and are key to helping link conserved lands in the north and west with forest blocks further south including the White Mountain National Forest.

Within these large blocks Northern Pass would be constructed through some of the highest value marten habitat in Coos County as identified by Kelly (2005). Further the ROW would bisect a region that has a high probability of lynx occurrence (Sirén 2014) with recent detections. The presence of both of these species in the proposed ROW indicates that there is suitable habitat for a diverse assemblage of species that require either early or late successional habitat yet are sensitive to fragmentation and habitat loss (Hepinstall and Harrison 2002, Beazley and Cardinal 2004). Further analysis of potential impacts to Canada Lynx and American Marten should be updated and reviewed.

Cumulative Impacts:

As discussed in the EIS, the proposed alignment for Northern Pass in the Northern Section represents a significant fragmenting feature on the landscape; however, the existing Granite Reliable Power (GRP) wind park located on Mt Kelsey, Fish Brook Ridge, Owl Head Mountain, and Dixville Peak was not included in the analysis. The Balsam's redevelopment project should also be included within this section since it has been approved for development since the initiation of the Northern Pass project.

The EIS should examine more closely the link between NP and how it relates to a greater potential energy development proposal for the region. If NP is participating in the upgrade of the Coos Loop the ecological review for this project should be expanded to evaluate the environmental impacts of the further build out of this energy infrastructure and the resulting potential industrial wind complex. Northern Pass coupled with this additional development on the undeveloped remote mountain ridgelines located north of Rt 26 would result in further fragmentation and degradation of habitat found within this large block of remote forest land. Currently there are existing wind measuring devices (MET towers) operating on a number of mountain ridgelines in this vicinity including Rice Mountain, Blue Mountain, Crystal Mountain, and a ridgeline extending south from Mount Tucker. \

It is important to evaluate what this potential future development will have on wildlife habitats, particularly the high elevation spruce and fir and mixed wood forest stands found on the mountain ridgelines. The Department feels that impacts to wildlife and fisheries should be viewed in this broader context in the EIS and should be further evaluated.

Fish Brook Ridge Cumulative Impacts:

Where the proposed alignment for NP is located along the east slope of Fish Brook Ridge the Department considers this as contributing to cumulative impacts to a landscape that has already experienced loss of habitat due to the GRP wind park. The Northern Pass ROW will result in a net loss of forest habitat and create further risks to wildlife utilizing the Fish Brook ridgeline.

- 0116-2 0116-2
Thank you for your comment. Impacts to forested land in the Northern Section are described in the EIS in Section 4.2.12 (Vegetation) and in the Vegetation Resources Technical Report in Section 3.1.2.1 (Impacts from Construction, Northern Section). Additionally, general impacts to wildlife from temporary or permanent changes to habitat caused by the project are discussed throughout Section 4.1.11.1 (Impacts from Construction, Terrestrial Species), of the EIS and Section 3.1.1.2.1 (Impacts from Construction, Terrestrial Species) of the Wildlife Technical Report.
- 0116-3 0116-3
Thank you for your comment. The discussion of lynx presence within the project area is consistent with data utilized by the USFWS and NHFG.
- 0116-4 0116-4
Thank you for your comment. Chapter 4 of the final EIS and Section 3 (Direct and Indirect Environmental Consequences) of the Wildlife Technical Report summarizes impacts to wildlife including fragmentation and potential habitat loss due to the long-term operation of the project. Additionally, potential impacts to the Canada lynx and the American marten are discussed in Section 3 (Direct and Indirect Environmental Consequences) of the Wildlife Technical Report. As stated in Section 1.7.3.1 of the EIS, in addition to the DOE and USFS review of the project under NEPA, DOE and USFS acknowledge the Applicant must receive approval for the project from the State of New Hampshire's Site Evaluation Committee and obtain all federal and state regulatory authorizations/permits pertaining to wildlife prior to construction.
- 0116-5 0116-5
Thank you for your comment. The Granite Reliable Wind Park is considered in the cumulative impact analysis in Section 5.1 of the EIS as one of the past, present, and reasonably foreseeable projects (see also Appendix D of the EIS). Potential future development of the Balsams Resort could generate employment (both short-term and long-term) and tourism within the region. However, it is not anticipated that the Balsams project would add cumulatively to the specific impacts evaluated for the proposed Northern Pass Project. Economic consequences of the potential development of the Balsams Resort were not specifically identified as a significant input or considered within the economic model.
- 0116-6 0116-6
Thank you for your comment. The Granite Reliable Wind Park is considered in the cumulative impact analysis in Section 5.1 of the EIS as one of the past, present, and reasonably foreseeable projects (see also Appendix D of the EIS). Potential future development of the Balsams Resort could generate employment (both short-term and long-term) and tourism within the region. However, it is not anticipated that the Balsams project would add cumulatively to the specific impacts evaluated for the proposed Northern Pass Project. Economic consequences of the potential development of the Balsams Resort were not specifically identified as a significant input or considered within the economic model.
- 0116-7 0116-7
Thank you for your comment. The Granite Reliable Wind Park is considered in the cumulative impact analysis in Section 5.1 of the EIS as one of the past, present, and reasonably foreseeable projects (see also Appendix D of the EIS). Potential future development of the Balsams Resort could generate employment (both short-term and long-term) and tourism within the region. However, it is not anticipated that the Balsams project would add cumulatively to the specific impacts evaluated for the proposed Northern Pass Project. Economic consequences of the potential development of the Balsams Resort were not specifically identified as a significant input or considered within the economic model.
- 0116-8 0116-8
Thank you for your comment. The Granite Reliable Wind Park is considered in the cumulative impact analysis in Section 5.1 of the EIS as one of the past, present, and reasonably foreseeable projects (see also Appendix D of the EIS). Potential future development of the Balsams Resort could generate employment (both short-term and long-term) and tourism within the region. However, it is not anticipated that the Balsams project would add cumulatively to the specific impacts evaluated for the proposed Northern Pass Project. Economic consequences of the potential development of the Balsams Resort were not specifically identified as a significant input or considered within the economic model.

0116-6

Thank you for your comment. To accommodate the proposed Project, portions of the existing 115 kV transmission line presently within the existing transmission corridor would be relocated laterally. In conjunction with this infrastructure relocation, Northern Pass plans to upgrade the capacity of a portion of this existing 115 kV line in the North Country (also known as the "Coos Loop") by up to 100 MW. While this capacity upgrade is not necessary for the implementation/operation of the Project, Northern Pass has determined that upgrading the line infrastructure would be an incidental benefit to surrounding regional generators. Under the No Action Alternative, this upgrade would not occur. The environmental impacts of relocating this 115kV line are considered a portion of the Project and are analyzed in the EIS. An increase in capacity would have no additional environmental impacts. Known energy projects in this area are considered in the analysis of cumulative effects (see Appendix D and Chapter 5 of the EIS), but other future and potential generation development is speculative. Analysis of the impacts of unknown projects is outside the scope of this EIS.

0116-7

Thank you for your comment. Appendix D of the EIS includes a description of past, present, and reasonably foreseeable future projects considered in the analysis of cumulative impacts, which is presented in Chapter 5 of the EIS. Section 5.1.11 of the EIS discusses potential cumulative impacts to wildlife habitat, including impacts to high elevation forests. The Vegetation Resources Technical Report discusses potential impacts on existing vegetation communities, including high elevation forests.

0116-8

Thank you for your comment. The cumulative impact analysis in Section 5.1 of the EIS includes the Granite Reliable Wind Park as one of the past, present, and reasonably foreseeable projects. Potential cumulative impacts to wildlife are specifically addressed in Section 5.1.11 and account for high elevation forest impacts in the Fish Brook Ridge area.

At its highest point on Fish Brook Ridge NP will bisect existing spruce and fir forest cover that is currently habitat for moose, snow shoe hare and likely marten as well. The ROW will pass through these forest stands adding to further losses and degradation of this habitat type on the Ridge which resulted from GRP construction. As the ROW moves south from this ridge it passes directly through a northern hardwood stand that includes beech utilized by black bear as a food source (referred to as bear clawed beech). These would be removed as a result of clearing the ROW.

Deer wintering areas:

The proposed Northern Section alignment passes through two major deer wintering areas (DWAs). One of these is referred to as the State Line DWA and is not listed within the current NHFG DWA data base. The second of the two is a mapped DWA and is referred to as West Road North. Reconnaissance during the winter of 2016 by the Regional biologist further confirmed the use in this DWA by wintering deer. This information needs to be updated and minimization of impacts should be evaluated.

A small section of the ROW also passes through softwood stands located north of the Dummer Pond road which are adjacent to the Island Brook DWA complex located in that town. The Regional biologist expects that in the near future these softwood stands, which are presently in a pole stand size class, will transition into a larger size class and will once again be utilized by deer for winter shelter.

A critical management goal of any DWA is that there are sufficient stands of softwood and mixed wood forest which provide functional cover to support wintering deer. Functional cover stands linked together allow deer to travel seamlessly throughout the DWA providing shelter from inclement weather, access to browse and increases the ability of deer to evade predators more effectively.

The Wildlife Technical Report does not illustrate the true impact of the ROW to this habitat which is critical to the survival of white tailed deer during the winter period. Should the project move forward the clearing of the ROW within these DWAs located along the preferred alignment will not only permanently remove functional deer winter cover but will also interrupt connectivity of the remaining cover thus degrading the DWAs overall ability to harbor wintering deer.

Impacts to deer yards are only evaluated in the WMNF section, but should be evaluated for all sections of the EIS.

High elevation forest:

The proposed ROW passes over Sugar Hill, elevation 2988 feet located in the town of Stewartstown. Forest cover on the summit of Sugar Hill presently consists of densely grown softwood sapling and pole stands interspersed with sapling paper birch. Left undisturbed this forest type would eventually mature creating habitat conditions that are typical of un- harvested higher elevation spruce /fir forests found in Coos County. The tracks of moose, bobcat and marten were documented by the Regional biologist on or near the summit Sugar Hill during the winter of 2016. Higher elevations forests (above 2700 feet) offer a distinct competitive advantage for marten and Canada Lynx over other competing predators due to the ability of these animals to negotiate deep fluffy snow often found at these elevations. In addition the presence of snow shoe hare at these sites provides an important food source for marten and lynx. Forest cover on the westerly slope of Sugar Hill transitions from the forest pole stands found on the summit to a mature mixed wood forest type growing down slope along the proposed ROW as it travels south.

NP crosses over a ridge line that extends easterly from the summit of Fish Brook Ridge which includes a section of spruce and fir habitat that exhibits high elevation characteristics. Habitat on

0116-8
Continued

0116-8 cont'd

0116-9

0116-9

Thank you for your comment. Section 2.2.3, Deer Wintering Areas (DWAs) (Affected Environment, Northern Section) has been added to the Wildlife Technical Report. Additional discussion pertaining to impacts to DWAs has been added to Section 3.2.2.1.2, Non-Listed Terrestrial Species (see Game Species subarea), 3.2.2.2.2 Non-Listed Terrestrial Species (see Game Species subarea), and 3.2.3 (Alternative 3) of the Wildlife Technical Report. Additionally, Appendix H of the EIS includes an Applicant-Proposed Impact Mitigation and Avoidance Measure that Northern Pass has committed to minimize impacts to DWAs as follows, "If tree clearing in or adjacent to deer wintering areas and moose concentration areas must be conducted in the winter during deep or crusted snow conditions, brush and small branches will be left in upland locations at the edge of the transmission route for browse availability."

0116-10

Thank you for your comment. The commenter's opinion is noted regarding the eventual maturation of the Sugar Hill vegetation. Additional information has been added to Section 3.1.2 of the Technical Report and to Section 4.2.12.2 of the final EIS to further clarify potential impacts to high elevation forests.

0116-11

Thank you for your comment. The Vegetation Resources Technical Report provides a thorough discussion of existing vegetation communities, including the "high elevation forests" noted by the commenter. Information in the Technical Report was developed from federal and state databases of land cover, ecoregions, and the state wildlife action plan. Additional information has been added to Section 3.1.2 of the Technical Report and to Section 4.2.12.2 of the final EIS to further clarify potential impacts to high elevation forests.

0116-10

0116-11

Fish Brook Ridge has already been impacted by the GRP wind farm and this is discussed further under cumulative impacts. The proposed ROW also passes over a prominent ridgeline on Cave Mountain in Dixville.

The current condition of the habitat on Sugar Hill is conducive for bobcats and lynx, although heavier snowfall on more “normal” winters than was experienced in 2016 would find lynx having the competitive advantage over bobcats. Although lynx tracks were not noted at Sugar Hill on the two site visits to this area by the Regional biologist in the winter of 2016, tracks and sign have been documented by Department personnel in eight towns in Coos County since 2006 and it is highly conceivable these animals would hunt and travel in this area. Both bobcats and lynx are less likely to use larger non-forested openings, and roads due to low prey abundance and perhaps vulnerability to predators (Fuller et al. 2007, Broman et al. 2014). The ROW will likely influence movements of these felid species particularly during leaf off periods.

Recent research indicates that edge habitat and compacted snow along wide roads (30-50m) provides suitable conditions for red fox and coyotes, and allows these species access to marten habitat, potentially causing direct mortality (Sirén 2013). These predators also compete directly with lynx (O’Donoghue et al. 1995) and benefit from compacted snow (Bunnell et al 2006, Gese et al. 2013). While presently there is a snow mobile trail which passes over Sugar Hill creating a packed surface in to this habitat, the wind swept surface of the ROW could conceivably create hard snow pack conditions along much of its length which would enable generalist predators to more readily infiltrate marten habitat.

The EIS states that, “no long term adverse effects to marten would be expected.” We are concerned that NP itself would permanently degrade the high elevation habitat utilized by marten and the potential for further wind park development would have a demonstrative long term adverse impact to marten in the greater landscape. Additionally the distribution models for marten (Kelly 2005) and lynx Sirén (2014) indicate that the ROW would pass directly through high quality habitat with deep snow and potentially influence north/south movement and dispersal critical to population expansion and viability (Jensen 2012). High elevation forests found in the Northern Section provide some of the best mature spruce/fir and mixed wood habitat in the region given the intensive timber harvests at lower elevations. Further loss of these forests could lead to a point where habitat on the landscape is at a critical tipping point and will no longer support marten.

However, page 4-144 describing Alternative 2, does acknowledge that the removal of more than 300 acres of forest interior habitats would have a long-term adverse effect on forest dwelling species such as the American marten. This is contradictory to the statement noted above. Also, the EIS does not address the potential impacts to Bicknell’s thrush, especially relative to impacts in high elevation forests.

Ridge side habitat:

While not considered high elevation habitat there are forested sections within the ROW that exhibit features similar to high elevation forests including topography with steep terrain, rock and cliff outcrops and thin soils conducive to the growth of spruce/fir and mixed wood forest types. The ROW will occur along portions of these steep side hill ridgelines at numerous locations in the Northern Section. Due to the steep nature of these slopes logging has not occurred at these sites nor is it likely that logging with present technology will ever occur at these locations. These locations become de facto forest reserve areas and provide opportunities for the maturation of spruce and fir and mixed wood forests. The EIS does not evaluate the potential impacts of NP at these locations especially since construction could eliminate these “reserves” of mature forest habitat that would not have been harvested due to the limitations of logging equipment on steep slopes. Some of these locations have ledge outcrops which are favorable denning and resting habitat for bobcats, porcupines, fishers and

0116-11
Continued

0116

0116-11 cont'd

0116-12

0116-12

Thank you for your comment. Impacts to wildlife are discussed in detail throughout the EIS and the Wildlife Technical Report. Sections 4.2.11 (Environmental Impacts, Northern Section, Wildlife) of the EIS and 3.2 of the Wildlife Technical Report (Direct and Indirect Environmental Consequences, Northern Section) address impacts to wildlife within the Northern Section of the Project.

0116-13

0116-13

Thank you for your comment. The discussion of impacts to the American Marten was revised to ensure impact language was fully explained and consistent; the loss of interior forest habitat is a long term adverse affect, but with the application of Applicant-Proposed Impact Avoidance and Minimization Measures, no significant long term impacts to this species are expected. Text was revised in the final EIS in Sections 4.2.11 (Northern Section - Environmental Impacts-Wildlife); 4.3.11 (Central Section-Environmental Impacts - Wildlife); 4.5.11 (WMNF Section-Environmental Impacts) and in the Wildlife Technical Report in Sections 3.2.2.1.3 (Northern Section - Environmental Consequences - Listed Species); 3.3.2.1.3 (Central Section - Environmental Consequences - Listed Species); 3.5.2.1.3 (WMNF Section -Environmental Consequences - Listed Species); and other listed species subsections in each of the project alternatives. Impacts to Bicknell's thrush is included in all of these Sections.

0116-14

Thank you for your comment. The Vegetation Resources Technical Report provides a thorough discussion of existing vegetation communities, including the "high elevation forests" and their ability to reach mature successional stages as noted by the commenter. Information in the Technical Report was developed from federal and state databases of land cover, ecoregions, and the state wildlife action plan. Additional information has been added to Section 3.1.2 of the Technical Report and to Section 4.2.12.2 of the final EIS to further clarify potential impacts to high elevation forests.

0116-14

martens. The construction of the line in these areas will disrupt and devalue this habitat function and will likely cause avoidance by these and other species which are attracted to this habitat.

Shrub land habitat and the NP:

The EIS asserts that the ROW from the US- Canadian border will be converted from forest to shrub land. It is our opinion that the Northern Section will be less likely to develop in to this habitat type and would not provide any shrub land habitat of any meaningful significance given the narrow linear configuration of the ROW and natural forest succession that is likely to grow in following the ROW clearing. As an example vegetation on the current GRP ROW consists for the most part of regenerating hardwood, and some softwood, tree species in a sapling and pole size class. Some raspberry and black berry is also found growing along this ROW and does provide some food value for wildlife however this habitat is common in the Northern section due to timber harvest. It would be expected that vegetation post clearing on NP would grow in to a similar vegetation type.

In the Northern 40 most of the ROW will pass through a heavily forested landscape, which would offer little value for species that require either a shrub land habitat type. Steep rugged terrain found along portions of the route would be even less likely to grow vegetation that could be classified as shrub land. Additionally bird species that might be attracted to the ROW for nesting would be at higher risk to predation given the narrow corridor which aids in their ability to effectively search for nesting birds. The ROW could also become a vector for more generalist bird species to invade habitat conducive to interior bird species.

Riparian habitat:

The proposed ROW intercepts numerous streams on the Northern Section and undoubtedly will intercept streams throughout the full length of the project ROW. Forested cover along these streams provides important wildlife habitat, particularly for mustelids. Sirén (2013) demonstrated how marten favored riparian habitat as they traveled up through their home range. Line clearing over these streams would eliminate this habitat. It is our contention that should the line be built vegetated habitat be allowed to remain along these streams and would become a component of a larger network of wildlife crossing corridors established along the length of the new ROW. Any vegetative maintenance schedule conducted by NP managers would need to allow for the continued protection of this habitat feature development of this habitat type.

Page 4-432 states that *widening of existing ROWs within riparian areas could lead to adverse effects related to sun exposure and increase in stream temperatures*. This analysis should have been included in each section, not just as it relates to the WMNF.

Construction Roads:

The EIS does not directly address the impacts to wildlife and fisheries resources associated with new access roads that will be required to construct the project. We do acknowledge that some existing log roads currently crisscrossing portions of the greater landscape will help to provide some access for the project; however, our field reconnaissance proved that much of the Northern Forty does not have direct road access to the proposed alignment. It has been our experience with other powerline projects that should these roads remain for permanent maintenance access there will be increased human traffic in to these previously road free locations. These construction roads will pose yet another form of fragmentation upon the landscape. Additionally we have seen no assurances that these roads, even if they are not maintained, will not remain open to the public, be used for recreational trails and other purposes all of which could have a pronounced impact to wildlife. Similar to the ROW itself the packed snow surfaces on these roads due to winter recreational use could serve as a vector for competing carnivores.

0116-14
Continued 0116-14 cont'd

0116-15

0116-15

Thank you for your comment. Section 4.1.12 of the EIS notes that the primary vegetation impact from new and widened transmission corridors for the overhead portion of the Project would be clearing of forest cover and "converting these vegetation communities to scrub-shrub, herbaceous, and other earlier successional cover types." Section 3 of the Vegetation Resources Technical Report and Section 4.1.12 of the final EIS have been revised to state that forested areas impacted during construction would likely revegetate to early successional forested land during the long-term operation of the Project Regeneration would require one to three years for herbaceous communities and three to five years for shrub communities.

0116-16

Vegetation within existing transmission corridors would remain largely intact, although subject to current vegetation management practices.

0116-16

0116-17

Thank you for your comment. A similar discussion with the same conclusions can be found in Chapter 3 of the Wildlife Technical Report, specifically in each of the Bird subsections (2.2.1.2.2, 2.3.1.2.2, 2.4.1.2.2, and 2.5.1.2.2).

0116-17

Thank you for your comment. The discussion of impacts to riparian areas was checked to ensure potential impacts throughout the project area are adequately addressed. In the EIS, WMNF discussion was revised in Section 4.5.11.2 (Environmental Impacts, WMNF Section, Wildlife, Alternative 2) and additional discussion was included in the following sections: 4.1.11.1 (Environmental Impacts, General Impacts, Wildlife), 4.2.13.2 (Environmental Impacts, Northern Section, Alternative 2), and 4.5.13 (Environmental Impacts, WMNF Section, Alternatives 2, 3, and 5b).

0116-18

0116-18

Thank you for your comment. The discussion of impacts resulting from habitat fragmentation was checked to ensure potential impacts are adequately accounted for in the impact discussion. The following sections of the final EIS were updated: final EIS Section 2.5.11 and for the Wildlife Technical Report in Sections 4.1.11 (Environmental Impacts, General Environmental Impacts, Wildlife); 4.2.11 (Environmental Impacts, Northern Section, Wildlife); 4.3.11 (Environmental Impacts, Central Section,

Wildlife), 4.4.11 (Environmental Impacts, Southern Section, Wildlife), and 4.5.11 (Environmental Impacts, WMNF Section, Wildlife).

Raptor species concerns:

While the EIS does discuss some impacts of the project to raptors these documents do not specifically address the potential for raptors constructing their nests on powerline support structures. Ospreys in particular are known to build nests on active powerline support structure causing risk to the birds and infrastructure. Currently ospreys have constructed at least one new nest on the GRP powerline poles located along the Dummer Pond road which is very close to the proposed Northern Pass alignment. We feel that it is remiss of the applicant to not address this issue in their review and include plans on how they will address this potential conflict.

State and Federally protected wildlife species.

The EIS does not include enough information to justify their conclusions for level of impacts, especially for those species that overlap the project and where adverse impacts are possible (e.g., black racer, wood turtle, brook floater mussel, etc.). For the species that are not likely to occur within the project footprint, we agree that further analysis is not warranted (e.g., timber rattlesnake, marbled salamander).

The Summary report (Page 14) included the major conclusion that “Under all action alternatives: 1) no population –level effects to any protected species would be anticipated...” On page 30-31 of the EIS summary report: Summary of Wildlife Impacts, only 4 species were identified as having potential adverse effects under at least one of the alternatives (Karner blue butterfly, Canada lynx, Bridle shiner, and brook floater mussel). Volume 1: Impact analyses (July 2015) includes periodic text throughout document that “however, no population-level effects are expected and the majority of adverse effects would be short-term” The EIS also doesn’t seem to make distinction between impacts to species population range-wide, in New Hampshire, or local populations. Also, pages 4-65-68 categorizes many state-listed species as: “localized, short-term, adverse effects.”

“Take” of endangered and threatened wildlife is prohibited under the NH Endangered Wildlife Act (RSA 212-A). It isn’t clear whether take would be potential or expected under the ‘localized, short-term, adverse effects’ category. Page 4-70 indicates that “Slow moving species, such as the wood turtle, could suffer from mortality or injury by construction equipment or construction crew foot traffic during clearing, grading, and excavation activities...” We concur with this statement and if mortality does occur, impacts could be more severe than short-term impacts due to species demographic constraints (i.e., Blanding’s, spotted, and wood turtle rely on extremely high adult survival to compensate for low annual recruitment).

The Wildlife Technical Report (Page 165) recognized the potential for some long-term adverse impacts to wood turtles but this potential isn’t reflected in the overall summary category listed on Table 37 (Wildlife Technical report). Also, we acknowledge that Volume 2, Appendices G and H include some initial evaluation of impacts to federally listed wildlife species and avoidance and minimization measures.

Future management and maintenance of utility ROW has potential to impact state-listed wildlife species (e.g., black racers, turtles) and maintenance of their habitat into the future. This generally wasn’t addressed in sufficient detail at the species-specific level to assess likelihood of mortality and other impacts. In some cases, avoiding and/or minimizing impacts will be difficult without knowledge of critical habitat components (e.g., black racer den sites). However, due to the nature of the project, avoidance of all impacts (including take) will be extremely difficult.

- 0116-19 0116-19 Thank you for your comment. Appendix H (Applicant-Proposed Impact Avoidance and Minimization Measures) of the EIS states, "The project corridor will be resurveyed by helicopter for raptor nests prior to construction to identify any new raptor nests in or near the transmission corridor, so that these may be removed or replaced (under permits) prior to the nesting season, or avoided as necessary." As further stated in Section 1.5.1.3, Bald and Golden Eagle Protection Act (BGEPA), of the Wildlife Technical Report, Northern Pass would obtain "take" permits as required under BGEPA before removing or replacing said nests. Any additional measures during operations and maintenance can be discussed between the applicant and USFWS, NHFG, or other interested agencies.
- 0116-20 0116-20 Thank you for your comment. The EIS and supporting Wildlife Technical Report provide an expansive discussion of potential impacts to listed species. Given that Northern Pass will adhere to the Applicant-Proposed Impact Avoidance and Minimization Measures described in Appendix H of the EIS during construction and operation of the Project, and the small size of the disturbance area during construction and routine maintenance (compared to the remaining undisturbed habitats in other parts of the state or region), no short-term or long-term significant impacts to listed species are expected.
- 0116-21 0116-21 Thank you for your comment. The final EIS and the Wildlife Technical Report have been reviewed and revised, as needed, to ensure any statements regarding population level affects (regional or local) are adequately defined and consistent throughout both documents. In the final EIS this included revisions in the following sections: Section 4.1.11 (General Environmental Impacts-Wildlife), Table 4-60 (Determination Summary of Project-wide Effects for Federally-Listed Wildlife Species), and Table 4-61 (Summary of Project-wide Effects for State Threatened and Endangered Wildlife Species); Section 4.2.11 (Northern Section-Wildlife- Alternatives 2-7); Section 4.3.11 (Central Section-Wildlife- Alternatives 2-7); Section 4.4.11 (Southern Section-Wildlife- Alternatives 2-7); Section 4.5.11 (WMNF Section-Wildlife- Alternatives 2-7). In the Final Wildlife Technical Report, the following Sections were revised: Section 3.2: (Northern Section- Impacts from Construction and Operation); Section 3.3 (Central Section- Impacts from Construction and Operation); 3.4 (Southern Section- Impacts from Construction and Operation); and 3.5 (WMNF Section-

Impacts from Construction and Operation for all project alternatives), as appropriate.

0116-22

Thank you for your comment. Section 4.1.11.1 in the final EIS was revised to indicate that mortality of state listed species, such as the wood turtle, was be considered a "take" under the NH Endangered Wildlife Act, which would result in a long-term impact to this species. The Final Wildlife Technical Report has been reviewed and revised to ensure that the data in Table 37 (Protected Species in New Hampshire and the Primary Construction-Related Effects) in Section 3.2.2.1.3 (Listed Species in Direct and Indirect Environmental Consequences, Northern Section, Alternative 2) and the text following it are consistent.

0116-23

Thank you for your comment. As required under NH state law (RSA 212-A:7), Northern Pass would utilize protective measures to avoid or minimize impacts to state listed species, as stated in the Applicant-Proposed Impact Avoidance and Minimization Measures (see Appendix H of the EIS). Additional discussion regarding state listed species was added to the Wildlife Technical Report in Sections 3.2.2.1.3 and 3.2.2.2.3: Northern Section - Construction and Operation Environmental Consequences - Listed Species; sections 3.3.2.1.3 and 3.3.2.2.3 Central Section - Construction and Operation Environmental Consequences - Listed Species; sections 3.4.2.1.3 and 3.4.2.2.3: Southern Section - Construction and Operation Environmental Consequences - Listed Species; and sections 3.5.2.1.3 and 3.5.2.2.3: WMNF Section - Construction and Operation Environmental Consequences and all corresponding alternative sections.

In addition, further discussion on the maintenance of the ROW needs to be further evaluated, especially when addressing the potential for invasive species management. The EIS states that Eversource does not use herbicides to manage vegetation within their ROW; however, there may be a potential need for its use in the future when existing methods prove ineffective. If this is the case, then an evaluation of its impacts should be addressed as it relates to potential impacts on wildlife.

Karner blue butterfly – The draft EIS Alternative 7 analysis acknowledges that the project, as proposed, ‘may affect, and is likely to adversely affect Karner blue butterfly. We concur that the proposed project will have adverse impacts to state and federally listed Karner blue butterfly and we will work with US Department of Energy, USFWS, and Normandeau Associates in evaluating these impacts. The information provided in the draft EIS is not adequate to fully evaluate these impacts. More information needs to be provided to the potential direct impacts within the 20 acres of wild lupine and how it will impact the Karner butterfly recruitment during the construction process.

Canada Lynx - The draft EIS Alternative 7 analysis indicates that the project ‘may affect, but not likely’. In the EIS summary report (Page 31), the authors indicate that ‘no lynx or suitable denning habitat located within study area’. This information seems to conflict with information provided by Normandeau Associates. Also, comments in this document (previous sections) should be included in the evaluation of impacts regarding the Canada Lynx. It is interesting that the WMNF section identifies that fragmentation could impact Canada Lynx and American Marten, but it does not indicate these impacts as clearly in the other sections, more specifically, the Northern section, where a new ROW is proposed.

Maps:

The maps are shown at a statewide scale, which are not useful for assessing impacts to wildlife. The EIS states that detailed engineering plans are not complete, however, they would be very useful to evaluate local impacts for all wildlife species.

Burial vs. Overhead lines:

Freshwater mussels and other invertebrates, fish, reptiles, amphibians, and other wildlife will be differentially affected by alternatives involving burial of lines and overhead line construction. The EIS does not provide sufficient details to evaluate localized conditions and impacts (e.g., stream crossings).

Impacts from sub-station upgrades/creation (Deerfield/Scobie Pond substation, etc.). Page 4-341 “The project has the potential to impact wildlife resources....All alternatives would include impacts associated with AC system support projects south of the Deerfield substation...and an expansion of the existing Scobie Pond Substation.” The localized specific proposed upgrades at these facilities would need evaluation to avoid and minimize impacts to state protected wildlife resources.

Additional Wildlife Comments:

Volume 1: Impact Analyses (July 2015)

Page 2-53: Impacts to aquatic habitats could be avoided through the use of horizontal directional drilling (HDD). This should be used where appropriate in order to minimize impacts to waterways, especially potential secondary impacts caused by canopy reduction.

Page 3-93: Fowler’s toad, northern leopard frog, mink frog, and wood turtle were observed in central section. Potential impacts to these species not addressed. Fowler’s toads have only been

0116-24

0116

0116-24

Thank you for your comment. The commenter is correct that current vegetation management activities in existing PSNH transmission corridors do not use herbicides on an ongoing basis. According to the applicant, all vegetation management and maintenance would be in accordance with the state Division of Forest Lands’ best management practices for utility maintenance. The applicant has also stipulated in its Applicant Proposed Measures, found in EIS Appendix H, that they would not use herbicides.

0116-25

0116-25

Thank you for your comment. Endangered Species Act consultation with U.S. Fish and Wildlife Service for the Project was ongoing at the time of publication of the draft EIS. Updated and additional discussion of impacts and mitigation for the Karner blue butterfly and wild lupine has been added to the revised Wildlife Technical Report for the final EIS. Additional information was added to the following sections of the final EIS: Section 2.5.11 (Wildlife), Table 2-16 (Determination Summary of Project-wide Effects for Federally-Listed Wildlife Species); Section 2.5.12 (Vegetation), Table 2-19 Comparison of Project-Wide Effects for State-Listed Plant Species; Section 4.1.11 (Wildlife), Table 4-60, Determination Summary of Project-wide Effects for Federally-Listed Wildlife Species; Section 4.1.12 (Vegetation), Table 4-63, Comparison of Project-wide Effects for State-Listed Plant Species; Section 4.4.11.2 (Wildlife, Alternative 2), Terrestrial Species, Section 5.1.11.3 (Wildlife, Alternative 2), Scope of Analysis, Past, Present, and Reasonably Foreseeable Future Actions; Section 5.1.11.4 (Alternative 3); Section 5.1.11.11 (Alternative 6a); 5.1.11.12 (Alternative 7); and in the Wildlife Technical Report in Sections 3.4.2.1.3 (Listed Species under Alternative 2), as well as other respective Listed Species sections for each project alternative in the Southern Section.

0116-27

0116-28

0116-26

Thank you for your comment. Endangered Species Act consultation with U.S. Fish and Wildlife Service for the Project was ongoing at the time of publication of the draft EIS. Therefore, updated and additional discussion of impacts and minimization measures for the Canada lynx has been included in the final EIS and the revised Wildlife Technical Report for the final EIS. Additional and updated discussion regarding Canada lynx has been added to Sections 4.2.11 (Environmental Impacts - Northern Section- Wildlife), Section, 4.3.11 (Environmental Impacts - Central Section - Wildlife), and 4.5.11 (Environmental

0116-29

0116-30

Impacts - WMNF Section - Wildlife) of the final EIS.

0116-27

Thank you for your comment. Appendix A of the Wildlife Technical Report contains detailed maps at larger scales (including by geographic section and larger). Impacts to wildlife are analyzed by geographic section in the EIS (Sections 4.1.11, 4.2.11, 4.3.11, 4.4.11, and 4.5.11). Detailed engineering plans have been developed by Northern Pass for Alternative 7 - Proposed Action as part of their application to the New Hampshire Site Evaluation Committee, and local wildlife impacts will be considered by the state in their review. This is not a federal process and is separate from federal review under NEPA.

0116-28

Thank you for your comment. The EIS evaluates impacts to aquatic communities in Section 4.1.11, 4.2.11, 4.3.11, and 4.4.11. This Federal NEPA EIS is not intended to evaluate the localized impact of each individual water body crossing on its own. The state siting process is the appropriate mechanism for evaluating impacts at that scale. With respect to substation and AC system upgrades, Section 4.4.11 includes additional information related to these impacts, but the highly localized impacts referenced by the commenter will be addressed during the state siting process.

0116-29

Thank you for your comment. As indicated in the comment, Section 2.5.11 of the EIS states that HDD is a potential construction technique that the Applicant may employ to minimize impacts to aquatic habitat crossings. Also, as indicated Appendix H, Applicant-Proposed Impact Avoidance and Mitigation Measures, the Applicant may employ special techniques (such as HDD) to protect rare, threatened or endangered species, Forest Service Sensitive Species, and Exemplary Natural Communities.

0116-30

Thank you for your comment. The siting of a Fowler's toad cannot be confirmed, so this reference was removed from the final EIS and the Wildlife Technical Report. In the draft EIS, Table 4-62 only included state threatened and endangered species, which does not include the northern leopard frog, mink frog, and wood turtle. Table 4-62 in the final EIS was revised to include all state species of concern and species in greatest need of conservation.

confirmed in two sites in NH recently so confirming these record and evaluating associated impacts will be important.

Page 3-110 : Northern leopard frogs and mink frogs observed in southern section. Mink frogs are not known to occur this far south so we wonder if this was potentially a misidentified green frog.

Page 4-343 “The Applicant would be required to consult with USFWS, USFS, and NHFG regarding any potential disturbance to listed wildlife populations.”

Page 3-57: The Ammonoosuc and Pemigewasset Rivers are also Designated Rivers in RSA 483.

Table 3-16: total of 443 perennial streams are proposed to be crossed. This is significant.

Page 3-76 (and other sections): “*The study area of the Northern Section contains multiple rivers and streams within the Upper Connecticut River and Upper Androscoggin watersheds, which include over 154 perennial streams or stream segments and numerous intermittent and ephemeral streams, as well as ponds or marshes. Many of the drainages identified are either temporal or too small to support aquatic communities.*” It is not stated upon what data or studies this statement about “too small” is based. Without drainage area (size) information, it is not possible to determine if this statement is correct. Therefore, drainage area to each crossing site should be reported. Collectively, there are thousands of individual fish survey locations for New Hampshire in the NHFGD, NHDES and USFS databases. This information could be used to determine which of the proposed crossing locations are known to have or likely have wild, sustainable fish populations.

Page 4-88: “*Although there would be some secondary water quality and habitat effects from canopy reduction, mitigation would be undertaken to address those effects.*” Appendix H includes several statements that these impacts would be reduced using appropriate BMPs, and in the state and federal permitting process. Of particular note is that about stream crossings, “*All permanent new, redesigned, or reconstructed stream crossings will be designed and constructed to pass bank full flows, withstand expected flood flows, provide for the passage of sediment, bedload and woody material, and allow free movement of resident aquatic life and in accordance with NHDES Stream Crossing Rules (Env-Wt 900).*”

Page 4-90: “*Long-term impacts on water resources from the normal operation of the Project under any of the alternatives are not anticipated.*” This seems to ignore potential impacts from the removal of vegetation near streams and rivers and the subsequent increase in solar radiation reaching streams and rivers. This will increase the water temperature during summer, and because many of the streams and rivers that will be crossed contain wild brook trout, which are sensitive to increases in summer water temperatures, there are likely to be negative impacts to water quality (water temperature) and to wild brook trout from the maintenance of the proposed project.

Page 4-154: “*In addition, removal of 64 acres (26 ha) of various forest types, including conifer, deciduous and mixed hard/softwood forests, within 100 feet (30 m) of a stream would result in secondary impacts to surface waters.*” This indicates that the EIS acknowledges there are potential impacts to the water quality (water temperature) of streams and rivers.

Water Resources Technical Report, for the Draft Environmental Impact Statement, July 20, 2015

Table 4, starting on page 30: It is stated that there are 154 perennial streams in this section, but the table seems to include many fewer than 154 perennial streams. Several large rivers are indicated to be “*artificial path*” and this seems to indicate that they are not important (because they

0116-30

Continued 0116-30 cont'd

0116-31

0116-31

Thank you for your comment. The identification of the Mink Frog cannot be confirmed, so this observation has been removed from Section 3.4.11.2 of the final EIS and Section 2.4.3.2.5 of the Wildlife Technical Report.

0116-32

0116-32

Thank you for your comment. The discussion of aquatic habitat in Sections 3.2.13, 3.3.11, 3.3.13, 3.4.11, 3.4.13, and 3.5.13 of the final EIS has been reviewed and language referencing fish populations has been removed. The applicant will need to coordinate with NH DES and other state and local agencies to ensure avoidance and minimization of impacts to fish populations. Appendix H of the EIS lists Applicant Proposed Measures to avoid and minimize impacts, and additional measures will be developed by the Applicant through the state siting process.

0116-33

0116-33

Thank you for your comment. The commenter accurately cites Appendix H of the EIS.

0116-34

0116-34

Thank you for your comment. Impacts to brook trout resulting from thermal loading have been added to the construction sections of wildlife sections of the final EIS. Discussion was added to sections 4.1.11 (Environmental Impacts, General Impacts); 4.2.11.2 (Environmental Impacts, Northern Section, Wildlife, Alternative 2); and corresponding sections of the Wildlife Technical Report (Section 3.1.1.1 General Direct and Indirect Environmental Consequences - Aquatic species, Section 3.2.2.1.1 Northern Section - Non-listed Aquatic Species).

0116-35

0116-35

Thank you for your comment. The commenter's table references are to the Water Resources Technical Report. Information in the tables mentioned has been revised to ensure consistency between the classification of streams noted in the text and those identified in the tables. Based on field surveys, it was determined that the Upper Ammonoosuc River is a perennial artificial path, and that Carrol Stream is intermittent in the study area.

are artificial). Are both Carroll Steam and the Upper Ammonoosuc River truly intermittent at the proposed crossing locations?

Tables 12, 19 and 26: please check that those streams indicated as intermittent are truly intermittent.

Also, more information needs to address the impacts to vernal pools within the proposed preferred route, including the efforts to minimize or mitigate for the potential impacts. 7 vernal pools in the North section, 4 vernal pools in Central section and no vernal pools in the South, as noted for the preferred alternative.

Wildlife Technical Report for Draft Environmental Impact Statement

Page 29 – Section 2.2.1.2.1 Reptiles and Amphibians. Northern Section- Indicates documentation of Fowler’s toad, leopard frog, mink frog, wood frogs, and wood frogs. The exact locations of these records (and further documentation of) would be helpful to NHFG in our review. NHFG does not currently have any records of Fowler’s toads in Coos County. However, we concur with not including exact locations of sensitive species (e.g., wood turtles) within the EIS.

Page 49. 2.2.3.2.4 Bridle Shiner “The bridle shiner can be legally used as bait in the state (NHFG 2005)” This reference was prior to the species being listed as threatened in 2008 (NHFG FIS 1000) and therefore no longer relevant.

Page 53 – Central section. Reptiles and Amphibians. Fowler’s toads and wood turtles identified. The exact locations of these records (and further documentation of) would be helpful to NHFG in our review. However, we concur with not including exact locations of sensitive species (e.g., wood turtles) within the EIS.

Page 70 – Southern section. Freshwater mussels – Please submit documentation report of brook floater mussels and other mussel species directly to NHFG, if not done previously.

Page 85 – Southern section -Reptiles and Amphibians - Please submit documentation report of wood turtles and other tracked species directly to NHFG, if not done previously.

Table 4, page 57: - this table does not contain Brook Trout, which is one of the most ubiquitous fish species in the Northern and Central Sections of the proposed routes. Potential impacts should be evaluated for this species in the EIS.

Page 87: “*The SE Group team did not conduct any Project-specific fish surveys, nor did it find any documentation regarding fish populations within these systems crossed by the Project.*” This statement is surprising given that the NHFGD maintains a database of fish survey locations and the fish species, often including with length and weight of individual fish. NHDES also maintains a similar database for its fish survey work relative to water quality, and the USFS maintains a similar database of fish surveys conducted by the USFS. Collectively, there are thousands of individual fish survey locations for New Hampshire in these databases.

Bridle shiner populations have recently (2015) been found in the Central Section, and therefore have the potential to be negatively impacted by the proposed project.

0116-35
Continued

0116

0116-35 cont'd

0116-36
0116-36

Thank you for your comment. The commenter’s concern regarding potential impacts to vernal pools is noted. Impacts to vernal pools are described in the EIS (see Sections 4.1.13, 4.2.13, 4.3.13, and 4.5.13). Vernal pools were identified based on landscape position and other indicators of seasonal hydrology.

0116-37

While vernal pools were identified in the Northern, Central, and WMNF Sections, no indicator species were present at any vernal pools. Mitigation measures for vernal pools are discussed in Section 3.1.2 in the Water Resources Technical Report. If the project is approved, specific impacts at specific locations would be evaluated in more detail during subsequent federal and state oversight and permitting processes.

0116-38

0116-37

Thank you for your comment. The identification of the Fowler's toad cannot be confirmed, so this observation has been removed from Section 3.2.11.2 of the final EIS and Section 2.2.1.2.1 of the Wildlife Technical Report.

0116-39

0116-38

0116-40

Thank you for your comment. In response to this comment, the two instances of the use of this language from the Wildlife Technical Report in Sections 2.2.4.2.4 and 2.5.3.3.4 have been removed.

0116-41

0116-39

0116-42

Thank you for your comment. The identification of the Fowler's toad cannot be confirmed, so this observation has been removed from Section 3.2.11.2 of the final EIS and Section 2.2.1.2.1 of the Wildlife Technical Report.

0116-43

0116-40

Thank you for your comment. DOE provided the Targeted Spring and Summer 2013 Wildlife and Vegetation Survey Report, Northern Pass Transmission Project Amended Presidential Permit Application in Rockingham, Merrimack, Belknap, Grafton and Coos Counties, New Hampshire (February 2014) and the Targeted Spring and Summer 2014 Wildlife Survey Report for Project Alternatives, Northern Pass Transmission Project Amended Presidential Permit Application in Rockingham, Merrimack, Belknap, Grafton and Coos Counties, New Hampshire (July 2015), which contained the results of mussel surveys performed by Biodrawversity, LLC, to the New

0116-44

Hampshire Fish and Game Department on February 5, 2016 in an email to Michael Marchand and Carol Henderson.

0116-41

Thank you for your comment. DOE provided the Targeted Spring and Summer 2013 Wildlife and Vegetation Survey Report, Northern Pass Transmission Project Amended Presidential Permit Application in Rockingham, Merrimack, Belknap, Grafton and Coos Counties, New Hampshire (February 2014) and the Targeted Spring and Summer 2014 Wildlife Survey Report for Project Alternatives, Northern Pass Transmission Project Amended Presidential Permit Application in Rockingham, Merrimack, Belknap, Grafton and Coos Counties, New Hampshire (July 2015), to the New Hampshire Fish and Game Department on February 5, 2016 in an email to Michael Marchand and Carol Henderson.

0116-42

Thank you for your comment. The Eastern Brook Trout (EBT) was added to Tables 3-14 and 4-61 of the final EIS, as the EBT is now considered a Species of Greatest Need of Conservation (it was not listed during preparation of the draft EIS); additional discussion regarding impacts from thermal loading was also included in these sections of the final EIS. Potential thermal impacts from tree clearing are also considered in Section 4.2.13 in the subsection for Surface Water. In the Wildlife Technical Report, Tables 2, 37 and 39 were revised to include the EBT as a SGNC species. Additional discussion regarding impacts from loss of riparian areas was also added to Sections 3.1.1.1 and 3.2.2.1.1 of the Wildlife Technical Report.

0116-43

Thank you for your comment. Any necessary additions to impacts on fish populations have been added to the final EIS and Wildlife Technical Report. Discussion and Applicant-Proposed Impact Avoidance and Mitigation Measures in the Appendix H of the EIS include statements that indicate protective measures would be applied during construction and operation of the Project.

0116-44

Thank you for your comment. Discussion of impacts to the recently observed bridle shiner have been incorporated in the Wildlife Technical Report in Sections 2.3.3.2.2(Affected Environment, Central Section, Listed Wildlife Species, Fish), and 3.3.2-3.3.12 (Direct and Indirect Environmental Consequences, Central Section, Alternatives 2-7, Listed Species).

Thank you for the opportunity to comment on the draft and supplemental EIS for this project. If you have any comments or questions, please do not hesitate to contact Carol Henderson, Environmental Review Coordinator via email or phone at 603-271-3511.

Sincerely,

A handwritten signature in black ink, appearing to read "G. Normandeau", written in a cursive style.

Glenn Normandeau
Executive Director

Literature cited:

- Beazley, K., and Cardinal, N. 2004. A systematic approach for selecting focal species for conservation in the forests of Nova Scotia and Maine. *Environmental Conservation*, 31: 91-101.
- Broman, D.J., Litvaitis, J.A., Ellingwood, M., Tate, P., and Reed, G.C. (2014). Modeling bobcat *Lynx rufus* habitat associations using telemetry locations and citizen-scientist observations: are the results comparable?. *Wildlife Biology*, 20: 229-237.
- Bunnell, K.D., Flinders, J.T., and Wolfe, M. L. 2006. Potential impacts of coyotes and snowmobiles on lynx conservation in the intermountain west. *Wildlife Society Bulletin*, 34: 828-838.
- Fuller, A.K., Harrison, D.J., and Vashon, J.H. 2007. Winter habitat selection by Canada lynx in Maine: prey abundance or accessibility?. *The Journal of Wildlife Management*, 71: 1980-1986.
- Gese, E.M., Dowd, J.L., and Aubry, L.M. 2013. The influence of snowmobile trails on coyote movements during winter in high-elevation landscapes. *PloS one*, 8(12), e82862.
- Hepinstall, J. A. and D. J. Harrison. 2002. Marten as a tool for landscape-scale habitat planning in northern Maine. Cooperative Forestry Research Unit Annual Report, University of Maine Orono 2001-2002.
- Jensen, P.G. 2012. Ecology of American marten in northern hardwood forests: Resource pulse and resource selection across temporal and spatial scales. PhD Dissertation, McGill University, Montreal, Canada.
- Kelly, J.R. 2005. Recent distribution and population characteristics of American marten in New Hampshire and potential limiting factors affecting their occurrence. M. S. Thesis, University of Massachusetts, Amherst, Massachusetts, USA.
- O'Donoghue, M., E. Hofer, and F.I. Doyle. 1995. Predator versus predator. *Natural History*, 104: 6-9.
- Sirén, A.P.K. 2013. Population ecology of American marten in New Hampshire: Impact of wind farm development in high elevation habitat. M. S. Thesis University of New Hampshire, Durham, New Hampshire, USA.
- Sirén, A.P.K. 2015. A comparison of snow track and camera surveys for detecting Canada lynx (*Lynx canadensis*) and sympatric carnivores in north-central New England. Final Report, New Hampshire Fish and Game Department, Concord
- Sirén, A.P., Pekins, P.J., Ducey, M.J., and Kilborn, J.R. 2015. Spatial ecology and resource selection of a high elevation American marten population in the northeastern United States. *Canadian Journal of Zoology*, DOI: 10.1139/cjz-2015-0148.



The State of New Hampshire
DEPARTMENT OF ENVIRONMENTAL SERVICES



Thomas S. Burack, Commissioner

April 4, 2016

Brian Mills
 National Electricity Delivery Division
 Office of Electricity Delivery and Energy Reliability (OE-20)
 U.S. Department of Energy
 1000 Independence Avenue, Suite SW
 Washington, DC 20585

RE: NHDES COMMENTS – NORTHERN PASS TRANSMISSION LINE PROJECT - DRAFT ENVIRONMENTAL IMPACT STATEMENT & ITS SUPPLEMENT

Dear Mr. Mills:

The New Hampshire Department of Environmental Services (NHDES) has completed its review of the subject document. The purpose of the NHDES review is to identify and assess the alternatives described in the subject documents related to the proposed siting, construction and operation of the Northern Pass Transmission Line (NPTL) from Pittsburg to Deerfield, New Hampshire, based on surveys and data collected to date by the U.S. Department of Energy.

The overall focus for NHDES was to identify potential impacts to public health and the environment posed by the project and how they will be mitigated along the proposed right-of-way. Program areas addressed by this analysis included aquifer/groundwater and surface water quality protection, impacts to air quality, rivers and lakes protection, storm water management, contaminated sites management, wetlands and shoreland impacts, solid waste and hazardous waste management, among others.

NHDES appreciated the opportunity to comment on the subject documents. It is our intent to continue providing technical guidance and input to your efforts for evaluating the proposed NPTL Project relative to its potential to impact the unique environmental resources within and adjacent to the proposed right-of-way. If there are questions, please contact me as necessary. My telephone number is (603) 271-3306 and email address is Timothy.Drew@des.nh.gov.

Sincerely,

Timothy W. Drew
 Administrator
 Public Information & Permitting
 Office of the Commissioner

Enc.

Cc: Thomas S. Burack, Commissioner, NHDES
 Clark Freise, Assistant Commissioner, NHDES
 Amy Kennedy, Office of the Governor
 Meredith Hatfield, Executive Director, NHOEP
 Michael Fitzgerald, Assistant Director, Air Resources Division, NHDES
 Michael Wimsatt, Director, Waste Management Division, NHDES
 Eugene Forbes, Director, Water Division, NHDES
 All NHDES Program Contributors

DES Web Site: www.des.nh.gov

P.O. Box 95, 29 Hazen Drive, Concord, New Hampshire 03302-0095
 Telephone: (603) 271-3449 Fax: (603) 271-2867 TDD Access: Relay NH 1-800-735-2964



**Proposed Northern Pass Transmission Line Project
U.S. Department of Energy**

Draft Environmental Impact Statement & Supplement

NHDES Comments

April 4, 2016

NH DES point of contact:

Timothy W. Drew
Administrator
Public Information & Permitting
Office of the Commissioner
NH DES
P.O. Box 95
29 Hazen Drive
Concord, NH 03302-00905

Tel: (603) 271-3306
Cell: (603) 419-0123
E-mail: timothy.drew@des.nh.gov

1. Office of the Commissioner

Permitting

General Comment: Partial list of NHDES permitting programs potentially triggered by the proposed Northern Pass Transmission Line (NPTL) Project.

Permitting Guidance: <http://des.nh.gov/organization/commissioner/pip/index.htm>

Pre-application Meetings: <http://www4.egov.nh.gov/DES/PreApp/>

- Alteration of Terrain: <http://des.nh.gov/organization/divisions/water/aot/index.htm>
- Wetlands Permitting:
<http://des.nh.gov/organization/divisions/water/wetlands/index.htm>
- Drinking Water/Groundwater Protection:
<http://des.nh.gov/organization/divisions/water/dwgb/index.htm>
- Drinking Water Source Protection:
<http://des.nh.gov/organization/divisions/water/dwgb/dwspp/index.htm>
- Groundwater Discharge Program:
http://des.nh.gov/organization/divisions/water/dwgb/dwspp/gw_discharge/index.htm
- Rivers Management & Protection Program:
<http://des.nh.gov/organization/divisions/water/wmb/rivers/index.htm>
- Shoreland Program:
<http://des.nh.gov/organization/divisions/water/wetlands/cspa/index.htm>
- Storm Water Program:
<http://des.nh.gov/organization/divisions/water/stormwater/index.htm>
- Climate Resilience for Drinking Water & Wastewater Systems:
<http://des.nh.gov/organization/divisions/water/dwgb/climate-resilience.htm>
- Section 401 (federal Clean Water Act) Water Quality Certificate:
<http://des.nh.gov/organization/divisions/water/wmb/section401/index.htm>
- Water Use Registration & Reporting Program:
<http://des.nh.gov/organization/divisions/water/dwgb/dwspp/wurrrp/index.htm>

Other Potentially Required Permits:

- Registration of Aboveground Petroleum Storage Tank (AST Systems):
http://des.nh.gov/organization/commissioner/pip/forms/ast/documents/ast_reg_form.doc
- Construction of New and Substantially Modified Aboveground Petroleum Storage Tank System: <http://des.nh.gov/organization/divisions/waste/orcb/ocs/astp/permit-apst-construction.htm>
- Application for Groundwater management Permit:
<http://des.nh.gov/organization/commissioner/pip/forms/landfills/documents/nhdes-s-02-004.docx>

- Application for Groundwater Management Permit Transfer:
<http://des.nh.gov/organization/commissioner/pip/forms/landfills/documents/nhdes-s-02-011.docx>
- Registration of Underground Storage Tank Systems:
http://des.nh.gov/organization/commissioner/pip/forms/ust/documents/ust_registration.doc
- Application for New and Substantially Modified UST Systems:
http://des.nh.gov/organization/commissioner/pip/forms/ust/documents/ust_application.pdf

NH Geological Survey (bedrock/surficial geology):

High resolution topographic data (LiDAR digital elevation model) are currently available for much of the Southern Section and portions of the White Mountain National Forest (WMNF) Section <http://lidar.unh.edu/map/>. Data for the remaining portions of the proposed project are expected to be available for public access by December 2016. Locations of relict landslide features can be readily interpreted from these data and taken into consideration before construction begins. Potential exists for these features to be destabilized and reactivated such that disturbance should be avoided or minimized to the greatest extent possible.

The *State of New Hampshire Multi-Hazard Mitigation Plan* (Update 2013) recognizes the existence of a zone of increased seismic activity that extends from north of the Lakes Region south along the Merrimack River into Massachusetts, informally referred to as the Central NH Seismic Zone (CNHSZ). The “probability” of earthquake events is rated as low, but the “severity” and “overall risk” are both rated as high. Although most of the damaging earthquakes in the northeastern U.S. have been in the range of moment magnitude (**M**) 5 to 6, larger events are possible such as the 1638 Central NH earthquake, in a projected range between **M** 6.5 to 7.0. Consideration should be given to the possible impact of such an event on the sustainability of the proposed project, particularly given the location of the proposed Franklin Converter Station. The graphic below, extracted from the 2012 Federal Emergency Management Agency report *HAZUS Analyses of Eleven Scenario Earthquakes in New England*, estimates the ground motion and potential damage that would result from the modern equivalent of such an historic large magnitude event located in the CNHSZ.

0118-1

Thank you for your comment. The commenter’s suggestion regarding an additional source of geological information within the study area is noted and appreciated. The data have been considered, but the analysis in the EIS has not been updated to incorporate it. The EIS analyzes the potential risks to the Project from landslides (see Section 3.1.14) and susceptibility related to landslides (Section 4.2.14). Evaluation of specific depths and the resulting impacts and mitigation at specific locations would be addressed during subsequent federal and state permitting processes, as applicable.

0118-1

0118-2

Thank you for your comment. The commenter’s suggestion regarding an additional source of earthquake information within the project study area is noted and appreciated. The data have been considered, but the analysis in the EIS has not been updated to incorporate it. The EIS analyzes the potential risks to the Project from earthquakes (see Section 3.1.14 and 4.1.14). Evaluation of specific depths and the resulting impacts and mitigation at specific locations would be addressed during subsequent federal and state permitting processes, as applicable.

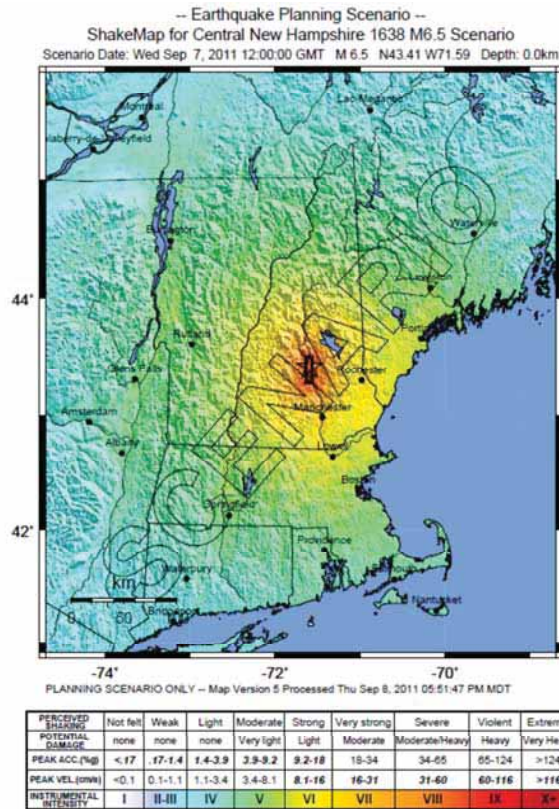
0118-2

0118-2 cont'd

0118-2
Continued

0118-3

Thank you for your comment. The commenter's suggestion regarding an additional source of bedrock data within the project study area is noted and appreciated. DOE deemed the sources of information used related to depth to bedrock sufficient for the EIS analysis (Lyons et al. [1991], Goldthwaite et al. [1951], and Haley & Aldrich, Inc. [2014a, 2014b]). Please refer to Section 1.4.1 of the Geology and Soils Technical Report for a more detailed discussion of depth to bedrock.



An additional data resource that was not cited in either the DEIS or its Supplement is a spatial dataset of estimated depth to bedrock for the Southern Section http://xml2.des.state.nh.us/arcgis/rest/services/aasggeothermal/Merrimack_Depth_to_Bedrock/MapServer. These data could be helpful in informing site specific construction activities and impacts.

0118-3

2. Water Division

Surface Water Use and Water Quality:

The proposed project must comply with New Hampshire surface water quality standards (RSA 485-A:8 (<http://www.gencourt.state.nh.us/rsa/html/L/485-A/485-A-8.htm>) and Env-Wq 1700, <http://des.nh.gov/organization/commissioner/legal/rules/documents/env-wq1700.pdf>). It is NHDES' understanding that the project will require a Section 404 (of the federal Clean Water Act) "individual permit" from the U.S. Army Corps of Engineers (ACOE) for the discharge of dredged or fill material in navigable waters. In accordance with Section 401 (of the federal Clean Water Act) and the state statute (RSA 485-A:12, III, <http://www.gencourt.state.nh.us/rsa/html/L/485-A/485-A-12.htm>), the project will therefore require a Section 401 Water Quality Certification from NHDES (http://des.nh.gov/organization/divisions/water/wmb/section401/permit_wq_certification.htm). Section 401 Water Quality Certifications include any conditions on, modifications to, or monitoring of the proposed project necessary to provide assurance that construction and operation of the project will comply with State surface water quality standards.

Drinking Water & Groundwater Protection:

The provisions to protect groundwater and public and private water supply wells from becoming contaminated by activities and materials associated with rock blasting are not adequate. In New Hampshire, rock blasting has contaminated groundwater obtained from drinking water wells with nitrate, nitrite and volatile organic compounds. The document needs to be revised to include provisions to:

- 1) Always utilize blasting best management practices to prevent the contamination of groundwater;
- 2) Identify wells within 2,000 feet, opposed to 200 feet where blasting will occur. Monitor the water quality (nitrate, nitrite and volatile organic compounds) in representative wells before, during and after rock blasting;
- 3) Identify methods that will be employed to identify private and public water supply wells
- 4) Identify methods that will be employed to address increased turbidity in wells due to excavating bedrock using mechanical or rock blasting methods.

The provisions proposed in the document do not meet the following standard requirements for NH DES's Alteration of Terrain Applications:

(1) Loading practices. The following blast hole loading practices to minimize environmental

0118-4

0118-4

Thank you for your comment. The commenter's observations regarding water quality permitting are noted. Project requirements related to RSA 485 are noted in Appendix F of the EIS. Project requirements related to Section 401 of the federal Clean Water Act (CWA) are noted in Appendix H of the EIS. In the Water Resources Technical Report, Section 1.5 provides additional discussion of federal and state permitting related to water resources, and Section 3 notes the required construction general permit (CGP) issued by the New Hampshire Department of Environmental Services. CGP has related requirements for CWA Section 401 certification. Project requirements related to CWA Section 404 are described in several areas of the EIS (see Sections 1.7.1.3 and 4.1.12.1).

0118-5

0118-5

Thank you for your comment. Updated analyses regarding potential impacts to drinking water supply can be found in Sections 2 and 3 of the Water Resources Technical Report. Potential impacts to drinking water sources from blasting impacts include potential spills or leaks to groundwater wells and are summarized in Section 4.1.13 in the final EIS, with more details provided thereafter under each alternative in each geographic section. The Applicant has committed to preparing a blasting plan to identify appropriate procedures and best management practices (BMPs) to protect groundwater and public and private water supply wells. The blasting plan will include methods that will be employed to identify private and public water supply wells, in addition to methods that will be employed to address increased turbidity in wells due to excavating bedrock using mechanical or rock blasting methods. Appendix H of the final EIS has been revised to reflect these changes. Should the project be approved, specific standards and methods required by the New Hampshire Department of Environmental Services would be established during the subsequent state permitting process.

0118-6

0118-6

Thank you for your comment. Water supply wells were identified within 250 feet of the alternative ROWs and other areas of disturbance as part of the impacts analysis. DOE does not provide information of wells within 2000 feet of where blasting will occur because it is not yet known where blasting will occur. Such specific requirements will be covered by the applicant during the state siting process.

Because large water withdrawals are not anticipated and because New Hampshire BMPs and SPCC plans will be used, impacts to wells along the route are not anticipated from water

withdrawal, erosion, or hazardous waste or fuel spills. Potential impacts to drinking water sources from blasting impacts include potential spills or leaks to groundwater wells and are summarized in Section 4.1.13 in the EIS, with more details provided thereafter under each alternative in each geographic section. With the use of Applicant-Proposed Impact Avoidance and Minimization Measures (APMs), impacts to water resources from construction activities would be avoided or minimized (see Appendix H of the EIS). Updated analyses on potential impacts to drinking water supply can be found Sections 2 and 3 in the Water Resources Technical Report. Should the project be approved, more specific analyses or requirements are within the purview of subsequent state permitting processes and are beyond the scope of this document.

effects shall be followed:

- (a) Drilling logs shall be maintained by the driller and communicated directly to the blaster. The logs shall indicate depths and lengths of voids, cavities, and fault zones or other weak zones encountered as well as groundwater conditions.
- (b) Explosive products shall be managed on-site so that they are either used in the borehole, returned to the delivery vehicle, or placed in secure containers for off-site disposal.
- (c) Spillage around the borehole shall either be placed in the borehole or cleaned up and returned to an appropriate vehicle for handling or placement in secured containers for off-site disposal.
- (d) Loaded explosives shall be detonated as soon as possible and shall not be left in the blast holes overnight, unless weather or other safety concerns reasonably indicate that detonation should be postponed.
- (e) Loading equipment shall be cleaned in an area where wastewater can be properly contained and handled in a manner that prevents release of contaminants to the environment.
- (f) Explosives shall be loaded to maintain good continuity in the column load to promote complete detonation. Industry accepted loading practices for priming, stemming, decking and column rise need to be attended to.

(2) Explosive Selection. The following BMPs shall be followed to reduce the potential for groundwater contamination when explosives are used:

- (a) Explosive products shall be selected that are appropriate for site conditions and safe blast execution.
- (b) Explosive products shall be selected that have the appropriate water resistance for the site conditions present to minimize the potential for hazardous effect of the product upon groundwater.

(3) Prevention of Misfires. Appropriate practices shall be developed and implemented to prevent misfires.

(4) Muck Pile Management. Muck piles (the blasted pieces of rock) and rock piles shall be managed in a manner to reduce the potential for contamination by implementing the following measures:

- (a) Remove the muck pile from the blast area as soon as reasonably possible.
- (b) Manage the interaction of blasted rock piles and storm water to prevent contamination of water supply wells or surface water.

(5) Spill Prevention Measures and Spill Mitigation. Spill prevention and spill mitigation measures shall be implemented to prevent the release of fuel and other related substances to the

0118-6 0118-6 cont'd
Continued

environment. The measures shall include at a minimum:

- (a) The fuel storage requirements shall include:
1. Storage of regulated substances on an impervious surface.
 2. Secure storage areas against unauthorized entry.
 3. Label regulated containers clearly and visibly.
 4. Inspect storage areas weekly.
 5. Cover regulated containers in outside storage areas.
 6. Wherever possible, keep regulated containers that are stored outside more than 50 feet from surface water and storm drains, 75 feet from private wells, and 400 feet from public wells.
 7. Secondary containment is required for containers containing regulated substances stored outside, except for on-premise use heating fuel tanks, or aboveground or underground storage tanks, otherwise regulated.
- (b) The fuel handling requirements shall include:
1. Except when in use, keep containers containing regulated substances closed and sealed.
 2. Place drip pans under spigots, valves, and pumps.
 3. Have spill control and containment equipment readily available in all work areas.
 4. Use funnels and drip pans when transferring regulated substances.
 5. Perform transfers of regulated substances over an impervious surface.
- (c) The training of on-site employees and the on-site posting of release response information describing what to do in the event of a spill of regulated substances.
- (d) Fueling and maintenance of excavation, earthmoving and other construction related equipment will comply with the regulations of the New Hampshire Department of Environmental Services [note these requirements are summarized in WD-DWGB-22-6 Best Management Practices for Fueling and Maintenance of Excavation and Earthmoving Equipment" or its successor document. (see <http://des.nh.gov/organization/commissioner/pip/factsheets/dwgb/documents/dwgb-22-6.pdf>)

Volume 1 – Impact Analyses

Section 3.2.4.2 (page 3-66) mentions potentially contaminated soils and groundwater within 250 feet of the potential project corridor but does not make any reference to how those sites will be addressed to avoid expansion of the affected areas.

Water Supply Impacts

The Water Resources sections of the report do not address water supply watersheds. The assessment regarding water supply impacts for each section of the project (e.g., section 3.2.13)

0118-6 0118-6 cont'd
Continued

0118-7

Thank you for your comment. The EIS acknowledges that there is potential to expose the public or workers to previously unidentified contamination or to mobilize existing contaminants (see Section 3.1.4.2 of the EIS). Section 4.1.4.1 of the EIS describes several measures to avoid and minimize potential adverse impacts.

0118-8

Thank you for your comment. Water supply resources are addressed in Sections 2 and 3 of the Water Resources Technical Report, and Sections 3.1.13 and 4.1.13 of the EIS, with more details provided thereafter under each alternative in each geographic section. Instead of "state well," the term "Public Water Supply well" (PWS well) is now used in Section 3.1.13 of the final EIS, and thereafter under each geographic section. Similar revisions have been made to Section 2 in the Water Resources Technical Report.

0118-7

0118-8

simply lists the number of “federal” and “state” wells, and adds with respect to “state” wells, “wells generally associated with municipalities.” The terminology “state wells” is unclear. This is presumably a reference to public water system (PWS) wells regulated by NHDES under the NH Safe Drinking Water Act and the federal Safe Drinking Water Act, the latter pursuant to federal primacy. This “state well” designation should be clarified in the final EIS.

Rather than identifying and assessing potential impacts to public water supplies, the section on general construction impacts (4.1.13.1, page 4-89), states, “While the data regarding Public Water Supply Sources and Water Supply Intake Protection Areas are not publically available, no impacts to public surface water supplies are expected. The use of APMs (see Appendix H) would minimize impacts to all local water bodies.”

The authors of the EIS should be aware that while the data regarding precise locations of PWS sources are not publicly available, those data are available from DES to those who need it for purposes such as the preparation of environmental assessments. The same is true of data regarding the locations of wellhead protection areas (WHPAs) and water supply watersheds. The EIS should identify WHPAs and water supply watersheds crossed by each alternative and identify how close to each PWS well land will be disturbed by clearing and by construction. For water supply watersheds, the assessment should take into account slopes and soil types where the land will be disturbed and determine whether standard erosion control measures will be adequate to prevent short-term impacts to water quality that could affect water supply treatment processes and/or finished water quality. For PWS wells and their WHPAs, as well as for areas overlying stratified drift aquifers, the assessment should address how close the project’s disturbances will approach those wells and how the risks associated with the project compare with the risks associated with other land uses permitted by right in those areas, based on local zoning. NHDES’s geographic coverage of local land use restrictions in WHPAs and aquifer protection areas can be used for this purpose. The Water Resources Summary Impact Table (Table 2-20 in Volume 1 and Table 19 in the Draft EIS Supplement), and the Disturbance in Locations Overlying Aquifers table (Table S-20 in the Summary report) should include summary data such as:

- Disturbance (area), linear feet of trench, and number and types of structures in WHPAs for PWS wells, calling out structures or facilities that will contain regulated substances as defined in Env-Wq 401.03(h) (<http://des.nh.gov/organization/commissioner/legal/rules/documents/env-wq401.pdf>).
- Disturbance (area), linear feet of trench, and number and types of structures in sanitary protective areas for PWS wells, calling out structures or facilities that will contain regulated substances as defined in Env-Wq 401.03(h). Sanitary protective areas around PWS wells range from 75 to 400 feet from the well.
- Number of private domestic wells within 2,000 feet of the project corridor. (NHDES

0118-8 0118-8 cont'd
Continued

0118-9

Thank you for your comment. Updated analyses on potential impacts to drinking water supply, including the number of public water supply wells, the number of source water protection areas, the number of wellhead protection areas, acres of water supply resources within 250 feet of the study area, and acres of water supply resources within the disturbance areas, can be found in Section 2 and 3 of the Water Resources Technical Report.

0118-9

Similar changes have been made to the final EIS in Sections 3.1.13 and 4.2.13, with more details provided thereafter under each alternative in each geographic section.

0118-10

0118-10

Thank you for your comment. Updated analyses on potential impacts to drinking water supply, including the number of public water supply wells, the number of source water protection areas, the number of wellhead protection areas, acres of water supply resources within 250 feet of the study area, and acres of water supply resources within the disturbance areas, can be found in Section 2 and 3 of the Water Resources Technical Report. Similar changes have been made to the final EIS in Sections 3.1.13 and 4.2.13, with more details provided thereafter under each alternative in each geographic section. DOE did not, however, update its analysis based on the incomplete data set of private domestic wells referenced by the commenter because this level of analysis should occur during the state siting process between NPT and NH DES.

maintains an incomplete database of private well locations, so the count would not be complete, although it would be useful as a relative indicator of each alternative's potential impact on private wells.) NHDES also has developed a methodology to estimate each parcel that utilizes an on-lot private well. NHDES can provide a GIS shape file showing lots that likely utilize an on-lot well within 2000 feet of the corridor.

- A discussion about how utility corridor vegetation maintenance will be completed over the long term and measures that will be implemented to protect nearby private and public drinking water supplies.

Volume 2 – Appendices

APPENDIX H: APPLICANT-PROPOSED IMPACT AVOIDANCE AND MINIMIZATION MEASURES

Water Resources and Floodplains are addressed on page H-8. The document states, "Applicable BMPs and specific measures to minimize and avoid impacts on waterbodies will be established during the permit application process in consultation with state and federal agencies. The Project will be constructed, operated, and maintained in accordance with federal and state permits." This should be revised to include BMPs to avoid impacts to groundwater, including the BMPs specified in NH Code of Administrative Rules Env-Wq 401, since those BMPs might not be required by permits but are required by rule. This should also be amended to include measures described in NHDES report WD-10-12, "Rock Blasting and Water Quality Measures That Can Be Taken To Protect Water Quality and Mitigate Impacts" (NHDES, 2010, <http://des.nh.gov/organization/commissioner/pip/publications/wd/documents/wd-10-12.pdf>). Documents associated with the EIS do not address the potential of contaminating private or public drinking water supply wells with chemicals used in explosives to blast rock; this should be addressed.

Terrain Alteration

The selected alternative will need to submit an Alteration of Terrain Permit (AoT) application and meet the requirements of Env-Wq 1500 (<http://des.nh.gov/organization/commissioner/legal/rules/documents/env-wq1500.pdf>) relative to the protection of drinking water supplies, surface waters, and groundwater.

Alteration of Terrain guidance: <http://des.nh.gov/organization/divisions/water/aot/index.htm>

0118-10 0118-10 cont'd
Continued

0118-11

Thank you for your comment. Appendix H of the EIS includes a list of Applicant-Proposed Impact Avoidance and Minimization Measures considered in the EIS process. The analysis of potential impacts in this EIS assumes that these measures would be applied during implementation of the Project, if approved. The measure noted in the comment was identified and proposed by NHDES; no changes have been made to Appendix H in response to this comment. NHDES can require additional measures through their permitting process. DOE's and USFS's decisions would be conditioned on the implementation of these APMs, as well as any other requirements identified by other permitting processes (including the New Hampshire Site Evaluation Committee review, consultation with the U.S. Fish and Wildlife Service, etc.). Updated analyses regarding potential impacts to drinking water supply can be found in Sections 2 and 3 of the Water Resources Technical Report. Potential impacts to drinking water sources from blasting impacts include potential spills or leaks to groundwater wells and are summarized in Section 4.1.13 in the final EIS, with more details provided thereafter under each alternative in each geographic section.

0118-11

0118-12

Thank you for your comment. Section 1.5.2.3 of the Water Resources Technical Report describes the requirements of New Hampshire's Alteration of Terrain program.

0118-12

Storm Water Management :

1. Storm water discharges to surface waters from construction sites disturbing of an acre or more, or phased construction eventually exceeding one acre, will require coverage under the EPA's Construction General Permit (CGP) – See <https://www.epa.gov/npdes/stormwater-discharges-construction-activities#cgp>.
2. Construction dewatering discharges to surface waters at uncontaminated sites are authorized under the CGP (see applicable permit conditions). For any sites without CGP coverage authorization would be needed under the Construction Dewatering General Permit (DGP) – See <https://www3.epa.gov/region1/npdes/dewatering.html>.
3. Construction dewatering discharges to surface waters at contaminated sites must be authorized under the Remediation General Permit (RGP) – See <https://www3.epa.gov/region1/npdes/rgp.html>.
4. In addition to obtaining the permits as described above, persons planning construction activities and related discharges to surface waters through municipal (includes town, county and state owned) separate storm sewer systems (MS4) should contact the entity (e.g., town, NHDOT) with coverage under the Municipal Separate Storm Sewer System General Permit (MS4GP – See https://www3.epa.gov/region1/npdes/stormwater/MS4_2013_NH.html) for any additional requirements. For a list of communities with MS4 discharges authorized under the MS4GP see page 3 of the NHDES' Fact Sheet titled "Federal Storm water Permits" at <http://des.nh.gov/organization/commissioner/pip/factsheets/wwt/documents/web-8.pdf>.

Wetlands

Please note that NHDES' comments are based on the assumption that need for the project has been met. Need for the DEIS and project objectives are discussed in the DEIS document, however, NHDES must further evaluate need through review of a detailed Wetlands Permit application submitted in accordance with RSA 482-A and the NEW HAMPSHIRE CODE OF ADMINISTRATIVE RULES Env-Wt 100 through 900.

<http://www.gencourt.state.nh.us/rsa/html/NHTOC/NHTOC-L-482-A.htm>

0118-13

0118-13

Thank you for your comment. The commenter's observations regarding stormwater permitting are noted. Section 4.1 in the EIS states that the construction contractor would be required to implement a Stormwater Pollution Prevention Plan (SWPPP) and the Applicant has committed to implement provisions in the state's manual for utility corridor management under all alternatives. In the Water Resources Technical Report, Section 1.5 provides additional discussion of federal and state permitting related to water resources, and Section 3 provides information regarding provisions in the required construction general permit (CGP) issued by the New Hampshire Department of Environment Services. These permits have additional measures to protect, monitor, and mitigate potential impacts. The terms and conditions of the CGP would be specified in the SWPPP.

0118-14

Thank you for your comment. The commenter's observation is noted regarding the role of the New Hampshire Department of Environmental Services in the process of project permitting.

0118-14

<http://des.nh.gov/organization/commissioner/legal/rules/index.htm#wetlands>

The submitted DEIS, its Supplement, and associated documents includes acres and types of wetlands and surface waters impacted, but it does not include enough detailed design or construction information to assess compliance with the previously noted Revised Statutes Annotated (RSA) and Administrative Rules. Ultimately the applicant must demonstrate that the proposed action, Alternative 7, (revised Alternative 2) complies with the Statement of Purpose per Administrative Rule Env-Wt 302.01(b) and demonstrate impacts to wetlands, surface waters and banks of surface waters have been avoided, minimized and mitigated in accordance with Env-Wt 302.03. Additionally, the applicant must demonstrate by plan and example that all factors listed in Administrative Rule Env-Wt 302.04 have been considered in the project design in assessing the impact of the proposed project to areas and environments under the department's jurisdiction. Furthermore the chosen alternative has direct wetland impacts that exceed the criteria listed in Administrative Rule Env-Wt 302.03(c) for compensatory mitigation (as currently noted 23 acres of direct wetlands impact) and will require mitigation for the impacts in accordance with Administrative Rule Env-Wt 800.

It is noted in the EIS that complete placement of the 1,200 MW line was not reasonable due to engineering feasibility and cost (due to the need for six conductors for 1,200 MW of transmission and 2 conductors for 1,090 MW of transmission). However, the chosen alternative has been revised to include burial of 52 miles of line underground and reducing the operational capacity of the line from 1,200 MW to 1,090 MW. Given the reduction in operational capacity and the likelihood that the new sections of overhead transmission corridor from Canada to the existing transmission corridor in Dummer, NH, would account for a substantial amount of the projected permanent and secondary wetlands impacts it would now seem prudent to consider additional alternatives to determine if that would reduce the total overall wetland impacts. Additional consideration should be given to the burial of the section or sections of line from Canada within existing roadway corridors to the overhead corridor just off of Route 110 in Northumberland. In addition, if moving this section of line to existing roadway corridors is still found to be unreasonable consideration should be given to converting the new overhead transmission corridor to a smaller underground transmission corridor.

It is not clear from review of the DEIS why the transmission line is crossing into the United States at the proposed location. What is the basis for choosing the current crossing location? Are there lesser impacting alternatives for the border crossing (e.g., entering the US further south through Vermont along Route 253 to Route 3 in New Hampshire)?

It appears through review of the DEIS that impacts to "Water Resources" are reduced when the line is buried underground. Specifically direct impacts to wetlands appear to be significantly

0118-15

0118-15

Thank you for your comment. The commenter's concerns are related to the project proponent's application to the New Hampshire Site Evaluation Committee (SEC). The SEC process is separate from, and beyond scope of, this NEPA EIS analysis. However, Section 1.5.2 in the Water Resources Technical Report has been revised to include additional information pertaining to state permitting requirements.

0118-16

Thank you for your comment. Northern Pass has applied to the Department of Energy for a Presidential permit for an HVDC transmission line that would run from Quebec, Canada to Deerfield, NH. Executive Order (EO) 10485, as amended by EO 12038, "requires that executive permission be obtained for the construction and maintenance at the borders of the United States of facilities for the exportation or importation of electric energy."

0118-16

DOE is authorized to "receive applications for the construction, operation, maintenance, or connection, at the borders of the United States, of facilities for the transmission of electric energy between the United States and a foreign country[,]" and "[u]pon finding the issuance of the permit to be consistent with the public interest, and, after obtaining the favorable recommendations of the Secretary of State and the Secretary of Defense thereon, to issue to the applicant, as appropriate, a permit for [the] construction, operation, maintenance, or connection." (EO 10485). DOE, however, does not have siting authority for the Project. In this case, the New Hampshire Site Evaluation Committee has siting authority for the Project in the state of New Hampshire. Additionally, the USFS has siting authority for portions of the Project located in the White Mountain National Forest. (For further discussion, see Sections 1.1-1.3 of the final EIS.) While DOE's authority is limited to the approval or denial of the amended Presidential permit application (August 2015) as requested by the Applicant, DOE's policy is to analyze not only the proposed border crossing, but also the alignment of new infrastructure required between the proposed border crossing and connection to the existing U.S. electricity system as a connected action. In keeping with this policy, DOE analyzed the potential environmental impacts of the alignment proposed by the Applicant. In addition, in response to input from Cooperating Agencies, other agencies, and extensive public comment, DOE analyzed a range of reasonable alternatives including other alignments and underground and overhead configurations between the proposed border crossing and connection with the existing U.S. electricity system. The EIS analyzes in detail the No Action Alternative and eleven action alternatives including road

0118-17

0118-18

burials involved in alternatives 4a, 4b, 4c, 5a, 5b, 5c and 6a and 6b. Potential wetland impacts are discussed for each alternative in each geographic section in the EIS. Additionally, seventeen alternatives were considered but eliminated from detailed analysis. Section 2.4 of the final EIS has been updated with additional information on alternatives considered but eliminated from detailed analysis.

0118-17

Thank you for your comment. Northern Pass has applied to the Department of Energy for a Presidential permit for an international border crossing associated with an HVDC transmission line that would run from Quebec, Canada to Deerfield, NH. Executive Order (EO) 10485, as amended by EO 12038, "requires that executive permission be obtained for the construction and maintenance at the borders of the United States of facilities for the exportation or importation of electric energy." DOE is authorized to "receive applications for the construction, operation, maintenance, or connection, at the borders of the United States, of facilities for the transmission of electric energy between the United States and a foreign country[.]" and "[u]pon finding the issuance of the permit to be consistent with the public interest, and, after obtaining the favorable recommendations of the Secretary of State and the Secretary of Defense thereon, to issue to the applicant, as appropriate, a permit for [the] construction, operation, maintenance, or connection." (EO 10485). DOE, however, does not have siting authority for the Project. In this case, the New Hampshire Site Evaluation Committee has siting authority for the Project in the state of New Hampshire. Additionally, the USFS has siting authority for portions of the Project located in the White Mountain National Forest. (For further discussion, see Sections 1.1-1.3 of the final EIS.) While DOE's authority is limited to the approval or denial of the amended Presidential permit application (August 2015) as requested by the Applicant, DOE's policy is to analyze not only the proposed border crossing, but also the alignment of new infrastructure required between the proposed border crossing and connection to the existing U.S. electricity system as a "connected action" under NEPA. In keeping with this policy, DOE analyzed the potential environmental impacts of the alignment proposed by the Applicant. In addition, in response to input from Cooperating Agencies, other agencies, and extensive public comment, DOE analyzed a range of other alignments and underground and overhead configurations between the proposed border crossing and connection with the existing U.S. electricity system. The EIS analyzes in detail the No Action Alternative and

eleven action alternatives. Additionally, seventeen alternatives were considered but eliminated from detailed analysis. Section 2.4 of the final EIS has been updated with additional information on alternatives considered but eliminated from detailed analysis. Among these alternatives, DOE considered two alternate border crossings. One was an alternative that would utilize the existing National Grid Phase I/II route, including its border crossing in Vermont. Based on its review of the National Grid alternative DOE determined that this alternative is not reasonable. Section 2.4.3 of the final EIS has been updated with additional information related to the National Grid alternative. Separately, in response to comments received on the draft EIS, DOE considered a second alternative border crossing in Vermont, specifically identified as a border crossing at Derby Line, VT that would utilize I-91. DOE determined that this alternative is not reasonable. Section 2.4.17 of the final EIS has been added to reflect consideration of this alternative and DOE's determination.

0118-18

Thank you for your comment. The EIS analyzes a reasonable range of alternatives and analyzes estimates of wetland impacts for each alternative.

reduced as more line is constructed underground. Therefore there may be additional alternatives as previously discussed that could have lesser impacts to areas and environments under the department's jurisdiction which are also reasonable when considering cost and engineering feasibility. The department will reserve further comment on the DEIS until the additional alternatives have been investigated.

Shoreland Protection:

RSA 483-B (<http://www.gencourt.state.nh.us/rsa/html/NHTOC/NHTOC-L-483-B.htm>), New Hampshire's Shoreland Water Quality Protection Act establishes protected shorelands around certain surface waters. Those waters that are relevant given the path of this project are lakes and ponds over 10 acres in size, fourth order or larger rivers, and rivers designated in accordance with RSA 483. Within those protected shorelands RSA 483-B:9, V, (a) and (b) requires the maintenance of vegetated buffers within 150 feet of the edge of the surface water, known as the "reference line." Paragraph (a) requires that all groundcover and a sufficient number of trees and saplings to meet an established minimum standard be maintained within 50 feet of the reference line. Paragraph (b) requires that vegetation within at least 25% of the area between 50 feet and 150 feet from the reference line be retained and allowed to growth with only that interference necessary to maintain plant health.

This project will pass through the protected shorelands and buffers of multiple jurisdictional waters within each of the project segments. The nature of the project and the structures being installed is such that, where it passes through protected shorelands, some groundcover vegetation may be lost or temporarily removed and the tree and sapling stratum of the buffer will be permanently removed. These buffer impacts will exceed the minimum standards of RSA 483-B:9 and will have adverse effects in the form of habitat loss, localized water temperature increases, and loss of shoreline stability provided by deep-rooted vegetation. Having acknowledged the probability of these effects it must be noted that RSA 483-B:9, IV-b, allows that public utility lines and associated structures and facilities be permitted by the Commissioner of NHDES as necessary and consistent with the purposes of this chapter and other state law. Thus, the law recognizes that such projects cannot meet the strict requirements of the law but that should not preclude their permitting. Provided the applicant takes particular care to maintain those portions of the vegetated buffer that do not pose a hazard to the maintenance and function of the proposed structures, and similarly meets the remaining minimum standards related to among other things, erosion and siltation, development, and impervious surfaces to the best of their ability, then necessary approvals under RSA 483-B can be obtained.

0118-18 0118-18 cont'd
 Continued

0118-19

Thank you for your comment. The commenter's observation regarding provisions in RSA 483-B related to public utility lines is noted. Section 1.7.2 in the EIS discusses a variety of federal and state permits required for the Project, including compliance with the New Hampshire Shoreland Water Quality Protection Act (see Table 1-1). See Section 1.5.2 in the Water Resources Technical Report for additional discussion of state permitting related to water resources. Section 4.1.13 of the EIS describes, in general, potential impacts to water resources from the Project, with more detail provided under each alternative in each geographic section. Best management practices intended to avoid or minimize impacts to these resources are included in those and related geographic sections, as well as in Appendix H of the EIS. Impacts to vegetation (Section 4.1.12 of the EIS) and geology and soils (Section 4.1.14.1 of the EIS) also discuss issues related to water resource protection.

0118-19

3. Waste Management Division

The concerns identified relative to the purview of the Waste Management Division programs are essentially the same regardless of the alternative proposed or selected. Therefore, little to no alternative specific-comments are provided in this section of this document.

Solid Waste Management:

All Alternatives presented in the DEIS, SEIS and associated documents involve the potential for encountering or generating solid wastes during construction and maintenance activities. All solid wastes generated as a result of construction and maintenance activities must be managed in accordance with the New Hampshire Solid Waste Rules. Portions of each Alternative have the potential to encounter solid wastes on or beneath the ground surface that will have to be managed and properly disposed. The potential for encountering deposited (aboveground) or buried solid wastes is greater in areas of higher population density and along the more developed and travelled portions of the roadway system. Solid waste also includes soils with contamination as defined in Env-Or 602.07

(<http://des.nh.gov/organization/commissioner/legal/rules/documents/env-or600.pdf>) that are not otherwise classified as a hazardous waste. All soils with contamination as defined in Env-Or 602.07 that are excavated must be managed in accordance with the requirements of Env-Sw 903 unless the soils are being managed on-site pursuant to Env-Or 600 (Contaminated Site Management). Env-Sw 900 and Part Env-Sw 903 can be downloaded at: <http://des.nh.gov/organization/commissioner/legal/rules/documents/env-sw900.pdf>.

Contaminated soils include soils with contaminants present at concentrations above the Soil Remediation Standards (SRS) established in Env-Or 600, regardless of whether the soils are subject to a background exemption under Env-Or 600, and soils with contaminants present at concentrations between the naturally occurring background concentration and the SRS. Construction activities along the selected Project corridor will likely involve a certain degree of cut and fill to facilitate installation of transmission towers, burial of transmission lines, construction of access roads and utility equipment pads and the generation of excess soils associated with construction activities. It is important that all generated soils are characterized relative to the presence or likely presence of contaminants prior to the transport of generated soils for disposal or reuse as general construction fill within the Project corridor or elsewhere. The source and quality of all soil imported for use as general fill for the Project should be evaluated prior to transportation or acceptance for use within the Project limits.

Please note that roadside soils have been shown to commonly contain polynuclear aromatic hydrocarbons (PAHs), petroleum hydrocarbons, and various metals at concentrations at

0118-20

Thank you for your comment. Information pertaining to state regulation ENV-SW 900 has been added to Section 1.5.2 of the Public Health and Safety Technical Report. Section 4.1.4.1 in the EIS acknowledges that there is potential to expose the public or workers to previously unidentified contamination, or to mobilize existing contaminants. Appendix H of the EIS includes a list of Applicant-Proposed Impact Avoidance and Minimization Measures considered in the EIS process. The analysis of potential impacts in this EIS assumes that these measures would be applied during implementation of the Project, if approved. The construction contractor would be required to comply with the appropriate state and federal regulations, including those for hazardous waste and petroleum products. In addition, the construction contractor would be required to implement a stormwater pollution prevention plan. The measure noted in the comment was identified and proposed by NHDES; no changes have been made to Appendix H in response to this comment. NHDES can require additional measures through their permitting process. DOE's and USFS's decisions would be conditioned on the implementation of the APMs in Appendix H, as well as any other requirements identified by other permitting processes (including the New Hampshire Site Evaluation Committee review, consultation with the U.S. Fish and Wildlife Service, etc.).

0118-20

concentrations above the naturally occurring background, and in some cases above the SRS, which would cause these soils to be viewed as solid waste and a potential source for groundwater or surface water contamination. Similarly, pesticides and herbicides may be present in soils from agricultural land at concentrations that would cause the soils to be characterized as “solid waste.”

Project guidance should be developed for the evaluation of the quality of excess soil or fill likely to be encountered within the Project corridor and the quality of miscellaneous granular fill being imported to the Project. Similarly, a generic soil management plan should be prepared for the project that establishes appropriate procedures for pre-excavation assessment, segregation of clean soils and potentially contaminated soils, and proper management of contaminated soils to prevent release of contaminants to the ground surface, subsurface, or atmosphere.

There exists the potential for waste, including asbestos waste and other discarded materials, to be buried within the Northern Pass corridor. For example, asbestos waste is known to be buried in some areas along the Interstate Route 93 right-of-way and at some exits, as well as within some minor road rights-of-way located principally in Nashua and Hudson, New Hampshire. This is a precautionary note to identify known sites before commencing work and to handle these materials properly according to *New Hampshire Solid Waste Management Rules*, whether encountered at a known or unknown site. Compliance with the New Hampshire Solid Waste Rules is the responsibility of project officials (<http://des.nh.gov/organization/commissioner/legal/rules/index.htm#solid>). In instances where asbestos-containing materials are encountered or disturbed along the proposed right-of-way, construction officials should be made aware that proper handling of these wastes is required. See also (<http://des.nh.gov/organization/divisions/waste/orcb/prs/adsp/index.htm>).

Applicable Waste Management Administrative Rules:

- [Env-Hw 400 Identification & Listing of Hazardous Wastes:](http://des.nh.gov/organization/commissioner/legal/rules/documents/env-hw400.pdf)
- [Env-Hw 500 Requirements for Hazardous Waste Generators:](http://des.nh.gov/organization/commissioner/legal/rules/documents/env-hw500.pdf)
- [Env-Or 300 Aboveground Petroleum Storage Facilities:](http://des.nh.gov/organization/commissioner/legal/rules/documents/env-or300.pdf)
- [Env-Or 400 Underground Storage Tank Program:](http://des.nh.gov/organization/commissioner/legal/rules/documents/env-or400.pdf)
- [Env-Or 600 Contaminated Site Management: Env-Or 600 Contaminated Site Management](#)
- [Env-Sw 900 Management of Certain Wastes: Env-Sw 900 Management of Certain Wastes](#)

Health and Safety Technical Report

Table 10 in Section 2.2.1 of the Health and Safety Technical Report indicates the Ashland Municipal Landfill is located within 88 feet of Alternatives 2, 3, 5a and 5c. Care should be taken not to install transmission towers on the landfill or install buried transmission lines across the closed landfill.

Hazardous Waste Management:

As stated in the DEIS and its Supplement, hazardous wastes may be encountered during construction activities if contaminated soils or groundwater are encountered that meet the regulatory definition of hazardous waste. Also, the DEIS and its Supplement indicate that there is a potential that hazardous wastes may be produced or released as part of future construction and maintenance activities. Hazardous wastes must be managed in accordance with applicable requirements of the *New Hampshire Hazardous Waste Rules* (Env-Hw 100 through Env-Hw 1100, <http://des.nh.gov/organization/commissioner/legal/rules/index.htm#waste>). Project guidance and best management practice guidance should be prepared prior to the start of construction activities.

Contaminated Sites/Remediation/Petroleum Storage:

All Alternatives presented in the DEIS, Supplement and associated documents involve the potential for encountering:

- Contaminated soils and groundwater associated with known or previously unidentified contaminated sites, petroleum storage facilities, and hazardous waste storage facilities;
- Contaminated soils consisting of urban background soils and fill; and
- Unregistered underground and aboveground petroleum storage facilities.

These environmental hazards may potentially be encountered during construction and land preparation activities that involve excavation, drilling or other subsurface activities associated with the construction of aboveground or underground transmission lines as well as ground surface grading for equipment pad construction and access road construction. These activities may also encounter soil vapor contamination associated with nearby contaminated soil and groundwater. Construction of subsurface transmission lines may inadvertently result in preferential migration of soil vapor contamination via buried utility backfill media when project

0118-21

Thank you for your comment. Potential impacts related to the Ashland Municipal Landfill are discussed specifically in Section 3.3.2.1 in the Public Health and Safety Technical Report, and more generally in Section 4.1.4.1 of the EIS. As noted in Section 2.3.1, Table 10, of the Public Health and Safety Technical Report, the Project would cross within 48 feet of the landfill, but it is unknown at this time whether subsurface disturbance and excavation would occur at this specific location. As stated in the Technical Report, further investigation may be required at this site to determine whether there could be subsurface contamination where excavation or construction would take place. Additionally, both the Technical Report and EIS state the impact of unearthing or mobilizing contamination during construction would depend upon what was encountered; however, with the proper planning, precautions, and training, impacts would be short-term and localized.

0118-21

0118-22

0118-22

Thank you for your comment. Information pertaining to state regulation ENV-SW 900 has been added to Section 1.5.2 of the Public Health and Safety Technical Report. Section 4.1.4.1 in the EIS acknowledges that, during construction, there is potential to expose the public or workers to previously unidentified contamination, or to mobilize existing contaminants. Previously contaminated soils would be avoided to the extent practicable. The Applicant would avoid siting structures in known locations that currently have or historically may have had soil or groundwater contamination. Compliance with state regulations is explicitly stated in Appendix H of the EIS. Where disturbance and excavation of previously contaminated soils and groundwater cannot be avoided, potentially adverse impacts would be avoided or minimized using Applicant-Proposed Impact Avoidance and Minimization Measures (see Appendix H of the EIS). The construction contractor would be required to comply with the appropriate state and federal regulations, including those for hazardous waste and petroleum products. In addition, the construction contractor would be required to implement a stormwater pollution prevention plan.

0118-23

The measure noted in the comment was identified and proposed by NHDES; no changes have been made to Appendix H in response to this comment. NHDES can require additional measures through their permitting process. DOE's and USFS's decisions would be conditioned on the implementation of these APMs, as well as any other requirements identified by other permitting processes (including the New Hampshire Site

Evaluation Committee review, consultation with the U.S. Fish and Wildlife Service, etc.).

0118-23

Thank you for your comment. Section 4.1.4.1 in the EIS acknowledges that, during construction, the potential exist to expose the public or workers to previously unidentified contamination, or to mobilize existing contaminants. Proactive investigation of potentially contaminated sites and implementation of a plan for training construction workers about the appropriate protocols to undertake when contamination is exposed, would minimize potential impacts.

construction is located in proximity to contaminated soil or a groundwater contamination plume.

The potential for encountering contaminated soil, groundwater and soil vapor is greater in areas of higher population density and along the more developed portions of the roadway system where the Project corridor passes through commercially and industrially developed areas and along developed portions of the Project corridor where transmission lines are proposed to be placed underground.

Project guidance should be developed for conducting environmental assessments of portions of the Project corridor prior to the initiation of construction activities. Project guidance should be developed for the evaluation of the quality of soil, fill and groundwater likely to be encountered within the Project corridor. Similarly, a generic soil and groundwater management plan should be prepared for the project that establishes appropriate procedures for pre-excavation assessment, segregation of clean soils and potentially contaminated soils, and proper management of contaminated soils and groundwater to prevent release of contaminants to the ground surface, subsurface, or atmosphere. Contaminated soils and groundwater must be managed in accordance with the requirements of Env-Hw 400, Env-Hw 500, Env-Or 600 and Env-Sw 900, as appropriate based on the nature of the contamination encountered.

Section 3.3.4.2 of the DEIS indicates that Circle Tri-Cleaners (located in Plymouth) would be within the disturbance area for Alternative 4c. Circle Tri-Cleaners is a former dry cleaning site where the dry cleaning solvent tetrachloroethene (PCE) was released. A considerably large dissolved groundwater contamination plume extends toward the east from the site. There are also several petroleum contamination sites located east and northeast of the Circle Tri-Cleaners site. Shallow bedrock and groundwater in this area represent a significant potential for encountering soil vapor contamination and potential creation of a preferential soil vapor migration pathway if underground utilities are installed in proximity to these properties.

If pre-excavation historical property reviews indicate past site use for vehicle repair businesses or auto salvage yards, subsequent environmental assessments should include assessment for the presence of polychlorinated biphenyls (PCBs) in addition to volatile organic compounds and petroleum hydrocarbons. PCBs are known to have been present in hydraulic fluids associated with vehicles and vehicle lift pistons.

Nonregistered or abandoned underground storage tanks associated with historical land use are occasionally encountered across the state. When encountered, these underground storage tanks are commonly associated with previously existing structures or previously existing gasoline stations. Historical site use assessments including a review of local municipal records

0118-23 0118-23 cont'd
Continued

0118-24

Thank you for your comment. Information pertaining to state regulations ENV-HW 400, ENV-HW 500, and ENV-SW 900 has been added to Section 1.5.2 of the Public Health and Safety Technical Report. Previously contaminated soils would be avoided to the extent practicable. The Applicant would avoid siting structures in known locations that currently have or historically may have had soil or groundwater contamination. Where disturbance and excavation of previously contaminated soils and groundwater cannot be avoided, potentially adverse impacts will be avoided or minimized using Applicant-Proposed Impact Avoidance and Minimization Measures (see Appendix H in the final EIS). The construction contractor would be required to comply with the appropriate state and federal regulations, including those for hazardous waste and petroleum products.

0118-24

0118-25

The measure noted in the comment was identified and proposed by NHDES; no changes have been made to Appendix H in response to this comment. NHDES can require additional measures through their permitting process. DOE's and USFS's decisions would be conditioned on the implementation of these APMs, as well as any other requirements identified by other permitting processes (including the New Hampshire Site Evaluation Committee review, consultation with the U.S. Fish and Wildlife Service, etc.).

0118-26

0118-25

Thank you for your comment. Previously contaminated soils would be avoided to the extent practicable. The Applicant would avoid siting structures in known locations that currently have or historically may have had soil or groundwater contamination. Where disturbance and excavation of previously contaminated soils and groundwater cannot be avoided, potentially adverse impacts will be avoided or minimized using Applicant-Proposed Impact Avoidance and Minimization Measures (see Appendix H in the final EIS). Site-specific procedures would be addressed in subsequent federal and state permitting processes that are beyond the scope of this analysis.

0118-26

Thank you for your comment. Further investigation may be required at known or suspected contamination sites near the project to determine whether contamination exists in likely

excavation or construction areas (see Sections 3.3 and 3.4 in the Public Health and Safety Technical Report). Section 4.1.4.1 in the EIS indicates that state regulations require that contaminated sites be reported to the New Hampshire Department of Environmental Services management (Env-Or 600). In addition, ENV-1401 has been replaced by ENV-OR 400; ENV-OR 400 has been added to Section 1.5.2 in the Public Health and Safety Technical Report.

(i.e. assessor's records, building permit records and fire department records), NHDES records, and historical Sanborn Fire Insurance Maps should be completed for portions of the Project corridor that pass through commercially or industrially developed areas. Abandoned underground storage tanks commonly contain residual petroleum product, water or flowable fill such as sand or concrete. If encountered, these tanks must be registered with the NHDES and closed in accordance with Env-1401

(<http://des.nh.gov/organization/divisions/waste/orcb/ocs/ustp/documents/tank-closure-guidance.pdf>). Any tank contents must be removed and properly disposed.

Table 11 in Section 2.2.1 of the Health and Safety Technical Report indicates that the Seppala & Aho Brownfields site is located in Woodstock. Please note that the Seppala & Aho site is actually located in New Ipswich and is outside the Project corridor for Alternatives. Similarly, Table 11 indicates the Lamont Laboratories Brownfields site is located in Woodstock but the site is actually located in Londonderry and is outside the Project corridor for all Alternatives. Also, Table 11 indicates the Storrs Street Brownfields site is located in Woodstock but the site is actually located in Concord.

4. Air Resources Division

Air Quality - Environmental Health Program (EHP)

TECHNICAL REPORTS

Public Health and Safety Technical Report for the Draft Environmental Impact Statement

(4017 pages)

Appendix B Technical Report (DRAFT Electric and Magnetic Fields Technical Report for the Environmental Impact Statement) (140/4017)

The **Executive Summary** states that "There are no state or federal exposure limits for power frequency or DC electric or magnetic fields or space charge levels that would apply to the Project. However, two major internationally recognized exposure limits (International Commission on Non-Ionizing Radiation Protection [ICNIRP] and Institute of Electrical and Electronic Engineers [IEEE] C95.6-2002) provide useful references. . . . In all areas outside of the right-of-way (ROW) of the Project, the levels of electric and magnetic fields produced by the Project, together with those from the presently installed transmission lines in much of the

0118-26 0118-26 cont'd
Continued

0118-27

Thank you for your comment. Table 11 in Section 2.3.1 of the Public Health and Safety Technical Report has been revised to reflect that the sites mentioned in the comment are outside of the project corridor for all alternatives included in Table 11 (i.e., sites have been removed from the table).

0118-27

0118-28

Thank you for your comment. ICNIRP and IEEE limits were included in the draft EIS as a point of reference because there are no applicable state or national limits regarding the proposed Project.

0118-28

Project corridor, both AC and DC, would comply with the ICNIRP and IEEE C95.6-2002".
(146/4017)

Comment: The ICNIRP and IEEE guidelines are referenced throughout the Draft EIS relative to evaluating human exposure to electric and magnetic fields. It should be noted that these guidelines were developed to prevent acute hazards such as shocks. As such, these guidelines may be useful but are of limited value for evaluating possible health outcomes. These guidelines are not health-based standards and should not be used in evaluating human health relative to exposure to these fields.

Conclusions DC and AC magnetic fields from the Project at all locations outside of the ROW of the Project would comply with ICNIRP and IEEE C95.6-2002 reference levels for the general population. Based on present knowledge, there would be **no impact** of the Project as related to the AC or DC magnetic fields in any area beyond the ROW. (176/4017)

Comment: As in previous comment, these reference levels are not health-based standards and it is inappropriate to draw conclusions about human health from their use.

Conclusions Based on considerable literature on discharge phenomena beneath HVAC lines, microshocks, possibly at annoying levels, *may* occur with individuals who touch vehicles or other large conductive objects that are parked beneath the lines. Because the Project would comply with NESC (which is designed to protect against hazards related to such effects) any such shocks would be below harmful levels under foreseeable exposure conditions relevant to the general public. (176/4017)

Comment: It is not clear why receiving electrical shocks would not be considered harmful.

Conclusions There is no foreseeable impact of the DC or AC fields from the Project on implanted devices such as pacemakers or implanted cardioverter-defibrillators. However, there have been rare incidents of inappropriate therapy (shocks to the heart) to patients with implanted ICDs due to contact with electrical equipment under ordinary domestic situations, and there is the theoretical chance that such events might occur to an individual beneath one of the Project lines upon touching a conductive object. Given the diversity of implanted medical devices currently in use, it is not possible to rule out the possibility of adverse interference to such devices or inappropriate delivery of therapy to a wearer of an ICD due to contact currents or spark discharge. (177/4017)

Comment: Similar to preceding comment. It isn't clear why receiving an electrical shock to the heart, especially for a heart patient, would not be considered harmful.

0118-28 0118-28 cont'd
Continued

0118-29

Thank you for your comment. ICNIRP and IEEE limits were included in the draft EIS as a point of reference because there are no applicable state or national limits regarding the proposed Project.

0118-30

0118-29 Thank you for your comment. Information regarding shocks has been clarified in Section 4.1.4.2 in the final EIS. These shocks will not induce harmful levels of contact current under foreseeable exposure conditions. "Nuisance shocks" (nonhazardous but unpleasant shocks) might nevertheless occur from contact with a vehicle parked within the ROW in AC field levels that are present beneath some segments of the Northern Pass line.

0118-30

0118-31

Thank you for your comment. As discussed in Section 4.1.4.2 in the EIS, corona discharge has the potential to result in electric shocks to individuals. The project would comply with National Electrical Safety Code (NESC) and health-based exposure guidelines designed to protect against harmful levels of electric shocks. Section 4.5 of the Electric and Magnetic Fields Technical Report (included as Appendix B of the Public Health and Safety Technical Report) explains that the potential for shock to an individual with an ICD is considered rare. Shocks that may occur are described as distressing and uncomfortable to the patient, but not life-threatening.

0118-31

Expert Reviews of Possible Health Effects of Power line Fields

Since the Northern Pass lines will chiefly pass through lightly populated areas, it is highly likely that *no* cases of childhood leukemia would occur in populations close to the lines due to magnetic field exposure. . . . (263/4017)

Comment: What is the basis for this conclusion?

General Comments

Magnetic fields (shielding): All of the proposed alternatives involve burial of transmission lines for at least some portions of the Project length. Although magnetic fields from a transmission line fall off rapidly with increasing distance from the line, extremely low frequency magnetic fields are not shielded by ordinary building materials or other forms of matter. (150/4017)

Comment: Constructing underground transmission lines could have the effect of increasing magnetic field strength closer to the ground surface thereby increasing people's exposure.

Worker Health and Safety: EHP did not review sections of the Draft EIS that considered worker safety issues (construction, infrastructure maintenance, waste handling and disposal, etc.).

Comment: Occupational health and safety issues are the purview of other regulatory agencies (ex. OSHA) and not the Department.

Direct and Indirect Environmental Consequences (55/4017) This section of the Public Health and Safety Technical Report addresses environmental consequences of soil and groundwater contamination associated with the Project. Contamination of the environment can be associated with the following construction activities:

- Use and improper management of hazardous materials, petroleum products
- Disposal of hazardous wastes
- Soil contamination and mobilization of contamination in soil and groundwater
- Contaminated sites

0118-32

Thank you for your comment. Section 4.1.4.2 in the EIS addresses the linkage between magnetic fields and childhood leukemia, and additional details can be found in Appendix B of the Electric and Magnetic Fields Technical Report (included as Appendix B of the Public Health and Safety Technical Report). The World Health Organization and other health agencies have not concluded that exposure to powerline magnetic fields actually does or probably does increase risk of disease, but only that it might. The evidence related to childhood cancer risk and residence near power lines indicates that any increase in risk, if one exists at all, is small. A recent study of risk of childhood leukemia as related to residence near high voltage power lines in California found "a slight excess of cases within 50 m of a transmission line over 200 kV (odds ratio 1.4, 95% confidence interval 0.7–2.7). This excess is not statistically significant, however, and the 'slight excess' is consistent with chance" (see Crespi, C.M. et al. 2016. Childhood Leukemia and Distance from Power Lines in California: A Population-Based Case-Control Study. British Journal of Cancer 115(1):122-8). The Crespi results are consistent with effect sizes ranging from a slight protective effect of living near the power line (odds ratio of 0.7) to nearly threefold increase in relative risk (odds ratio of 2.7). Since childhood leukemia is a rare disease (about 73 cases of any form of cancer are diagnosed every year in children aged 0-19 throughout the entire state of NH, <http://www.dhhs.nh.gov/dphs/hsdm/cancer/documents/childhood.pdf>), the likelihood that any child living within 50 meters of the transmission line developing cancer of any form is small in any event.

0118-32

0118-33

0118-34

0118-35

0118-33

Thank you for your comment. Buried transmission cables will produce magnetic fields in the surrounding environment, but because the conductors are close together, the fields would be small compared to those beneath above-ground lines (see Section 4.1.4.2 in the EIS, and Section 4.1 of the Electric and Magnetic Fields Technical Report (included as Appendix B of the Public Health and Safety Technical Report). Also, the fields would be direct current fields at levels considerably lower than the Earth's magnetic field.

0118-34

Thank you for your comment.

0118-35

Thank you for your comment.

Comment: There are a number of programs within the Department that have the regulatory authority and responsibility to address any potential hazardous waste and groundwater contamination problems associated with construction of the transmission lines. EHP defers to these programs to conduct an appropriate review of these issues.

Appendix H of the DEIS provides information on "**Applicant proposed mitigation measures,**" or APMs. These APMs are cited throughout the main report. The following are questions/comments related to specific APMs:

Appendix H, page H-1: Air quality impacts will generally result from fugitive dust or equipment and vehicle emissions. To minimize short-term adverse effects to air quality during construction, Environmental Monitors will review ongoing activities including, verifying and documenting that appropriate preventative and proactive BMPs are being used and maintained.

Comment: Who will the Environmental Monitors work for and report to? To be effective they should work independently of the developer and report directly to relevant state agencies.

Appendix H, page H-2: Vehicular emissions will be limited by requiring contractors to properly maintain construction equipment and vehicles, and by minimizing diesel construction idling times in accordance with New Hampshire air quality regulations.

Comment: It is not clear how Northern Pass will enforce the idling limitations. NHDES suggests that such limitations be included as a requirement in specifications and contracts for contractors.

GENERAL CONFORMITY:

Pages 2-51; 3-41; 3-43; and w/in each segment/alternative narrative: The DEIS discusses the potential for triggering federal General Conformity requirements as portions of the Southern Section of the project are located in the Central NH SO₂ nonattainment area. For such requirements to be applicable the project would need to have emissions greater than *de minimus* levels.

Comment: The DEIS states SO₂ emissions will be below the de minimus (Tables 4-151; 4-153; 4-154; and 4-155) and therefore general conformity requirements will not apply. While use of ultra-low sulfur diesel fuel is required in all on-road and non-road equipment and therefore emissions are expected to be relatively low, the DEIS does not provide any information regarding how total emission estimates were derived.

0118-35 0118-35 cont'd
Continued

0118-36

Thank you for your comment. Appendix H of the EIS outlines the role of Environmental Monitors, and the logistics of contracting are beyond the scope of this EIS. The monitors would be guided by the requirements included in applicable federal, state, and local permits related to air quality and fugitive dust.

0118-36

0118-37

Thank you for your comment. Appendix H of the EIS includes a list of Applicant-Proposed Impact Avoidance and Minimization Measures considered in the EIS process. The analysis of potential impacts in this EIS assumes that these measures would be applied during implementation of the Project, if approved. These measures were identified and proposed by the Applicant and no changes have been made to Appendix H in response to this comment. NHDES can require different or additional measures through their permitting process. DOE's and USFS's decisions would be conditioned on the implementation of these APMs, as well as any other requirements identified by other permitting processes (including the New Hampshire Site Evaluation Committee review, consultation with the U.S. Fish and Wildlife Service, etc.).

0118-37

0118-38

Thank you for your comment. The methods and assumptions used to calculate total SO₂ emissions are provided in Section 1.4 of the Air Quality and Greenhouse Gas Technical Resource Report, specifically Appendix B of that report. The analysis was based on diesel, not low-sulfur diesel, so the calculations are conservative. This information is summarized within the EIS Air Quality Section, 4.1.10.

0118-38

As everyone now knows my name is Bob Baker. I live in Columbia, New Hampshire. I'd like to take the opportunity to thank Mr. Mills, Mr. Wagner and the others for returning to the North Country one more time. We hope to see you again perhaps under more pleasant circumstances, but it is good to see you. In the next few minutes, I'm only going to talk about one aspect of the Draft EIS, and that is the alternatives. From my perspective, the readily acceptable alternative is alternative 1. No build. First, the power is not needed here. It's not needed in New Hampshire, it's not needed in New England. New Hampshire is a power exporter, and New England's own new power generation and power efficiency initiatives are paying huge dividends. ISO New England reports reflect all this. Northern Pass is not a needed project. They'll tell you right away. They don't qualify. It's not necessary to keep our lights on. We're doing a good job, and if it's going to get better if we stay that way. We need to keep our attention on New England initiatives because they create jobs in New England. They are the industries we have right here at home and we have some control over what we do here at home. More foreign generated power will not help. It will kill jobs and it will take away our power generation self-sufficiency. Second, reliance on more foreign power generated a thousand kilometers away is a threat to our security, both from the occurrences of nature and men. We should never rely on a foreign controlled corporation to supply a significant portion of our power, especially when it depends on 100 miles or a thousand miles or a thousand kilometers of exposed infrastructure that we in this country cannot protect and we in this country cannot maintain. Ice, wind, solar emissions, domestic terrorists, kids with hunting rifles, they have all acted in the last 25 to 30 years to take out Quebec power lines and towers. Do we really think that such events will not occur again in the near future? It could be disastrous for New England. We already rely on ten percent of our power from Quebec. Do we want to increase the danger? I think not. I've not even mentioned the biggest threat of all. Cyber crime. We're going to be hearing more about this from our national security experts, I'm sure. But cyber crimes will undoubtedly take out a major grade one of these days. It's inevitable. Do we really want to trust a foreign government to keep cyber criminals out of computer controlled grids that we have no ability to protect? Third, even if more Canadian power imports might be nice to have in the northeast of this country, there will far better transmission alternatives. Alternate transmission corridors that have been proposed entirely underground or under water or both in Vermont, New York, and Maine. This Northern Pass project as proposed is totally surplus destruction of our precious New England environment using century old technology to erect a visual blight in the form of transmission towers, cables and insulators coursing across hundreds of miles of our priceless landscapes. Other alternatives such as DOE's Alternatives 3, 4 A, 4 B, 4 C, 6 A, 6 B would be more acceptable in New Hampshire, if the project has to go through. Those alternatives bury all or most of the transmission line in already disturbed highway corridors. DOE has determined that the burial technology is both practical and technically feasible. So if it has to come, it should come on one of those burial alternatives. I do have a suggestion and I hope I have a few, maybe one more minute? MR. KERVITSKY: Go ahead. MR. BAKER: I do have a suggestion on how these alternatives could be improved. My suggestion if adopted would also save Northern Pass tens of millions of dollars because it would make the route to southern New Hampshire 6 miles shorter. The project entry point into the United States is in East Hereford, Quebec. It is immediately north of the Beecher Falls section of Canaan, Vermont. The present route for alternatives that I mentioned all take that power line directly to the east to Route 3, and the alternatives would then bury it under Route 3 back to the west into Stewartstown. Pittsburg and Clarksville are both going to be under or would be part of those alternatives. My proposal is to bring it south directly through Beecher Falls and Canaan, Vermont, for 0.3 miles. That would cut out 6 miles of the route all together. It could be buried under the Connecticut

0119-1

Thank you for your comment. The purpose of, and need for, DOE's action is to determine whether or not to grant the requested Presidential permit for the Project, which is a proposed transmission line crossing the international border. As discussed in Section 1.4 of the EIS, Northern Pass set forth a range of project objectives and benefits in its permit application. DOE and the cooperating agencies reviewed this documentation and determined that the project objectives include addressing three primary needs concerning New England's electricity supply: diverse, low-carbon, non-intermittent electricity. Section 2.4 of the EIS discusses alternatives considered but eliminated from further analysis. DOE determined that other transmission projects, power generation alternatives, and energy conservation do not meet the purpose and need for DOE's action. The EIS analyzes in detail the potential environmental impacts of a No Action Alternative and eleven action alternatives. Under the No Action Alternative, it is assumed that existing energy sources, including distributed generation and alternative energy generation, would continue to supply the ISO-NE region and that energy efficiency measures would continue. Section 3.1.2.5 of the EIS discusses the existing condition of Electricity System Infrastructure which would be anticipated to persist under the No Action Alternative.

0119-1

0119-2

0119-2

Thank you for your comment. Section 4.1.4.2 in the EIS and Section 3.1.9 of the Public Health and Safety Technical Report discuss impacts related to intentional destructive acts. Impacts to health and safety from intentional destructive acts would be unlikely to be greater than the potential impacts from events involving extreme weather. If such an act were to occur and to succeed in destroying aboveground infrastructure or other components of the project, the main consequence for the public would be the temporary loss of electrical service from the Project (i.e., the loss of the 1,090 or 1,200 MW supplied by the Project) in the ISO-NE region.

0119-3

Thank you for your comment. Northern Pass has applied to the Department of Energy for a Presidential permit for an HVDC transmission line that would run from Quebec, Canada to Deerfield, NH. Executive Order (EO) 10485, as amended by EO 12038, "requires that executive permission be obtained for the construction and maintenance at the borders of the United States of facilities for the exportation or importation of electric energy." DOE is authorized to "receive applications for the construction, operation, maintenance, or connection, at the borders of the

0119-3

United States, of facilities for the transmission of electric energy between the United States and a foreign country[,]" and "[u]pon finding the issuance of the permit to be consistent with the public interest, and, after obtaining the favorable recommendations of the Secretary of State and the Secretary of Defense thereon, to issue to the applicant, as appropriate, a permit for [the] construction, operation, maintenance, or connection." (EO 10485). DOE, however, does not have siting authority for the Project. In this case, the New Hampshire Site Evaluation Committee has siting authority for the Project in the state of New Hampshire. Additionally, the USFS has siting authority for portions of the Project located in the White Mountain National Forest. (For further discussion, see Sections 1.1-1.3 of the final EIS.) While DOE's authority is limited to the approval or denial of the amended Presidential permit application (August 2015) as requested by the Applicant, DOE's policy is to analyze not only the proposed border crossing, but also the alignment of new infrastructure required between the proposed border crossing and connection to the existing U.S. electricity system as a connected action. In keeping with this policy, DOE analyzed the potential environmental impacts of the alignment proposed by the Applicant. In addition, in response to input from Cooperating Agencies, other agencies, and extensive public comment, DOE analyzed a range of other alignments and underground and overhead configurations between the proposed border crossing and connection with the existing U.S. electricity system. The EIS analyzes in detail the No Action Alternative and eleven action alternatives. Additionally, seventeen alternatives were considered but eliminated from detailed analysis. The commenter seems to suggest an alignment that would cross the international border in Vermont, come through Canaan, Vermont, be buried under the Connecticut River and connect into Route 3 in New Hampshire, and the commenter states that this alignment would shorten the route. The final EIS analyzed several full burial alignments (Alternatives 3, 4a, 4b and 4c) that were designed to address concerns, particularly viewshed concerns, in the Northern Section of the route. DOE also evaluated an alternative that would bury the line under waterbodies including the Connecticut River, and DOE determined that the alternative is not reasonable due to technical issues. See Section 2.4.4 of the final EIS. To the extent the route contemplated by the commenter would cross the border and run through Vermont before interconnecting in New Hampshire, DOE determined that this is not a reasonable alternative. See applicable discussion in Section 2.4.17 of the final EIS.

0119-3 cont'd

0119-3
Continued

River and it would connect into Route 3 in Stewartstown. Clarksville and Pittsburg would not have to use it at all. It's visually the same border crossing except instead of running west to east, it runs north to south. Why hasn't this sensible alternative been explored by Northern Pass and the DOE's environmental impact contractors? I think it's a serious use proposal that should be explored and part of the EIS. Thank you very much.

Northern Pass EIS Website Comment Receipt

Refers to Comment placed on Aug 13, 2015

ID: 8288

Date Entered: Aug 13, 2015

Source: Website

Topics: Alternatives

Organization:

Comment: The DOE DEIS clearly substantiates what those in opposition to the proposed 2,300 steel lattice towers cutting through the heart of New Hampshire have been stating for the past five years, that full burial of the Northern Pass is economically viable and feasible. The fact that Northern Pass executives would rather line their pockets and those of their shareholders with the funds it would cost for burial is simply wrong. These executives can bury the Northern Pass and still reap a substantial profit. Mr. Mills, in your final EIS please use full burial of Northern Pass as the preferred method.

0121-1

Thank you for your comment. The CEQ NEPA regulations (40 CFR §1502.14(e)) require the section of the EIS on alternatives to "identify the agency's preferred alternative if one or more exists, in the draft statement, and identify such alternative in the final statement." CEQ guidance clarifies that "[t]his means that if the agency has a preferred alternative at the Draft EIS stage, that alternative must be labeled or identified as such in the Draft EIS. If the responsible federal official in fact has no preferred alternative at the Draft EIS stage, a preferred alternative need not be identified there." (Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations March 23, 1981, Question 4b). DOE did not have a preferred alternative at the time it issued the draft EIS and supplement to the draft EIS. DOE's preferred alternative, as stated in Sections 1.1.3 and 2.3 of this final EIS, is to grant a Presidential permit to the Applicant for the international border crossing proposed by the Applicant in its Further Amendment to Presidential Permit Application, submitted by Northern Pass to DOE on August 31, 2015. The USFS will identify a preferred alternative in a draft Record of Decision which will be subject to a USFS pre-decisional objection review process (36 CFR Part 218). The identification of a preferred alternative in the final EIS is contemplated by and allowed under the NEPA regulations (40 CFR §1502.14(e)), and does not necessitate the preparation of a Supplemental EIS, as the identification of a preferred alternative in the final EIS does not constitute a "substantial change[s] in the proposed action that [is] relevant to environmental concerns" or a "significant new circumstance[s] or information relevant to environmental concerns and bearing on the proposed action or its impacts." (40 CFR §1502.9(c)(1)(i)-(ii)).

0121-1

Northern Pass EIS Website Comment Receipt

0122-1

Thank you for your comment.

Refers to Comment placed on Aug 13, 2015

ID: 8289

Date Entered: Aug 13, 2015

Source: Website

Topics: Alternatives

Organization:

Comment: The DOE DEIS clearly substantiates what those in opposition to the proposed 2,300 steel lattice towers cutting through the heart of New Hampshire have been stating for the past five years, that full burial of the Northern Pass is economically viable and feasible. The fact that Northern Pass executives would rather line their pockets and those of their shareholders with the funds it would cost for burial is simply wrong. These executives can bury the Northern Pass and still reap a substantial profit. Mr. Mills, in your final EIS please use full burial of Northern Pass as the preferred method.

0122-1

Northern Pass EIS Website Comment Receipt

0123-1
Thank you for your comment.

Refers to Comment placed on Aug 13, 2015

ID: 8290

Date Entered: Aug 13, 2015

Source: Website

Topics: Other

Organization:

Comment: NO to the Northern Pass
NO to the Northern Pass
NO to the Northern Pass
NO to the Northern Pass

0123-1

Good evening. My name is Will Abbott, and I'm here today representing the Society for the Protection of New Hampshire Forests where I serve as Vice Presidents for Policy & Reservation Stewardship. I have comments this evening for the Department of Energy and Draft EIS. I also have comments on here for the SEC on the proposed Northern Pass application, comments to supplement those made by our President/Forester Jane Difley last week in Meredith. I'm going to offer my comments to the DEIS now and respectfully request the opportunity to present an additional three minutes of comments on the SEC issues once all others have had a chance to speak. Concerning the Draft EIS, the Forest Society sees one major flaw that must be corrected in the Final EIS. We believe that the DEIS fails to satisfy the legal requirements of the National Environmental Policy Act because it fails to study more than one international border crossing. NEPA regulations require federal agencies to, and I quote, according to the regulations, identify and assess reasonable alternatives to propose actions that will avoid or minimize adverse effects of these actions upon quality of the human environment. An Environmental Impact Statement is the tool provided by NEPA to study a range of alternatives. The EIS is designed to inform the federal permitting agency as to what the least damaging environmental alternative is for the project. NEPA does not require that the agency choose the least damaging alternative, only that it study a range of alternatives to inform the agency's decision. The DEIS before us today, the draft form, does not study a range of alternatives for the international border crossing. It only studies one crossing alternative, the one presented by the Applicant, and the Applicant's proposal is the one presented by its customer, Hydro-Quebec. We strongly urge the DOE to prepare a Final EIS that studies at least one additional alternative to the Applicant's preferred border crossing. This would correct the flaw, and would better inform the DOE's Presidential permit decision. Given that the Northern Pass changed the size of the facility and the cable technology proposed for this project last summer after the final original EIS work was completed, this is another compelling reason to revisit the issue of options for crossing the international border in the Final EIS. As just one example, if the Final EIS studies an alternative border crossing at Derby Line, Vermont, it could then consider a completely buried facility from Derby Line to either Hartford or Boston or even Deerfield, New Hampshire. This would get electricity to the southern New England markets that Mr. Quinlan explained earlier is a primary objective of Northern Pass. Consider that a buried route along I-91 and I-93, would avoid Coos County completely, and all of the adverse impacts of the current proposal on Coos County. Consider that a buried transmission line down I-91 and I-93 between Derby Line and Exit 40 off Bethlehem, New Hampshire, is ten miles shorter than the current serpentine route through Coos County. Consider that a completely buried line from Derby Line to Deerfield would avoid nearly all of the adverse impacts of the 132 miles of overhead lines currently proposed. Consider that an alternative border crossing at Derby Line would provide an alternative to the Coos County route that may be rendered moot by a property rights lawsuit that we have raised in Coos County Superior Court concerning our land in Clarksville, something which I will discuss later. The point here is that the Draft EIS does not consider any border crossing except the Applicant's proposed crossing at Hall's Stream. In so doing, the EIS draft fails to meet the primary statutory objective of NEPA and fails to fully inform the DOE on the decision ahead of it concerning the Presidential permit. This is precisely -- MR. HONIGBERG: Mr. Abbott, how much more do you have? SPEAKER: One sentence. This is precisely why NEPA requires a range of alternatives to be studied in the first place. The Final EIS should study more than one border crossing, and we strongly encourage you to consider studying this additional crossing at Derby Line, Vermont. Thank you.

0125-1

Thank you for your comment. Northern Pass has applied to the Department of Energy for a Presidential permit for an international border crossing associated with an HVDC transmission line that would run from Quebec, Canada to Deerfield, NH. Executive Order (EO) 10485, as amended by EO 12038, "requires that executive permission be obtained for the construction and maintenance at the borders of the United States of facilities for the exportation or importation of electric energy." DOE is authorized to "receive applications for the construction, operation, maintenance, or connection, at the borders of the United States, of facilities for the transmission of electric energy between the United States and a foreign country[,]" and "[u]pon finding the issuance of the permit to be consistent with the public interest, and, after obtaining the favorable recommendations of the Secretary of State and the Secretary of Defense thereon, to issue to the applicant, as appropriate, a permit for [the] construction, operation, maintenance, or connection." (EO 10485). DOE, however, does not have siting authority for the Project. In this case, the New Hampshire Site Evaluation Committee has siting authority for the Project in the state of New Hampshire. Additionally, the USFS has siting authority for portions of the Project located in the White Mountain National Forest. (For further discussion, see Sections 1.1-1.3 of the final EIS.) While DOE's authority is limited to the approval or denial of the amended Presidential permit application (August 2015) as requested by the Applicant, DOE's policy is to analyze not only the proposed border crossing, but also the alignment of new infrastructure required between the proposed border crossing and connection to the existing U.S. electricity system as a "connected action" under NEPA. In keeping with this policy, DOE analyzed the potential environmental impacts of the alignment proposed by the Applicant. In addition, in response to input from Cooperating Agencies, other agencies, and extensive public comment, DOE analyzed a range of other alignments and underground and overhead configurations between the proposed border crossing and connection with the existing U.S. electricity system. The EIS analyzes in detail the No Action Alternative and eleven action alternatives. Additionally, seventeen alternatives were considered but eliminated from detailed analysis. Section 2.4 of the final EIS has been updated with additional information on alternatives considered but eliminated from detailed analysis. Among these alternatives, DOE considered two alternate border crossings. One was an alternative that would utilize the existing National Grid Phase I/II route, including its border crossing in Vermont. Based on its review of the National Grid alternative DOE determined that this alternative is not reasonable. Section

0125-1

2.4.3 of the final EIS has been updated with additional information related to the National Grid alternative. Separately, in response to comments received on the draft EIS, DOE considered a second alternative border crossing in Vermont, specifically identified as a border crossing at Derby Line, VT that would utilize I-91. DOE determined that this alternative is not reasonable. Section 2.4.17 of the final EIS has been added to reflect consideration of this alternative and DOE's determination.

Northern Pass EIS Website Comment Receipt

0128-1

Thank you for your comment.

Refers to Comment placed on Jul 27, 2015

ID: 8232

Date Entered: Jul 27, 2015

Source: Website

Topics: Alternatives

Organization:

Comment: Overhead power lines are nineteenth century technology. Modern technology is burial along state approved rights of way. There is simply no valid excuse for not using the latest technology, which eliminates harm to our communities. Eversource should be made to bury its proposed Northern Pass project or they should be denied a permit to build at all.

0128-1

Northern Pass EIS Website Comment Receipt

0129-1

Thank you for your comment.

Refers to Comment placed on Jul 28, 2015

ID: 8233**Date Entered:** Jul 28, 2015**Source:** Website**Topics:** Viewshed/Scenery**Name:** Jan Marvel**Organization:** Indian Stream Productions**Email:** agreconds@roadrunner.com**Mailing Address:** 2524 NH RT 175**City:** Thornton**State:** NH**Zip:** 03285**Country:** US

Comment: When I purchased my property in the mid-eighties, I was well aware that a ROW was in the vicinity. I knew where it was and I felt okay with that. I found myself saying often "I'm okay with that, but I wouldn't want to it to be any closer."

Of course I never imagined it could become much larger. That would have been a deal breaker for sure. My decision to purchase this land was based on the beauty of the location. I have paid my taxes and I have been a law abiding citizen. I simply don't deserve to have to look at hideous, ancient, out-modes because greedy corporations want to save money. The first hydro electric dam was built 133 years ago using the same basic technology that Hydro-Quebec wants to use today. I don't deserve to have my town, my property and my state look like New Jersey so that Tom May, CEO of 'Eversource' can take another multi million dollar raise!

0129-1

Northern Pass EIS Website Comment Receipt

Refers to Comment placed on Jul 28, 2015

ID: 8234

Date Entered: Jul 28, 2015

Source: Website

Topics: Alternatives, Viewshed/Scenery, Forest Service Lands, Environmental Justice

Name: Orzeck

Organization:

Country: US

Comment: I feel the project should be underground all the way, but I do have to ask: How is it that going underground through the Connecticut Headwaters Tract violates the terms of the agreement, yet overhead is still an option?

0130-1

Thank you for your comment. As noted in the Land Use Technical Report, data from the Complex Systems Research Center at the University of New Hampshire was utilized to identify conserved land parcels in or adjacent to the project corridors using Geographic Information Systems (GIS) software. This dataset represents the best available statewide data regarding conservation lands in New Hampshire. Overlapping areas between conservation lands and the Project were quantified and the ownership (municipal/county, federal, state, private, etc.), public access, and land status of the potentially impacted conservation lands were considered. Based on this analysis, the project is not expected to impact the Connecticut Lakes Headwaters easement. Potential visual impacts in the Northern Section (where the Connecticut Lakes Headwaters are located) are discussed in Section 4.2.1 of the EIS. Impacts to the broader landscape are analyzed throughout the EIS.

0130-1

Northern Pass EIS Website Comment Receipt

0131-1

Thank you for your comment.

Refers to Comment placed on Jul 28, 2015

ID: 8235**Date Entered:** Jul 28, 2015**Source:** Website**Topics:** Purpose and Need, Health and Safety, Vegetation, Wildlife, Viewshed/Scenery, Private Property/Land Use, Quality of Life

Organization:

Comment: I chose to move to NH four years ago from the Philadelphia area to live in a more beautiful area and get away from high voltage power lines. To push this project on New Hampshire and destroy the beauty of the state just to bring power to OTHER states and save a dyeing energy company is disgusting. This project has nothing to do with need, only greed. My town does not deserve to have this project shoved upon them and have their quality of life drastically reduced just so the head of a corporation can make more money.

0131-1

Northern Pass EIS Website Comment Receipt

Refers to Comment placed on Mar 28, 2016

ID: 8885

Date Entered: Mar 28, 2016

Source: Website

Topics: Alternatives

Name: Jay Girard

Organization: Smith College Botanic Garden

Title: Landscape Manager

Email: jgirard@smith.edu

Mailing Address: 158 Ryan Rd.

City: Florence,

State: MA

Zip: 01062

Country: US

Comment: I believe there are alternatives for direct burial of long distance power lines that should be considered. Examine full burial as outlined in Alternative 4a, but site the DC to AC converter station in Bow NH, where Merrimack Station is located to connect with the decommissioning of the Bow Coal fired plant. Also consider the route 91 corridor for a burial project to minimize environmental impact to the North Country of New England.

0134-1

Thank you for your comment. Alternative 4a is analyzed in detail in the EIS. Alternative project terminus and converter station locations (including Bow, NH; Buxton, ME; Vernon, VT; and Londonderry, NH) were considered but eliminated from detailed analysis in the EIS because they are not reasonable alternatives. Section 2.4.14 of the final EIS has been updated to include additional information about this alternative. Further, DOE does not have siting authority for the Project. In this case, the New Hampshire Site Evaluation Committee has siting authority for the Project in the state of New Hampshire. Additionally, the USFS has siting authority for portions of the Project located in the White Mountain National Forest. (For further discussion, see Sections 1.1-1.3 of the EIS.)

0134-2

Thank you for your comment. Northern Pass has applied to the Department of Energy for a Presidential permit for an international border crossing associated with an HVDC transmission line that would run from Quebec, Canada to Deerfield, NH. Executive Order (EO) 10485, as amended by EO 12038, "requires that executive permission be obtained for the construction and maintenance at the borders of the United States of facilities for the exportation or importation of electric energy." DOE is authorized to "receive applications for the construction, operation, maintenance, or connection, at the borders of the United States, of facilities for the transmission of electric energy between the United States and a foreign country[,] and "[u]pon finding the issuance of the permit to be consistent with the public interest, and, after obtaining the favorable recommendations of the Secretary of State and the Secretary of Defense thereon, to issue to the applicant, as appropriate, a permit for [the] construction, operation, maintenance, or connection." (EO 10485). DOE, however, does not have siting authority for the Project. In this case, the New Hampshire Site Evaluation Committee has siting authority for the Project in the state of New Hampshire. Additionally, the USFS has siting authority for portions of the Project located in the White Mountain National Forest. (For further discussion, see Sections 1.1-1.3 of the final EIS.) While DOE's authority is limited to the approval or denial of the amended Presidential permit application (August 2015) as requested by the Applicant, DOE's policy is to analyze not only the proposed border crossing, but also the alignment of new infrastructure required between the proposed border crossing and connection to the existing U.S. electricity system as a "connected action" under NEPA. In keeping with this policy, DOE analyzed the potential environmental impacts of the alignment

0134-1

0134-2

proposed by the Applicant. In addition, in response to input from Cooperating Agencies, other agencies, and extensive public comment, DOE analyzed a range of other alignments and underground and overhead configurations between the proposed border crossing and connection with the existing U.S. electricity system. The EIS analyzes in detail the No Action Alternative and eleven action alternatives. Additionally, seventeen alternatives were considered but eliminated from detailed analysis. Section 2.4 of the final EIS has been updated with additional information on alternatives considered but eliminated from detailed analysis. Among these alternatives, DOE considered two alternate border crossings. One was an alternative that would utilize the existing National Grid Phase I/II route, including its border crossing in Vermont. Based on its review of the National Grid alternative DOE determined that this alternative is not reasonable. Section 2.4.3 of the final EIS has been updated with additional information related to the National Grid alternative. Separately, in response to comments received on the draft EIS, DOE considered a second alternative border crossing in Vermont, specifically identified as a border crossing at Derby Line, VT that would utilize I-91. DOE determined that this alternative is not reasonable. Section 2.4.17 of the final EIS has been added to reflect consideration of this alternative and DOE's determination.

Northern Pass EIS Website Comment Receipt

0135-1

Thank you for your comment.

Refers to Comment placed on Aug 6, 2015

ID: 8244

Date Entered: Aug 6, 2015

Source: Website

Topics: Alternatives, Health and Safety, Vegetation, Wildlife, Viewshed/Scenery, Recreation, Private Property/Land Use, Tourism

Organization:

Comment: I just arrived home after visiting my daughter at tennis camp in Easton, New Hampshire. Driving through the Notch, I happily tried to decide when it was prettiest summer or winter. The thought that the Northern Pass might come through this area and adversely affect the beauty of it makes me angry. The thought that Quebec Hydropower doesn't want to bury the lines because of the cost is crazy. Why are we letting them dictate the terms? If they want to do business in our country, then do it our way. The section of 106 is a beautiful spot and a source of pride for New Hampshire. Currently, there is a project under way at Cannon Mountain, that would allow world class alpine ski events to take place at Cannon. This will bring more international tourism. Do we really want them greet by giant towers, when lines are consistently buried in Europe. Don't approve this, it will ruin a beautiful area.

0135-1

Northern Pass EIS Website Comment Receipt

0136-1

Thank you for your comment.

Refers to Comment placed on Aug 8, 2015

ID: 8245**Date Entered:** Aug 8, 2015**Source:** Website**Topics:** Health and Safety, Vegetation, Wildlife, Viewshed/Scenery, Water / Wetlands, Soils, Private Property/Land Use, Economic, Tourism, Cumulative Effects

Organization:

Comment: No Northern Pass. It does not benefit us and will effect our wildlife, beautiful scenery which will effect our tourism. The short term of jobs will not benefit in the long term. Our very fragile ecosystem will be effected negatively. We have no problems with electricity so it's unnecessary that we need to destroy the environment. As the proposed lines come above the ground near Chichester it's ugly and studies have shown that they are no good for our health no matter how many lobbyists deny it. Thousands of tourists come to our state to see the beauty of our lush trees and wildlife. Don't destroy my state.

0136-1

Northern Pass EIS Website Comment Receipt

Refers to Comment placed on Mar 30, 2016

ID: 8991

Date Entered: Mar 30, 2016

Source: Website

Topics: Alternatives, Viewshed/Scenery, Recreation, Private Property/Land Use, Quality of Life

Organization:

Comment: Northern Pass should be fully buried and DOE should examine all burial alternatives. Full burial is technically doable and is being used by other projects in the region. Northern Pass should do the same. The DEIS appropriately examines full burial in New Hampshire in the Final Environmental Impact Statement (FEIS), DOE should:

Reject Northern Pass's misleading and unsubstantiated claim that full burial in the I-93 corridor (Alternative 4a), is not doable, or require Northern Pass to independently verify this claim.

Examine full burial as outlined in Alternative 4a, but site the DC to AC converter station in Bow NH, where Merrimack Station is located. Merrimack Station is NH's largest coal-fired power plant, and one of New England's top sources of toxic and greenhouse gas pollution. It is also one of the most expensive sources of power for the New England grid. Full burial of Northern Pass to Bow, linked with the decommissioning of this power plant (now for sale by one of the Northern Pass partners, Eversource NH) is a reasonable alternative to consider as it meets the "purpose and need" of this project, even as defined by Northern Pass itself.

Flawed DEIS visual impact analysis. The FEIS needs to correct flaws in the DEIS visual impact analysis. The DEIS correctly ranks the North Country of NH as having high to very high intrinsic visual quality, and appropriately acknowledges that overhead lines and above-to-below-ground conversion stations would impact the visual landscape (and complete burial would not). However, to determine the overall visual impact based on viewer experiences, the DEIS uses a nonsensical approach based on the US Census data for the North Country. Using US Census data as a surrogate for real viewer experiences grossly underestimates the visual impacts of a project like Northern Pass on viewers and viewer expectations of this landscape. Regions such as New Hampshire's North Country, with more natural and undeveloped landscapes, typically have low resident population densities. Rather than US Census data, the FEIS should assess the visual expectations for the undeveloped landscape qualities of the North Country held by residents, second home owners, and visitors to the region.

Alternative Energy Options. The DEIS should examine distributed generation like solar, grid scale battery storage, and energy efficiency as reasonable alternatives to Northern Pass as proposed. They create as many if not more new jobs, have the least environmental impact, and will help reduce our reliance on imported energy. Energy efficiency and distributed generation are emphasized in New Hampshire's 2014 update of its 10-Year Energy Strategy. A recent New England grid operator (ISO-NE) report shows rooftop solar installations reducing overall demand by 390 megawatts in the coming years. Grid scale battery storage is practical today— over 40 megawatts of grid scale battery storage were just bid into the region's electric market. The U.S. energy storage market surged 243% in 2015

0137-1

Thank you for your comment. Because an EIS is intended to inform decisionmakers and the public about potential impacts of a major federal action, DOE analyzes in detail several alternatives that involve underground cable in the I-93 corridor, including Alternatives 4a, 4b, 4c, 5a, 6a, and 6b. The regulatory framework governing utilities in roadway corridors, including through Franconia Notch (Section 4.3.6.4 of the EIS), is discussed in the Land Use Technical Report and the EIS, see Section 3.1.6.4. DOE has considered this comment and no change to the EIS was made.

0137-2

Thank you for your comment. Alternative 4a is analyzed in detail in the EIS. Alternative project terminus and converter station locations (including Bow, NH; Buxton, ME; Vernon, VT; and Londonderry, NH) were considered but eliminated from detailed analysis in the EIS because they are not reasonable alternatives. Section 2.4.14 of the final EIS has been updated to include additional information about this alternative. Further, DOE does not have siting authority for the Project. In this case, the New Hampshire Site Evaluation Committee has siting authority for the Project in the state of New Hampshire. Additionally, the USFS has siting authority for portions of the Project located in the White Mountain National Forest. (For further discussion, see Sections 1.1-1.3 of the EIS.)

0137-3

Thank you for your comment. The value of scenic sensitivity used in the analysis is the greater of scenic concern or viewer exposure, not the average. Therefore, low viewer exposure in the Northern Section and the WMNF, for example, does not lower the scenic sensitivity of these areas. The rationale for the viewer exposure ratings is explained in Section 2.4.2.5 of the Visual Impact Assessment Technical Report. As discussed, use data are generally not available for scenic or recreation resources in New Hampshire and estimates of transient and tourist populations would be excessively speculative. Therefore, census data were used as an indicator of how many potential viewers exist in an area. The scenic value of the undeveloped nature of the area is captured through the other elements of the landscape assessment, including intrinsic visual quality. The viewer exposure metric was included in this analysis to represent the sensitivity of areas with many viewers but less intrinsic scenic quality.

0137-4

Thank you for your comment. The EIS analyzes in detail the No Action Alternative and eleven action alternatives. Additionally, seventeen alternatives were considered but eliminated from detailed analysis. Section 2.4 of the final EIS has been updated with additional information on alternatives considered but eliminated from detailed analysis. A power generation alternative was considered but was eliminated from detailed analysis in the EIS because it is not a reasonable alternative. Section 2.4.8 of the final EIS has been updated with additional information about this alternative. Section 1.4 of the final EIS has been updated to include new information on market trends and energy use, including demand-side management and energy efficiency, since the draft EIS was published in 2015.

and is estimated could hit 1 gigawatt by 2019.

Energy Diversity. The FEIS should fully examine the issues of fuel diversity and security, along with alternative energy options. In 2015, Canadian hydropower provided close to 13% of New England's net electric energy. The DEIS projects that Northern Pass would increase net imported electricity by over 30%, growing imports of Canadian hydropower to close to 20% of our net electric energy and possibly more, given other projects currently competing to enter the New England market. Substantially increasing imports of large-scale hydropower may be a risky way to reduce dependence on natural gas (with its carbon emissions and volatile rates), compared to maximizing an in-region mix of energy efficiency, distributed generation like solar, and emerging tools like storage and grid improvements. And, like California hydropower during these past years of drought, future Canadian hydro power generation during the tenure of the Northern Pass project could become less certain, and prices more volatile, because of climatic changes in temperature and precipitation, and internal energy needs within Canada.

0137-4

Continued 0137-4 cont'd

0137-5

0137-5

Thank you for your comment. Section 4.1.2 of the EIS includes analysis of the impact of the Project on electricity generation, by source and type. However, other impacts of the Project on general fuel diversity, future sources of supply, and energy security are beyond the scope of this EIS.

Northern Pass EIS Website Comment Receipt

Refers to Comment placed on Apr 2, 2016

ID: 9160

Date Entered: Apr 2, 2016

Source: Website

Topics:

Name: Bob Place

Organization:

Email: brawah@gmail.com

Mailing Address: 914 South Street

City: Needham

State: MA

Zip: 02492

Country: US

Comment: I have actively been involved in the development of large electrical generation facilities in New England and PJM. We have permitted power plants and the gas and electrical transmission lines for the supply of fuel and delivery of the electricity to the high voltage system. This permitting has been at both the state and federal level. Our transmission lines have ranged from three to 15 miles in length. We also commenced permitting a 1000 MW DC underwater transmission line from Nova Scotia to W44st NYC and applied for the Presidential Permit for that project. It was ultimately abandoned when Shell Oil was unable to secure additional gas supplies off of Nova Scotia. We are very familiar with the costs, challenges and issues with permitting a transmission line like the Northern Pass project. In addition to my work I am a 30 year resident of Massachusetts and a 28 year owner of a second home in Lincoln NH. My family and I are avid hikers and skiers and believe the White Mountains are a precious resource for our family.

I am opposed to the Northern Pass project as it is currently configured as outlined below:

1. Northern Pass should be fully buried and DOE should examine all burial alternatives. Full burial is technically doable and is being used by other projects in the region. Northern Pass should do the same. Since other projects have been willing to accept burial it is clear that both the technical and commercial reasons for not accepting burial are not being adequately explained by the Sponsors. Recently DOE has issued Presidential Permits for projects that cross from Canada into New York and

0139-1

Thank you for your comment. The EIS analyzes several full-burial alternatives in detail (Alternatives 3, 4a, 4b, and 4c). The potential environmental impacts of all twelve alternatives, as well as technical constraints and costs, are discussed throughout the EIS.

0139-1

VT using modern burial technology in transportation corridors. The Northern Pass Sponsors should be held to the same standard.

2. Northern Pass claims that it is not economically feasible to bury the line are not justified. This line will be built if the Sponsors are able to secure a long term contract for the use of the line by the company generating the electricity in Canada. The Company in Canada needs a long term power contract from rate payers in New England to make the investment in generating the hydro power and paying for its transmission into New England. The same company is looking at other alternatives to bring that electricity southward. If other transmission line sponsors are willing to bury their lines and believe that a long term contract might be available than the Northern Pass Sponsors are looking to increase their own economic benefit and not because it is commercially unfeasible.

3. Highway Corridors are Viable Options My company has permitted the burial of high voltage transmission lines in highway corridors. It is economically feasible and often done. It is critical to select the appropriate corridor for burial and it is a travesty to not use the I91 – I93 corridor for a project like this.

In the Final Environmental Impact Statement (FEIS), DOE should:

- o Reject Northern Pass's misleading and unsubstantiated claim that full burial in the I-93 corridor (Alternative 4a), is not doable, or require Northern Pass to independently verify this claim.
- o Examine full burial as outlined in Alternative 4a, but site the DC to AC converter station in Bow NH, where Merrimack Station is located.
- o Examine alternative international border crossings, including I-91 burial routes.

4. Flawed DEIS visual impact analysis. The FEIS needs to correct flaws in the DEIS visual impact analysis. The DEIS correctly ranks the North Country of NH as having high to very high intrinsic visual quality, and appropriately acknowledges that overhead lines and above-to-below-ground conversion stations would impact the visual landscape (and complete burial would not). However, to determine the overall visual impact based on viewer experiences, the DEIS uses a nonsensical approach based on the US Census data for the North Country. Using US Census data as a surrogate for real viewer experiences grossly underestimates the visual impacts of a project like Northern Pass on viewers and viewer expectations of this landscape. This is a precious landscape to all of us who live in and enjoy the mountains and it does not need to be further marred. It is also a landscape that is a significant tourist attraction and is a highlight for many a vacation trip. We do not need to visually create more man made swaths in an area of incredibly natural beauty. Using Census data and not measuring or evaluating other indices that look at tourist trips and vacation dollars spent in the north country provides an inaccurate picture.

5. Alternative Energy Options. The DEIS should examine distributed generation like solar, grid scale battery storage, and energy efficiency as reasonable alternatives to Northern Pass as proposed. They create as many if not more new jobs and have the least environmental impact. In addition, there are three other transmission projects that are proposed to bring Canadian renewable power to New England, a substantial amount of wind generation in development in northern Maine using existing transmission lines and significant amount of deep water wind resources being developed off of Rhode Island. I am not opposed to Canadian renewable resources – it is more that we should recognize that there are alternatives and the Sponsors should be held to the same standards of burial and mitigation as other projects.

0139-1
Continued 0139-1 cont'd

0139-2

0139-2

Thank you for your comment. The EIS analyzes several full-burial alternatives in detail (Alternatives 3, 4a, 4b, and 4c). The potential environmental impacts of all twelve alternatives, as well as technical constraints and costs, are discussed throughout the EIS.

0139-3

0139-3

Thank you for your comment. Because an EIS is intended to inform decisionmakers and the public about potential impacts of a major federal action, DOE analyzes in detail several alternatives that involve underground cable in the I-93 corridor, including Alternatives 4a, 4b, 4c, 5a, 6a, and 6b. The regulatory framework governing utilities in roadway corridors, including through Franconia Notch (Section 4.3.6.4 of the EIS), is

0139-4

discussed in the Land Use Technical Report and the EIS, see

0139-5

Section 3.1.6.4 of the EIS. DOE has considered this comment and no change to the EIS was made. In response to comments received on the draft EIS, DOE considered an alternative border crossing in Vermont, specifically identified as a border crossing at Derby Line, VT that would utilize I-91. DOE determined that this alternative is not reasonable. Section 2.4.17 of the final EIS has been added to reflect consideration of this alternative and DOE's determination.

0139-4

Thank you for your comment. Alternative 4a is analyzed in detail in the EIS. Alternative project terminus and converter station locations (including Bow, NH; Buxton, ME; Vernon, VT; and Londonderry, NH) were considered but eliminated from detailed analysis in the EIS because they are not reasonable alternatives. Section 2.4.14 of the final EIS has been updated to include additional information about this alternative. Further, DOE does not have siting authority for the Project. In this case, the New Hampshire Site Evaluation Committee has siting authority for the Project in the state of New Hampshire. Additionally, the USFS has siting authority for portions of the Project located in the White Mountain National Forest. (For further discussion, see Sections 1.1-1.3 of the EIS.)

0139-7

0139-5

Thank you for your comment. Northern Pass has applied to the Department of Energy for a Presidential permit for an

international border crossing associated with an HVDC transmission line that would run from Quebec, Canada to Deerfield, NH. Executive Order (EO) 10485, as amended by EO 12038, "requires that executive permission be obtained for the construction and maintenance at the borders of the United States of facilities for the exportation or importation of electric energy." DOE is authorized to "receive applications for the construction, operation, maintenance, or connection, at the borders of the United States, of facilities for the transmission of electric energy between the United States and a foreign country[,]" and "[u]pon finding the issuance of the permit to be consistent with the public interest, and, after obtaining the favorable recommendations of the Secretary of State and the Secretary of Defense thereon, to issue to the applicant, as appropriate, a permit for [the] construction, operation, maintenance, or connection." (EO 10485). DOE, however, does not have siting authority for the Project. In this case, the New Hampshire Site Evaluation Committee has siting authority for the Project in the state of New Hampshire. Additionally, the USFS has siting authority for portions of the Project located in the White Mountain National Forest. (For further discussion, see Sections 1.1-1.3 of the final EIS.) While DOE's authority is limited to the approval or denial of the amended Presidential permit application (August 2015) as requested by the Applicant, DOE's policy is to analyze not only the proposed border crossing, but also the alignment of new infrastructure required between the proposed border crossing and connection to the existing U.S. electricity system as a "connected action" under NEPA. In keeping with this policy, DOE analyzed the potential environmental impacts of the alignment proposed by the Applicant. In addition, in response to input from Cooperating Agencies, other agencies, and extensive public comment, DOE analyzed a range of other alignments and underground and overhead configurations between the proposed border crossing and connection with the existing U.S. electricity system. The EIS analyzes in detail the No Action Alternative and eleven action alternatives. Additionally, seventeen alternatives were considered but eliminated from detailed analysis. Section 2.4 of the final EIS has been updated with additional information on alternatives considered but eliminated from detailed analysis. Among these alternatives, DOE considered two alternate border crossings. One was an alternative that would utilize the existing National Grid Phase I/II route, including its border crossing in Vermont. Based on its review of the National Grid alternative DOE determined that this alternative is not reasonable. Section 2.4.3 of the final EIS has been updated with additional information related to the National Grid alternative. Separately, in response to comments received on the draft EIS, DOE

considered a second alternative border crossing in Vermont, specifically identified as a border crossing at Derby Line, VT that would utilize I-91. DOE determined that this alternative is not reasonable. Section 2.4.17 of the final EIS has been added to reflect consideration of this alternative and DOE's determination.

0139-6

Thank you for your comment. The value of scenic sensitivity used in the analysis is the greater of scenic concern or viewer exposure, not the average. Therefore, low viewer exposure in the Northern Section and the WMNF, for example, does not lower the scenic sensitivity of these areas. The rationale for the viewer exposure ratings is explained in Section 2.4.2.5 of the Visual Impact Assessment Technical Report. As discussed, use data are generally not available for scenic or recreation resources in New Hampshire and estimates of transient and tourist populations would be excessively speculative. Therefore, census data were used as an indicator of how many potential viewers exist in an area. The scenic value of the undeveloped nature of the area is captured through the other elements of the landscape assessment, including intrinsic visual quality. The viewer exposure metric was included in this analysis to represent the sensitivity of areas with many viewers but less intrinsic scenic quality.

0139-7

Thank you for your comment. The EIS analyzes in detail the No Action Alternative and eleven action alternatives. Additionally, seventeen alternatives were considered but eliminated from detailed analysis. Section 2.4 of the final EIS has been updated with additional information on alternatives considered but eliminated from detailed analysis. A power generation alternative was considered but was eliminated from detailed analysis in the EIS because it is not a reasonable alternative. Section 2.4.8 of the final EIS has been updated with additional information about this alternative. Section 1.4 of the final EIS has been updated to include new information on market trends and energy use, including demand-side management and energy efficiency, since the draft EIS was published in 2015.

Northern Pass EIS Website Comment Receipt

Refers to Comment placed on Mar 29, 2016

ID: 8967

Date Entered: Mar 29, 2016

Source: Website

Topics: Viewshed/Scenery, Water / Wetlands, Soils, Recreation

Organization: Appalachian Mountain Club

Comment: Dear sirs:

I believe an extension of the planned underground route for the northern pass should be considered.

Two areas of the route that I believe could be buried are that from about the town of Ashland to about the town of Franklin (south of the Great Gains Memorial Forest) and from about Northumberland east-northeast to about the 90 degree turn north near and northwest of the town of Dummer. The first is adjacent and routed between the boundaries of two adjacent protected forest areas and the second is west of one of the states prime recreation areas. Over the long term, I believe that the additional costs of these underground alternatives will yield long term financial as well as quality of life and scenic benefits to the states economy that will outweigh the added alternative costs of burying the herein described transmission power cable.

0142-1

Thank you for your comment. Underground cable between Ashland and Franklin is analyzed under Alternative 4c, and between Northumberland and Dummer under Alternative 3 in the EIS. Therefore the impacts of these modified alternatives have been analyzed.

0142-1

Northern Pass EIS Website Comment Receipt

0143-1

Thank you for your comment.

Refers to Comment placed on Jul 22, 2015

ID: 8205

Date Entered: Jul 22, 2015

Source: Website

Topics: Purpose and Need, Private Property/Land Use, Taxes

Organization:

Comment: As a home owner in Thornton NH, I will be exposed to the massive towers and electrical lines. My property values will decrease and more importantly my health and welfare may be impacted by the electric lines. The beauty of NH will be greatly decreased by this project if large towers are erected and there is little benefit from this project to the NH tax payer as there are little to no financial benefits to defer the cost of electricity in NH. I would support this project only if the transmission lines are buried.

0143-1

Northern Pass EIS Website Comment Receipt

0144-1

Thank you for your comment.

Refers to Comment placed on Jul 23, 2015

ID: 8206

Date Entered: Jul 23, 2015

Source: Website

Topics:

Organization:

Comment: New Hampshire's identity and livelihood is dependent on its beautiful outdoors. Any scarring of that environment eats away at everything we are. We do not need antiquated technology ripping through our landscape. It will not benefit us, it will only change us and not for the better. I very loudly say NO! to Northern Pass.

0144-1

Northern Pass EIS Website Comment Receipt

0145-1

Thank you for your comment.

Refers to Comment placed on Jul 23, 2015

ID: 8207

Date Entered: Jul 23, 2015

Source: Website

Topics: Purpose and Need, Health and Safety, Viewshed/Scenery, Recreation, Private Property/Land Use

Organization:

Comment: I don't believe this Northern Pass project is necessary for New Hampshire and does not benefit New Hampshire but simply passes through the state creating havoc and destruction of our beautiful scenery and recreation areas.

Please DO NOT approve, pass or support this project.

End the discussions now, there is no need to waste anymore time, money or resources on this nonsense.

Get out and enjoy life.... Move on to something that is more important.

0145-1

Northern Pass EIS Website Comment Receipt

0146-1

Thank you for your comment.

Refers to Comment placed on Jul 24, 2015

ID: 8209

Date Entered: Jul 24, 2015

Source: Website

Topics: Purpose and Need, Alternatives, Health and Safety, Vegetation, Wildlife, Viewshed/Scenery, Private Property/Land Use, Historic/Cultural

Organization:

Comment: Please reconsider this project in its entirety--SOLAR would be a great alternative--
TOURISM is NH's most cherished gift LET ALONE thank you

0146-1

Northern Pass EIS Website Comment Receipt

0147-1

Thank you for your comment.

Refers to Comment placed on Jul 24, 2015

ID: 8211**Date Entered:** Jul 24, 2015**Source:** Website**Topics:** Purpose and Need**Organization:**

Comment: This is the largest "change" to the North of New Hampshire since roads were installed. There is absolutely no way to know how this will impact the environment and economy. But we already that the economy has already taken a large hit in many areas just on the thought of Northern Pass. Imagine once it is built. And where is the alternative where people and states invest in energy efficiency projects before they ask NH to give up it's freedom. I am pleased that the State of New Hampshire, Eversource and Hydeo Quebec are willing to shell out billions of dollars when this turns into a disaster. The lawyers and PR alone will cost millions. I can't believe they want that, but good for them stepping up and offering to take care of those they hurt. I am sure they understand that if they break it, they own it. Forever. There will be no walking away from the liability this time.

Be prepared, Eversource and Fed. Government with a very big and open checkbook if this goes wrong.

0147-1

Northern Pass EIS Website Comment Receipt

0148-1

Thank you for your comment.

Refers to Comment placed on Jul 24, 2015

ID: 8214

Date Entered: Jul 24, 2015

Source: Website

Topics:

Organization:

Comment: I am in every way opposed to the proposed Northern Pass. It is not needed, It's not going to save any money, It's not earth friendly. Shall I go on??? D. Chase

0148-1

From: Golden Rock Farm <goldenrockfarm@hotmail.com>
Sent: Tuesday, December 15, 2015 7:10 AM
To: draftEIScomments@northernpasseis.us
Subject: Northern Pass

Mr. Brian
Mills: Dec.15,2015 Office of
Electricity Delivery and
Energy Reliability
e-mail draftEIScomments@northernpasseis.us

Mr. Mills,
Under New Hampshire Rivers Management and Protection Act, the Connecticut River Joint Commissions Headwaters Subcommittee has a responsibility to consider and comment on any federal, state, or local governmental plans to approve, license, fund or construct facilities that would alter the resource values and characteristics for which the river or segment is designated.

The Headwaters Subcommittee is opposed to the Northern Pass Project as proposed. Some of the reasons that have been cited at many of our meetings are the effect on scenic beauty of the area, the loss of working forests, the impact to wetlands, the reduction in property values, the effect on tourism, and the lack of any long term benefits to this region. We have studied the different alternatives and strongly reject any alternative that has overhead transmission lines included. We would propose as an alternative that the line be buried its entire length with the following modification:

At the entry point from Canada, travel down Hall Stream Road, onto the NH Railroad ROW, follow south on the old railbed to a point north of Colebrook where the RR ROW and US Route 3 abut each other, and then utilize the Route 3 corridor south.

We recognize that the Railroad corridor was eliminated from consideration but would ask that it be reconsidered for this short distance. This would shorten the route by approximately 15 miles. The proposed route of starting on the western side of NH and then cutting a new ROW across the state to the eastern side of the state and then doubling back to the western side of the state is unacceptable. There would be considerably less wetland impact, and the visual impacts would be all but eliminated.

In conclusion, the only acceptable alternative is to not build it, or bury it the full length of the route.

Edwin Mellett, Chairman
CRJC Headwaters Subcommittee

0149-1

Thank you for your comment. This alternative is not analyzed in the EIS because several fully- and partially-buried alternatives (3, 4a, 4b, 4c, 6a, and 6b) are already analyzed in detail, reflecting reductions of impacts to certain resources in the Northern Section. Additionally, utilization of railroad ROWS was found not to be reasonable. Section 2.4.2 has been updated with additional information about railroad ROWs and connecting roadway corridors.

0149-1

Good evening. My name is Chris Thayer, and I'm Director of North Country Programs and Outreach for the Appalachian Mountain Club. The AMC is the oldest conservation and recreation organization in the country with more than 100,000 members and supporters from Maine to Washington, D.C., including more than 12,000 here in New Hampshire. In our 140-year history, AMC has helped to protect this region's open spaces including from poorly sited energy projects like Northern Pass that request to use high impact, old technologies to maximize profits at the expense of New Hampshire's iconic landscape. Yes, parts of this proposal use a power line right-of-way where existing tower structures are now less than tree height. This project will congest that right-of-way with over 1100 towers that are more than 2 to 3 times tree height and cut a new swath for 40 miles through northern New Hampshire. Before making specific comments on the Draft EIS, AMC commends the Department of Energy for recently examining alternatives using 21st century full burial HVDC transmission line technologies and accepting it is as feasible in other recently issued DOE Presidential permits. Burial technology avoids or minimizes many well-known negative environmental and social impacts of HVDC long distance transmission projects. Full burial technology is affordable, available, being applied elsewhere in the region and is much less threatened by solar flares, ice storms or terrorist bombing of towers which have brought Hydro-Quebec's overhead thousand mile umbilical power cord to its knees in the recent past. In contrast, Northern Pass has only moved the needle slightly towards joining the 21st century, going from a position that burial is totally impractical to now avoiding permit denial by conceding to bury 60 of the proposed 192 miles of their project. They are now almost one-third of the way into this century. Tonight I'd like to make the following points on the DEIS. Number 1, the choice before the DOE of whether or not to issue a Presidential permit is far from a choice of permitting Northern Pass or nothing. It is whether you will permit yesterday's technologies with their high environmental impacts at the expense of New Hampshire's landscape. As you know, having issued permits to other competing projects in the region, full burial using 21st century technology is viable and affordable. Why not Northern Pass. Number 2, the Draft EIS is outdated and fails to consider in its alternatives analysis the numerous other competitive projects now bid into the New England Clean Energy RFP, the Mass., Connecticut and Rhode Island market that Northern Pass is intended for. In fact, one of these projects, the Vermont Green Power Line includes Hydro-Quebec power as part of its bids. These other projects need to be considered in the Final EIS as all of these projects seek to meet the very same objectives as claimed by Northern Pass. Diversify the region's electrical supply and provide low carbon electricity and nonintermittent electricity supply, and unlike Northern Pass, many of these other projects would not increase the federal trade deficits to the same degree by complete reliance on an imported power source. The US trade deficit component should be included in the FEIS analysis. Number 3, DOE should not be reviewing this proposal in isolation. AMC maintains as it has for the last five years the DOE should review this application in the context of a comprehensive EIS addressing energy imports from Canada into the northeastern United States. Project specific Presidential permit determination should follow, not precede the creation of such a region-wide comprehensive energy plan that considers this project in the context of recently permitted and potential future projects and takes a comprehensive look at the region's energy needs and potential sources to meet those needs, including but not limited to imported hydropower from Canada. Hydro-Quebec has a business plan. DOE does not. Without a plan, DOE in this region will be permanently mired in a reactionary and piecemeal mode of responding to projects driven by those who do have a plan. We continue to urge DOE to stay this proceeding and instead initiate a broad comprehensive and programmatic EIS to study the extent of need in the northeast for Canadian hydropower, taking into account the nature's and regions's energy policies and goals, the most efficient

0151-1

Thank you for your comment. The EIS analyzes several full-burial alternatives in detail (Alternatives 3, 4a, 4b, and 4c). The potential environmental impacts of all twelve alternatives, as well as technical constraints and costs, are discussed throughout the EIS.

0151-2

Thank you for your comment. Other transmission projects were considered as alternatives to the Project but were eliminated from further detailed analysis in the EIS because DOE determined it was not a reasonable alternative. The final EIS has been updated to include information about recent project proposals related to the New England Clean Energy RFP and other changes in the New England energy market. An analysis of the U.S. trade deficit is outside the scope of this EIS.

0151-1

0151-3

Thank you for your comment. As described in Appendix B, B.2.12, pursuant to Executive Order 10485, DOE is responsible for receiving "applications for permits for the construction, operation, maintenance, or connection at the borders of the United States, of facilities for the transmission of electric energy between the United States and a foreign country" and determining whether to issue the requested permit. Currently before DOE is an application from Northern Pass seeking a permit for a single international border crossing for a transmission line project. DOE's purpose and need is to determine whether or not to grant the requested Presidential permit for the Project at the international border crossing proposed in the further amended Presidential permit application (August 2015). The comment includes a request for a programmatic/comprehensive EIS that would assess issues such as regional energy needs and goals and potential sources to meet those needs as well as assess regional importation of Canadian hydropower. There is not, however, before DOE a proposed regional plan for the importation of Canadian hydropower that would serve as the subject of a programmatic EIS. Further, DOE does not have the authority to determine underlying regional energy needs and goals within the New England regional transmission system or to establish a master plan for regional importation of Canadian hydropower. Regional energy needs and a plan for meeting those needs within the New England region would be determined by ISO-NE in coordination with the New England states. DOE does, however, assess the impacts associated with past, present, and reasonably

0151-2

0151-3

foreseeable future actions (such as other regional transmission lines) that could, along with implementation of the Project, have cumulative environmental impacts. Sections 5.1 and Appendix D of the final EIS contain the cumulative impacts analysis.

0151-3 cont'd

least impacting means of importing Canadian power to meet any such need, the impacts on US-based renewable energy resources and how such projects would impact the US trade deficit. I'm almost done. It's good stuff. The DOE purpose and need for this Presidential permit is unnecessarily and unlawfully limiting. As proposed in the DEIS and supplement, the DOE is only considering two alternative issues. Only the action alternative, DOE would grant the permit. Under the no action alternative, DOE would deny the permit. This narrow interpretation of the alternatives contradicts NEPA's mandate that an agency cannot define its objectives in unreasonably narrow terms. At Section 2.4, the DEIS then uses this narrow approach to incorrectly make the case that other sources of power such as distributed generation or energy conservation are outside the scope of the DEIS. Yet at Section 1.4 of the DEIS the need to be examined is defined as electric diversity and low carbon sources, and the energy alternatives noted above are certainly within that framework. If DOE excludes certain alternatives from detailed consideration, DOE is obligated to independently justify and document its decision with respect to each excluded alternative with expert analysis and appropriate rationales using independent assessment of cost, technical issues and other constraints. If the DEIS does not include such analysis of these excluded alternatives, then this undermines the NEPA process and the public interest it is intended to protect. This information gap should be remedied in the FEIS. Thank you for your time and consideration.

0151-3
Continued

0151-4
Thank you for your comment. Northern Pass has applied to the Department of Energy for a Presidential permit for an international border crossing associated with an HVDC transmission line that would run from Quebec, Canada to Deerfield, NH. Executive Order (EO) 10485, as amended by EO 12038, "requires that executive permission be obtained for the construction and maintenance at the borders of the United States of facilities for the exportation or importation of electric energy." DOE is authorized to "receive applications for the construction, operation, maintenance, or connection, at the borders of the United States, of facilities for the transmission of electric energy between the United States and a foreign country[,]" and "[u]pon finding the issuance of the permit to be consistent with the public interest, and, after obtaining the favorable recommendations of the Secretary of State and the Secretary of Defense thereon, to issue to the applicant, as appropriate, a permit for [the] construction, operation, maintenance, or connection." (EO 10485). DOE, however, does not have siting authority for the Project. In this case, the New Hampshire Site Evaluation Committee has siting authority for the Project in the state of New Hampshire. Additionally, the USFS has siting authority for portions of the Project located in the White Mountain National Forest. (For further discussion, see Sections 1.1-1.3 of the final EIS.) While DOE's authority is limited to the approval or denial of the amended Presidential permit application (August 2015) as requested by the Applicant, DOE's policy is to analyze not only the proposed border crossing, but also the alignment of new infrastructure required between the proposed border crossing and connection to the existing U.S. electricity system as a connected action. In keeping with this policy, DOE analyzed the potential environmental impacts of the alignment proposed by the Applicant. In addition, in response to input from Cooperating Agencies, other agencies, and extensive public comment, DOE analyzed a range of other alignments and underground and overhead configurations between the proposed border crossing and connection with the existing U.S. electricity system. The EIS analyzes in detail the No Action Alternative and eleven action alternatives. Additionally, seventeen alternatives were considered but eliminated from detailed analysis. Section 2.4 of the final EIS has been updated with additional information on alternatives considered but eliminated from detailed analysis. A power generation alternative was considered but was eliminated from detailed analysis in the EIS because it is not a reasonable

alternative. Section 2.4.8 of the final EIS has been updated with additional information about this alternative.

Northern Pass EIS Website Comment Receipt

0152-1

Thank you for your comment.

Refers to Comment placed on Aug 13, 2015

ID: 8287

Date Entered: Aug 13, 2015

Source: Website

Topics: Historic/Cultural

Organization:

Comment: Dont let money ruin what great presidents fought to preserve! I grew up hiking in these beautiful mountains and I want my kids and grandkids to have the same opportunity!

0152-1

Northern Pass EIS Website Comment Receipt

0154-1

No comment was provided.

Refers to Comment placed on Jul 26, 2015

ID: 8225

Date Entered: Jul 26, 2015

Source: Website

Topics:

Name: Nancy Watson

Organization:

Mailing Address: 35 Stone Glade Lane

City: Groton

State: NH

Zip: 03241

Country: US

Comment:

| 0154-1

Northern Pass EIS Website Comment Receipt

0155-1

Thank you for your comment.

Refers to Comment placed on Jul 27, 2015

ID: 8227

Date Entered: Jul 27, 2015

Source: Website

Topics: Vegetation

Organization: none

Comment: I am opposed to any clearing of Right of Way timber in our Northern Forests. The underground burial of this power line following public roads & highways, etc is the only acceptable way.

0155-1



**Chris Thayer, Director of North Country Programs & Outreach
Appalachian Mountain Club
Comments to the US Department of Energy on the Northern Pass DEIS
March 9, 2016 – Waterville Valley**

My name is Chris Thayer and I am Director of North Country Programs & Outreach for the Appalachian Mountain Club. The AMC is the oldest conservation and recreation organization in the country, with more than 100,000 members and supporters from Maine to Washington, DC, including more than 12,000 here in New Hampshire. In our 140 year history, AMC has helped to protect this region's open spaces, including from poorly sited energy projects, like Northern Pass, that request to use high impact, old technologies to maximize profits at the expense of NH's iconic landscape. Yes, parts of this proposal use a powerline ROW where existing tower structures are now less than tree height. This project will congest that ROW with over 1,100 towers that are more than 2-3 times tree height and cut a new swath for 40 miles through northern NH.

Before making specific comments on the Draft EIS, AMC commends the Department of Energy for recently examining alternatives using 21st century, full burial HVDC transmission line technologies and accepting it as feasible in other, recently issued DOE Presidential Permits. Burial technology avoids or minimizes many well-known negative environmental and social impacts of HVDC long distance transmission projects. Full burial technology is affordable, available, being applied elsewhere in the region, and is much less threatened by solar flares (1988), ice storms (1998) or terrorist bombing of towers (2004) which had brought Hydro-Quebec's overhead thousand mile umbilical power cord to its knees in the recent past. In contrast, Northern Pass has only moved the needle slightly towards joining the 21st century – going from a position that burial is totally impractical, to now avoiding permit denial by conceding to bury 60 of the proposed 192 miles of their project. They are now almost one-third of the way into this century.

Tonight I would like to make the following points on the DEIS:

1. The lack of clarity in the DEIS about what criteria the US DOE will use to determine if it will issue a Presidential Permit is disconcerting to say the least. The FEIS needs to be clear about what criteria a final decision is based on. If you could provide further insight this evening that would be appreciated.
2. The choice before the DOE of whether or not to issue a Presidential Permit is far from a choice of permitting Northern Pass, or nothing. It is whether you will permit yesterday's technologies with their high environmental impacts at the expense of NH's landscape. As you know, having issued permits to other competing projects in the region, full burial using 21st technology is viable and affordable. Why not Northern Pass?

Main Headquarters: 5 Joy Street • Boston, MA 02108-1490 • 617-523-0636 • outdoors.org

Regional Headquarters: Pinkham Notch Visitor Center • 361 Route 16 • Gorham, NH 03581-0298 • 603 466-2721

Additional Offices: Bretton Woods, NH • Greenville, ME • Portland, ME • New York, NY • Bethlehem, PA

0156-1

Thank you for your comment. As described in Section 1.1.1 of the EIS, Executive Order (E.O.) 10485, as amended by E.O. 12038, authorizes the Secretary of Energy "Upon finding the issuance of the permit to be consistent with the public interest, and, after obtaining the favorable recommendations of the Secretary of State and the Secretary of Defense thereon, to issue to the applicant, as appropriate, a permit for [the] construction, operation, maintenance, or connection" of "facilities for the transmission of electric energy between the United States and a foreign country." Thus, in deciding whether to issue a Presidential permit, DOE must determine whether doing so would be "consistent with the public interest." In addition, the Departments of State and Defense must both make "favorable recommendations" on the issuance of the permit. In deciding whether the issuance of a Presidential permit would be consistent with the public interest, DOE assesses the environmental impacts of the proposed project and reasonable alternatives, the impact of the proposed action on electric reliability, and any other factors that DOE may also consider relevant to the public interest. DOE will announce its decision whether to issue a permit – as well as the factors DOE considered in making its decision – in the Record of Decision (ROD). DOE would issue a ROD no sooner than 30 days after the EPA publishes the Notice of Availability for this final EIS in the Federal Register.

0156-2

Thank you for your comment. The EIS analyzes several full-burial alternatives in detail (Alternatives 3, 4a, 4b, and 4c). The potential environmental impacts of all twelve alternatives, as well as technical constraints and costs, are discussed throughout the EIS.

0156-1

0156-2



2. The Draft EIS is out dated and fails to consider in its alternatives analysis the numerous other competitive Projects now bid into the New England Clean Energy RFP – the MA, CT and RI market that Northern Pass is intended for. In fact one of these projects - the Vermont Green Power Line-- includes Hydro-Quebec power as part of its bid. These other projects need to be considered in the Final EIS as all of these projects seek to meet the very same objectives as claimed by Northern Pass – diversify the region’s electricity supply, and provide low-carbon electricity and non-intermittent electricity supply. And unlike Northern Pass, many of these other projects would not increase the federal trade deficit to the same degree by complete reliance on an imported power source. The US trade deficit component should be included in the FEIS analysis.

3. DOE should not be reviewing this proposal in isolation. AMC maintains, as it has for the last five years, that DOE should review this Application in the context of a “Comprehensive EIS Addressing Energy Imports from Canada into the Northeastern United States.” Project-specific Presidential Permit determinations should follow, not precede, the creation of such a region-wide, comprehensive energy plan that considers this project in the context of recently permitted and potential future projects, and takes a comprehensive look at the region’s energy needs and potential sources to meet those needs, including but not limited to imported hydropower from Canada. Hydro-Quebec has a business plan; DOE does not. Without a plan, DOE and this region will be permanently mired in a reactionary and piecemeal mode of responding to projects driven by those who do have a plan. We continue to urge DOE to stay this proceeding, and instead initiate a broad, comprehensive, and programmatic EIS to study the extent of need in the Northeast for Canadian hydro-power, taking into account the nation’s and region’s energy policies and goals, the most efficient, least impacting means of importing Canadian power to meet any such need, the impact on US- based renewable energy resources, and how such projects would impact the US trade deficit.

4. The DOE’s purpose and need for this Presidential Permit action is unnecessarily and unlawfully limiting. As proposed in the DEIS and supplement, the DOE is only considering two alternative actions: under the Action alternative, DOE would grant the permit; under the No Action alternative, DOE would deny the permit. This narrow interpretation of the alternatives contradicts NEPA’s mandate that “an agency cannot define its objectives in unreasonably narrow terms.” At Section 2.4, the DEIS then uses this narrow approach to incorrectly make the case that other sources of power, such as distributed generation or energy conservation, are outside of the scope of the DEIS. Yet at Section 1.4 of the DEIS, the “need” to be examined is defined as “electric diversity” and “low carbon sources”, and the energy alternatives noted above are certainly within that framework. If DOE excludes certain alternatives from detailed consideration, DOE is obligated to independently justify and document its decision with respect to each excluded alternative with expert analysis and appropriate rationales using an independent

Main Headquarters: 5 Joy Street • Boston, MA 02108-1490 • 617-523-0636 • outdoors.org
 Regional Headquarters: Pinkham Notch Visitor Center • 361 Route 16 • Gorham, NH 03581-0298 • 603 466-2721
 Additional Offices: Bretton Woods, NH • Greenville, ME • Portland, ME • New York, NY • Bethlehem, PA

0156-3

0156-3
 Thank you for your comment. Other transmission projects were considered as alternatives to the Project but were eliminated from further detailed analysis in the EIS because DOE determined they are not reasonable alternatives. The final EIS has been updated to include information about recent project proposals related to the New England Clean Energy RFP and other changes in the New England energy market. An analysis of the U.S. trade deficit is outside the scope of this EIS.

0156-4

0156-4
 Thank you for your comment. As described in Appendix B, B.2.12, pursuant to Executive Order 10485, DOE is responsible for receiving "applications for permits for the construction, operation, maintenance, or connection at the borders of the United States, of facilities for the transmission of electric energy between the United States and a foreign country" and determining whether to issue the requested permit. Currently before DOE is an application from Northern Pass seeking a permit for a single international border crossing for a transmission line project. DOE's purpose and need is to determine whether or not to grant the requested Presidential permit for the Project at the international border crossing proposed in the further amended Presidential permit application (August 2015). The comment includes a request for a programmatic/comprehensive EIS that would assess issues such as regional energy needs and goals and potential sources to meet those needs as well as assess regional importation of Canadian hydropower. There is not, however, before DOE a proposed regional plan for the importation of Canadian hydropower that would serve as the subject of a programmatic EIS. Further, DOE does not have the authority to determine underlying regional energy needs and goals within the New England regional transmission system or to establish a master plan for regional importation of Canadian hydropower. Regional energy needs and a plan for meeting those needs within the New England region would be determined by ISO-NE in coordination with the New England states. DOE does, however, assess the impacts associated with past, present, and reasonably foreseeable future actions (such as other regional transmission lines) that could, along with implementation of the Project, have cumulative environmental impacts. Sections 5.1 and Appendix D of the final EIS contain the cumulative impacts analysis.

0156-5

0156-5
 Thank you for your comment. Executive Order (EO) 10485, as

amended by EO 12038, "requires that executive permission be obtained for the construction and maintenance at the borders of the United States of facilities for the exportation or importation of electric energy." DOE is authorized to "receive applications for the construction, operation, maintenance, or connection, at the borders of the United States, of facilities for the transmission of electric energy between the United States and a foreign country[.]" and "[u]pon finding the issuance of the permit to be consistent with the public interest, and, after obtaining the favorable recommendations of the Secretary of State and the Secretary of Defense thereon, to issue to the applicant, as appropriate, a permit for [the] construction, operation, maintenance, or connection." (EO 10485). DOE's purpose and need reflects this limited authority. As discussed in Section 1.4 of the EIS, Northern Pass set forth a range of project objectives and benefits in its permit application. DOE and the cooperating agencies reviewed this documentation and determined that the project objectives include addressing three primary needs concerning New England's electricity supply: diverse, low-carbon, non-intermittent electricity. While DOE's authority is limited to the approval or denial of the amended Presidential permit application (August 2015) as requested by the Applicant, DOE's policy is to analyze not only the proposed border crossing, but also the alignment of new infrastructure required between the proposed border crossing and connection to the existing U.S. electricity system as a connected action. In keeping with this policy, DOE analyzed the potential environmental impacts of the alignment proposed by the Applicant. In addition, in response to input from Cooperating Agencies, other agencies, and extensive public comment, DOE analyzed a range of other alignments and underground/overhead configurations between the proposed border crossing and connection with the existing U.S. electricity system. The EIS analyzes in detail the No Action Alternative and eleven action alternatives. Additionally, seventeen alternatives were considered but eliminated from further detailed analysis. Section 2.4 of the EIS discusses alternatives considered but eliminated from further analysis. DOE determined that other transmission projects, power generation alternatives, and energy conservation do not meet the purpose and need for DOE's action. The EIS analyzes in detail the potential environmental impacts of a No Action Alternative and eleven action alternatives. Under the No Action Alternative, it is assumed that existing energy sources, including distributed generation and alternative energy generation, would continue to supply the ISO-NE region and that energy efficiency measures would continue.



0156-5 cont'd

assessment of costs, technical issues, and other constraints. The DEIS does not include such analysis of these excluded alternatives, and this undermines the NEPA process and the public interest it is intended to protect. This information gap should be remedied in the FEIS.

0156-5
Continued

Thank you for your time and consideration.

Main Headquarters: 5 Joy Street • Boston, MA 02108-1490 • 617-523-0636 • outdoors.org

Regional Headquarters: Pinkham Notch Visitor Center • 361 Route 16 • Gorham, NH 03581-0298 • 603 466-2721

Additional Offices: Bretton Woods, NH • Greenville, ME • Portland, ME • New York, NY • Bethlehem, PA

ARCHITECTURAL HISTORY HISTORIC PRESERVATION

JAMES L. GARVIN
FARRINGTON HOUSE

30 South Main Street · Building 1, Suite 201 · Concord, New Hampshire, 03301
james@jamesgarvin.net jlgarvin@mail.plymouth.edu <http://www.james-garvin.com>

0157-1

Thank you for your comment. The commenter's concerns regarding the research and reporting process for the Section 106 (of the National Historic Preservation Act of 1966 ("NHPA")) process are noted. No change is made to the EIS in response to this comment; this comment will be considered through the Section 106 process.

23 July 2015

Mr. Brian Mills
National Electricity Delivery Division
Office of Electricity Delivery and Energy Reliability, OE-20
United States Department of Energy
1000 Independence Avenue, SW
Washington, D. C., 20585

Re : Public comment under Section 106: Northern Pass; Historic/Cultural Resources

Dear Mr. Mills:

As a resident of Pembroke, N. H., I have reviewed the draft project area form for the Merrimack Valley (N. H.) and submit the following comments.

The draft area forms for the proposed Northern Pass project are intended to be general documents that establish themes and identify properties requiring further evaluation for eligibility for the National Register of Historic Places. As submitted, the project area form for the Merrimack Valley does not adequately identify such themes and properties because of insufficient underlying research. The area form also includes statements regarding evaluation for National Register eligibility that are inaccurate, and specific references to the visual effects of "new towers" that are improper in a document that must provide information for unbiased evaluation without reference to any specific undertaking.

Research:

The bibliography attached to the Merrimack Valley area form indicates limited research into historical and cultural properties. Existing National Register nominations seem to have shaped the discussion of building types and Register-eligible properties. Because New Hampshire has never had a strong SHPO-sponsored National Register survey program, the SHPO has relied largely upon individual initiative in compiling National Register nominations or upon inventory forms compiled for projects associated with federal funding or permits. Because they have been submitted adventitiously rather than through a systematic survey, existing National Register listings in New Hampshire cannot be relied upon for a comprehensive identification of properties of cultural significance.

0157-1

Garvin to Mills, 23 July 2015, page 2.

The area form does not mention or cite a number of documents that offer specific information on some relevant contexts that the New Hampshire Division of Historical Resources (the New Hampshire SHPO) has developed to guide National Register evaluation.

For example, the area form cites few of the master plans that have been compiled by each of the affected towns under state statutes; specifically, the area form shows no evidence of consultation of the "Historic and Cultural Resources" chapters that are included in most of these plans.

With specific reference to Pembroke, N. H., the "Historic and Cultural Resources" chapter of the town's master plan includes an extensive bibliography that would have led the consultants to information on a number of contexts that the form addresses superficially or not at all. That chapter of the master plan also includes specific references to potentially Register-eligible properties, some of them very close to the centerline of the proposed area of visual influence. It also describes historical developments that are essential to an understanding of the cultural geography of the region, including the "range township," a method of town planning and road layout that continues to define the cultural landscape both in the Merrimack Valley and throughout most of the State of New Hampshire.

Another document that should be consulted is the cultural resources chapter of a nomination of the Suncook River (with a watershed that is affected by the proposed project) to the New Hampshire Rivers Management and Protection Program:
<http://www.suncookriver.org/index.php/suncook-river-nomination>

I request that the consultant be required 1) to consult the master plans of the affected towns and 2) to carry out a more thorough file search at the New Hampshire Division of Historical Resources and incorporate the findings of that search into the research narrative and the bibliography of the project area form.

National Register Evaluation Criteria:

All properties being considered for eligibility for the National Register of Historic Places are evaluated with respect to seven aspects of physical integrity: *location, design, setting, materials, workmanship, feeling, and association*. To retain historic integrity, a property will always possess several, and usually most, of the aspects. The retention of specific aspects of integrity is paramount for a property to convey its significance (National Register *Bulletin 15*, "Criteria for Evaluation," pp. 44-49).

As submitted, the area form identifies certain properties, including some already listed in the National Register, stating that "because the setting of these historic properties is not essential to their historic or architectural significance, viewshed impacts are unlikely to diminish the integrity of these properties" (area form page 46). This assertion particularly focuses on properties that were evaluated or nominated to the National Register under Criterion A, for

0157-1
Continued

Garvin to Mills, 23 July 2015, page 3.

significance in social history, and Criterion C, for significance in architecture or design. The area form states (page 46) that “if a property is significant for its architecture alone, the introduction of a new structure, such as an electrical tower, would not diminish the property’s integrity of design, materials, or workmanship.”

As an example, the area form states that “the Allenstown Meeting House is NR-listed under Criterion A for its role in the social, political, and religious history of Allenstown, and under Criterion C for its architecture. Its setting is not an integral part of these criteria.”

As the author of the National Register nomination for the Old Allenstown Meeting House, I affirm that the setting of the building was integral to its function as the site of religious camp meetings that were sheltered by the adjacent pine forest, and remains an essential element in the integrity of the property.

While a property may be considered eligible for the National Register despite a loss of integrity of setting, there is no precedent for asserting that certain categories of integrity, if still present, may be dismissed as unimportant and may be regarded as expendable during the evaluation of a project’s effects on a National Register resource. If any such judgment on the relative importance of the seven elements of integrity is to be made for a specific property, that judgment is reserved to the State Historic Preservation Office, not the preservation consultant.

I request that this interpretation of the relative importance of integrity for “setting” be referred to the New Hampshire Division of Historical Resources for evaluation and comment.

Reference to “towers:”

Further, specific references to “[future] viewshed impacts” “such as an electrical tower” are highly inappropriate in an inventory form. Inventory forms are intended to be compiled and evaluated with strict neutrality. Evaluation of cultural resources for National Register eligibility should not be colored by any consideration of a proposed project or possible future effects on the resource. Review of effects on eligible resources occurs separately from a determination of eligibility.

I request that all references or allusions to “towers” or “[future] viewshed impacts” be removed from the document.

Cultural Landscapes and the Two-Mile “Indirect Area of Potential Effect:”

In addition to the comments above, I wish to point out that most of the corridor that is defined and discussed in this area form, and the other forms that address project areas extending north to

0157-1
Continued

Garvin to Mills, 23 July 2015, page 4.

the Canadian border, is occupied by a multitude of cultural landscapes that cannot be limited to an arbitrary two-mile-wide boundary.

A “cultural landscape” is defined by the National Park Service as “a tangible manifestation of human actions and beliefs set against and within the natural landscape.” The National Register of Historic Places further identifies rural historic landscapes as “a geographical area that historically has been used by people, or shaped or modified by human activity, occupancy, or intervention, and that possesses a significant concentration, linkage, or continuity of areas of land use, vegetation, buildings and structures, roads and waterways, and natural features.”

In Pembroke, for example, an area that might be analyzed and defined as a cultural landscape would extend along Fourth Range (Pembroke Hill) Road. This range road was identified in 1811 as “the center of money and travel” in Pembroke because of its rich soils and productive farms in an age before industrial development drew the center of population toward the waterpower of the Suncook Village. Another area that similarly exhibits characteristics of a cultural landscape extends along Buck Street, deriving from the alluvial soils of the adjacent Suncook River. Both areas continue in significant agricultural use, with a special concentration of horse pasturage along Fourth Range Road.

The importance of identifying and evaluating cultural landscapes for National Register eligibility is clear within the region addressed by this project area form, especially in and adjacent to the flood plains or intervalees of the Merrimack River. But different and potentially much more expansive cultural landscapes will also require identification and evaluation farther north. In the Lakes Region, both agriculture and recreation have been significant since the eighteenth century. In the White Mountains Region, farming, forest management, extractive industries, recreation, and constrained routes of transportation have created layers of cultural landscapes that will fall both within and beyond the “Indirect Area of Potential Effect” or “Area of Visual Impact.”

I request that concentrated effort be made to identify and evaluate rural cultural landscapes throughout the project area. If the present consultants do not employ qualified staff, I request that cultural geographers be added to the survey team.

Sincerely,

James L. Garvin

Cc: New Hampshire Division of Historical Resources
New Hampshire Preservation Alliance
National Trust for Historic Preservation
Town of Pembroke, N. H.

0157-1
Continued



April 4, 2016

Mr. Brian Mills, Senior Planning Advisor
Office of Electricity Delivery and Energy Reliability (OE-20)
U.S. Department of Energy
1000 Independence Ave. SW
Washington, DC 20585

RE: Northern Pass Transmission Line Project, Draft Environmental Impact Statement (July 2015) and Supplement (November 2015), DOE/EOS-0463 and DOE/EIS-0463-S1

Dear Mr. Mills:

The New Hampshire Preservation Alliance is the statewide non-profit preservation group in New Hampshire. We appreciate the opportunity to provide comments on the Draft Environmental Impact Statement and Supplement for the Northern Pass Transmission Line Project (DEIS).

We are collaborating with the National Trust for Historic Preservation on the several and various permitting processes for the Northern Pass Transmission project (NPT). Their letter to you of today's date (April 4, 2016) is a result of our long-standing collaboration and as such, incorporates most of our concerns about the DEIS. We fully endorse the content of that letter.

In addition, as we stated in our November 5, 2013 comment letter on the EIS Scoping, the scale and scope of this project—involving at least thirty-one towns, an estimated 192 miles, and potentially hundreds if not thousands of historically and culturally significant resources—it is critical that the Department of Energy (DOE) conduct the NEPA review process in a thoughtful and thorough manner.

We are deeply concerned about the potential adverse effects of this proposed project on New Hampshire's historic and cultural resources. Especially since this is not a reliability project, the public interest needs to be carefully considered. These are our major concerns:

1. Flaws in methodology:

- DOE declined to use concurrent processes for NEPA and Section 106 review, and yet the DEIS refers to Section 106 data for impacts to historic resources. The identification and evaluation of cultural resources under Section 106 is not complete at this time.
- DEIS uses the preliminary Project Area Forms (PAFs) which were reviewed and deemed inadequate by the NH Division of Historical Resources (NHDHR). Since then, the proposed route was altered to include a new buried section through the White Mountains. While the DEIS was amended to cover the new proposed buried section of the line, the revised PAF's—which

0158-1

The NEPA review and the Section 106 process are separate, independent processes, each with its own schedule. DOE is coordinating its compliance with Section 106 and the pertinent NEPA standards in a manner consistent with 36 C.F.R. Section 800.8 and, to the extent practicable, NEPA and NHPA: A Handbook for Integrating NEPA and Section 106. DOE's final EIS contains the appropriate level of information on cultural and historic resources, informed by DOE's Section 106 process to the extent possible, for the proposed Northern Pass project. Both the NEPA review and Section 106 process inform DOE's decision whether or not to issue a Presidential permit for the proposed Northern Pass project. This approach is consistent with DOE's current practice and policy for its Presidential permit applications.

0158-2

Thank you for your comment. The draft Project Area Forms ("PAF") were developed in response to NPT's 2013 Amended Application and finalized in accordance with the NH Division of Historical Resources' Determination of Eligibility committee review process. DOE supplemented the final PAFs to reflect NPT's further amended Presidential permit application (August 2015). The information from all of the PAFs prepared is incorporated into the EIS, as appropriate, as well as the Historic and Cultural Resources Technical Report.

0158-1

0158-2



have just become available in the last few months—do not consider this revised buried route. Up to date historical resource evaluation data is therefore lacking for the revised route.

3. The general public has been largely prevented from gaining clear and adequate information to comment on the draft EIS. Obstacles include:

- DOE's enforced secrecy rules with consulting parties in the Section 106 process.
- Tightly controlled public hearings on the DEIS followed a format that inhibited and prevented free exchange of questions and comments. While the applicant was able to provide their view of the proposal, no comprehensive inventory or summary analysis of the project's impacts as identified in the DEIS was shared with the audience at these meetings.
- A huge quantity of paperwork to review. The project is unprecedented in this state in scope, and thus the filings are extensive. For many, especially in the Great North Woods area which lacks internet capacity in many places, the documents are difficult to access or download.

4. The DEIS found only a small number of impacts to architectural resources. We feel the impacts are, in fact, much greater.

- Impacts would result from changes to the setting of these resources or by changing views of or from these resources by the introduction of new and visible features into settings, such as the new transmission corridor, widened existing PSNH transmission corridor, and/or new and more visually prominent overhead transmission line structures or aboveground transition stations. New access roads and/or new laydown areas also have the potential to be considered new and visible landscape features. Indirect, long-term, adverse impacts are likely to occur wherever the new landscape features are visibly prominent and appear inconsistent with the existing setting of the architectural resources or within views to and from the architectural resources.
- The Indirect APE does not meet agreed upon standard to go beyond one mile on either side of the center line where particular topography would cause the project to be visible for a larger area

5. The DEIS fails to address broader, landscape-scale historic resources such as cultural landscapes, potential rural historic districts, scenic byways, or potential above-ground Native American Resources.

6. By dividing the route into four different geographic sections, the report fails to provide an integrated assessment of the overall and cumulative impacts of the proposed project to the state of New Hampshire with issues such as these:

- The economy of much of the affected region is built around tourism, historic and scenic resources, outdoor recreation, and traditional land uses such as agriculture or natural resources.
- Historic areas and structures contribute significantly to the livability of the state.
- Many property owners are concerned about the loss of value of their investments due to proximity to the proposed project.
-

0158-2 cont'd

0158-3

Thank you for your comment. DOE is committed to conducting a thorough and open review of Northern Pass's Presidential permit application under Section 106. Participants in the Section 106 process include DOE and other federal agencies, the Advisory Council on Historic Preservation (ACHP), Section 106 consulting parties, and the public. DOE considers the views of the public to be essential for informed decision-making by DOE about identification of historic properties for the proposed undertaking and consideration of the effects of the proposed undertaking on historic properties. Comments from the public regarding historic and cultural resources have been accepted throughout the process, including in conjunction with NEPA comment periods. In implementing the NEPA review and Section 106 process, it is the federal agency's responsibility to balance the sensitivity of certain information, e.g., individual's personal information or the specific locations of resources that could be damaged by looting, with providing public access to information.

The NEPA review and the Section 106 process are separate, independent processes, each with its own schedule. DOE is coordinating its compliance with Section 106 and the applicable NEPA requirements in a manner consistent with 36 C.F.R. Section 800.8 and, to the extent practicable, NEPA and NHPA: A Handbook for Integrating NEPA and Section 106. DOE's final EIS contains the appropriate level of information on cultural and historic resources, informed by DOE's Section 106 process to the extent possible, for the proposed Northern Pass project. Both the NEPA review and Section 106 process inform DOE's decision whether or not to issue a Presidential permit for the proposed Northern Pass project. In implementing these processes, it is the federal agency's responsibility to balance the sensitivity of certain information, e.g., individual's personal information or the specific locations of resources that could be damaged by looting, with providing public access to information.

With respect to the draft EIS public hearings, the DOE conducted public hearings consistent with DOE implementing NEPA regulations that were open to the public with ample opportunity to comment on the project.

0158-4

Sections 3.1.8 of the EIS and 1.4 of the Technical Document describe the indirect APE and the methodology for developing it,

and Sections 4.1.8 of the EIS and 3 of the Technical Document describe the potential indirect impacts to architectural resources.

0158-5

Thank you for your comment. Additional information has been added to Section 3.1.8 of the EIS regarding landscape-scale effects on historic/cultural resources and how they will be considered for the proposed Northern Pass project. Section 1.4.8 in the Cultural Resources Technical Report has been added to discuss the state DHR's scope of work for addressing cultural landscapes for the Project. Appendix B in the Technical Report has also been revised to reflect stipulations in the programmatic agreement that address the identification and evaluation of cultural landscapes, including rural historic districts, scenic byways, and above-ground Native American resources. DOE is addressing potential adverse effects to historic properties, including traditional cultural properties and cultural landscapes listed in the National Register of Historic Places (NRHP) or eligible for listing in the NRHP, in accordance with Section 106 of the National Historic Preservation Act and its implementing regulations. For more information, see Sections 1.6 and 3.1.8.1 of the EIS.

0158-6

Thank you for your comment. The impact analysis is presented by geographic section in order to facilitate review, and a summary of Project-wide impacts is presented in Sections 2.5 and 4.1 of the EIS. Cumulative impacts are analyzed in Chapter 5 of the EIS. Project-wide socioeconomic impacts are presented in Section 4.1.2 of the EIS, including potential impacts to property values and tourism. Section 4.1.8 presents project-wide impacts to historic and cultural resources.



7. “Applicant-Proposed Impact Avoidance and Minimization Measures” should not be included in the DEIS and this section should be removed or amended.

- This information must be developed in consultation with Consulting Parties and the public.
- More time will be needed to develop this section because the public has not yet been provided with adequate information about historic resources and impacts (see items above) to be able to respond knowledgably or effectively.

Thank you for the opportunity to comment on the Draft EIS. From our viewpoint, i.e. a focus on careful identification and assessment of effects on cultural and historic resources, this document fails to meet the necessary and required standard. Its lack of coordination with Section 106 review leaves a major void in the body of material that should be reviewed and evaluated.

Sincerely,

Maggie Stier
NH Preservation Alliance
PO Box 268, Concord, NH 03302

0158-7

Thank you for your comment. Appendix H of the EIS includes a list of Applicant-Proposed Impact Avoidance and Minimization Measures (APMs) considered in the EIS process. APMs are submitted by an applicant through the NEPA process. DOE considers APMs to be part of "the project" for purposes of analyzing the potential environmental impacts under NEPA and determining any adverse effect under Section 106. APMs do not represent agreed upon measures to avoid, minimize, or mitigate adverse effects related to Section 106, but may help inform discussion during the Section 106 process about resolution of adverse effects. Additional mitigation measures related to cultural and historic resources may be developed through the ongoing Section 106 consultation process with the State Historic Preservation Office and Consulting Parties.

0158-7



Cowasuck Band of the Pennacook - Abenaki People
COWASS North America, Inc.
The Abenaki Nation of Vermont, Inc.
840 Suncook Valley Road
P.O. Box 52
Alton, NH 03809-0052
(603) 776-1090 - FAX (603) 776-1091



16 March 2016

New Hampshire Site Evaluation Committee
 Pamela G. Monroe, Administrator
 21 South Fruit Street, Suite 10
 Concord, NH 03301

Subject: Northern Pass Transmission - Eversource (NPT) Project
 New Hampshire Site Committee - SEC Docket No. 2015-06
 Re: Petition to Intervene as a Native American Indian Tribal Organization

Greetings Ms. Monroe,

My name is Paul W. Pouliot, I represent the Cowasuck Band of the Pennacook-Abenaki People (Cowasuck Band) as the Sag8mo (Grand Council Chief or principal speaker). I am also a Religious Elder, Tribal Historian, and Tribal Historical Protection Officer (THPO) for the Cowasuck Band. Our headquarters is located at P.O. Box 52, 840 Suncook Valley Road, Alton, NH 03809.

On the behalf of our Cowasuck Band, I am respectfully petitioning to be a intervening party in regard to the New Hampshire Site Evaluation Committee in regard to the Northern Pass Transmission (NPT) (Project) proceedings under Docket No. 2015-06 as an Indigenous (Native American Indian) tribal organization with relevant legal and religious interest to this subject project. As per the SEC's requirements for petitioning to intervene, we forwarded email copies of this petition to intervene request letter to the latest (3/14/2016) SEC's distribution list for this proceeding as noted in the "cc" below.

I will state for informative purposes, that the Cowasuck Band went on record in 1993 with the U.S. Department of the Interior - Bureau of Indian Affairs that we are seeking federal acknowledgment and protection under USC Title 25 as a Native American Indian tribal entity. The formal announcement of this acknowledgment request was made on April 6, 1995, in the Federal Register Volume 60, Number 66, Page 17614. The New Hampshire Secretary of State and the State's Attorney General have been formally notified through several prior fillings and documents that our headquarters is located here in Alton, New Hampshire. Our Cowasuck Band maintains federal legal rights to intervene under several protective provisions of USC Title 25 and that our tribal group holds a very long historical presence (for centuries before colonial contact in the 1500's) in the Project's construction locus.

As for this Project's proposed locus, it appears to be fully within our tribal historical and present homelands. We consider our homelands, or N'dakinna, to encompass all of New Hampshire, portions of southern Quebec, and major sections of the other New England states. For a full description of N'dakinna please see our Constitution of Our People, Article 1, Section 11 on our website at: www.cowasuck.org.

As for our eligibility and interest for intervening: The Cowasuck Band, and particularly myself, have set a long term precedent by being actively engaged as a consulting and

0159-1

Thank you for your comment. The federal Section 106 (of the National Historic Preservation Act of 1966 ("NHPA") process, federal NEPA review, and NH SEC process are separate, independent processes. This comment is related to the NH SEC process and is, therefore, out of scope for the EIS.

0159-1

intervening party with several federal and state agencies, departments, and divisions on a wide array of projects and issues since the 1990's to present. In particular to this Project we are and continue to work with the New Hampshire Division of Historical Resources (NHDHR) and Bureau of Indian Affairs - Native American Graves Protection and Repatriation Act (NAGPRA) Program on the matter of consultation and repatriation of human remains, funerary, sacred, and other items of cultural patrimony in the New England region.

In regard to the lands that will be impacted by the Project, in the Indigenous (Native American Indian) culture, all the lands of Mother Earth are considered a sacred gift from the Creator that we are obligated to "use, protect and maintain" as human beings. More importantly we have a religious and moral obligation to protect Indigenous sacred sites, ancestral human remains, funerary, sacred, and other items of cultural patrimony that may be discovered and or potentially impacted by the Project.

As this proposed Project progresses it has become very controversial in many ways because of the visual impact of transmission towers, the establishment of any new clearings for the Right of Way, and related transmission line structures that also may cause environmental and aesthetic related issues. More importantly this Project has a significantly greater impact on underground historical resources as this Project considers increased sections of underground direct buried transmission infrastructure. However, the Cowasuck Band understands the importance of the Project but likewise understands that the Project must be done in the public's best interests, carefully constructed, and fully aware of the impacts that it will have on the historical resources of the state of New Hampshire.

The Cowasuck Band is entering into the SEC application process as an intervening party in our "best good faith" efforts and understandings of the process. At no point in this process do we wish to negate or diminish our Tribal Rights or to avail ourselves to due legal process. Under no circumstances do we believe that any New Hampshire division, department, agency, or official is in a superior position in regard to Indigenous (Native American Indian) matters or to our standing as a Indigenous tribal authority.

The Cowasuck Band of the Pennacook-Abenaki People respectfully wish to work with all parties to make this process a successful endeavor.

Thank you in advance for your timely consideration to our petition to intervene.

Sincerely,



Paul W. Pouliot
Sag8mo - Cowasuck Band of the Pennacook-Abenaki People

This document is authenticated under the authority of our tribal seal on this 16th day of March 2016.

cc: Brian Mills, DOE
Caitlin A. Callaghan, DOE
SEC Distribution List of Docket No. 2015-06 - Copies sent by email

From: [Mills, Brian](#)
To: [Travis Beck](#)
Subject: FW: from the National Trust for Historic Preservation
Date: Wednesday, October 7, 2015 7:37:36 AM

Comment?

-----Original Message-----

From: Rebecca Harris [<mailto:rharris@savingplaces.org>]
Sent: Wednesday, October 07, 2015 9:28 AM
To: Mills, Brian <Brian.Mills@hq.doe.gov>
Subject: from the National Trust for Historic Preservation

Dear Mr. Mills,

As a courtesy, I am writing to give the Department of Energy advance notice that this morning the National Trust for Historic Preservation will be naming the scenic and historic places along the Northern Pass transmission route a National Treasure. National Treasures are a portfolio of highly-significant historic places throughout the country where the National Trust makes a long-term commitment to find a preservation solution. For more information on our National Treasures program, visit www.savingplaces.org <<http://www.savingplaces.org>> .

We commend the Department of Energy for requiring the supplement to the Draft Environmental Impact Statement for Northern Pass. We look forward to working with the Department to ensure that New Hampshire's communities, scenic landscapes, and historic places are given careful consideration and that the impacts of Northern Pass are minimized to the fullest extent.

Sincerely,

Rebecca Harris

Rebecca Harris | Field Officer
P 617.523.0885 x44223 F 617.523.1199

NATIONAL TRUST FOR HISTORIC PRESERVATION
Boston Field Office
7 Faneuil Hall Marketplace, 4th Floor, Boston, MA 02109
www.PreservationNation.org <<http://www.preservationnation.org/>>

<http://www.preservationnation.org/assets/photos-images/nthp/LOGO_email.png>

0160-1

Thank you for your comment. Commenter's information regarding the status of scenic and historic places along the proposed Northern Pass project route as a National Treasure. DOE is addressing potential adverse effects to historic properties, including cultural landscapes listed in the National Register of Historic Places (NRHP) or eligible for listing in the NRHP, in accordance with Section 106 of the National Historic Preservation Act and its implementing regulations. For more information, see Sections 1.6 and 3.1.8.

0160-1

Northern Pass EIS Website Comment Receipt

Refers to Comment placed on Dec 18, 2015

ID: 8624

Date Entered: Dec 18, 2015

Source: Website

Topics:

Name: Richard Boisvert

Organization: NHSHPO

Title: Deputy State Historic Preservation Officer

Email: richard.boisvert@dcr.nh.gov

Mailing Address: 19 Pillsbury Street

City: Concord

State: NH

Zip: 03301

Country: US

Comment: The NHSHPO has also sent an email with the following attachment to Brian Mills.



NEW HAMPSHIRE DIVISION OF HISTORICAL RESOURCES

State of New Hampshire, Department of Cultural Resources
19 Pillsbury Street, Concord, NH 03301-3557

TDD Access: Relay NH 1-800-735-2964
www.nh.gov/cultural

603-271-3493
603-271-3558
FAX 603-271-3434
preservation@nh.gov

December 18, 2015

Brian Mills, Director
Electricity Delivery and Energy Reliability
U.S. Department of Energy
1000 Independence Ave, SW
Washington, DC 20585

Re: Draft Environmental Impact Statement
Northern Pass Transmission Line Project

Dear Mr. Mills:

This letter is in response to your request for comments on the Draft Environmental Impact Statement (DEIS) for the Northern Pass Transmission Line Project.

The cultural resources sections of the DEIS were prepared prior to the full identification of archaeological sites and architectural/above-ground historical properties within the project area. Resource identification is in the early phases of the project's review under Section 106 of the National Historic Preservation Act, and a full list of potentially affected resources, both archaeological and above-ground, has not been defined. Given the incomplete body of research available to consider potential impacts, the New Hampshire Division of Historical Resources, State Historic Preservation Office (NHSHPO) can only provide feedback on the limited information in the document. The NHSHPO recognizes that as the Section 106 review is completed, the list of affected resources presented in the DEIS may change, as may assessments of impact and/or effect and the need for measures to minimize harm or mitigate adverse effects to cultural resources. With this caveat, the NHSHPO has the following specific concerns/comments:

- Does the listing of archaeological sites and sensitive areas presented by the DOE consultant, SEARCH, include all of the sites and sensitive areas identified by the applicant's consultant, VBI?
- In numerous places, the draft DEIS concludes that operations, maintenance and emergency repairs "would not result in any further surface or subsurface disturbance" and therefore present no additional impacts. Because the NHSHPO has found that operations, maintenance and emergency repairs of transmission lines may result in ground disturbance, it cannot agree with this statement. Adverse impacts will be avoided only if all archaeological sites within the corridor have been identified and mitigated through the completion of all phases of investigation, or if a Cultural Resources Management Plan, approved by the NHSHPO and DOE, is in active use.



0161-1

Thank you for your comment. The federal NEPA review, federal Section 106 of the National Historic Preservation Act of 1966 ("NHPA") process, and NH SEC process are separate, independent processes, each with its own schedule. DOE is coordinating its compliance with Section 106, in a manner consistent with 36 C.F.R. Section 800.8, with the pertinent standards of the National Environmental Policy Act of 1969 ("NEPA") pursuant to 40 C.F.R. Sections 1500-1508. DOE's final EIS will contain the appropriate level of information on cultural resources, informed by DOE's Section 106 process for the proposed Northern Pass project. Both the NEPA review and Section 106 process inform DOE's decision whether or not to issue a Presidential permit for the proposed Northern Pass project. The EIS incorporates resource information considered by DOE in the Section 106 process at the time the final EIS was prepared. The Section 106 process will consider additional resource information through implementation of the Section 106 programmatic agreement. Section 1.4.3 of the Cultural Resources Technical Report has been updated to reflect the information considered by DOE in the Section 106 process at the time the final EIS was prepared.

0161-2

Thank you for your comment. Section 4.1.8.2 of the EIS and Section 3 in the Cultural Resources Technical Report have been revised to address the potential impacts of operations, maintenance, and emergency repairs. Additionally, Appendix B in the Technical Report has been revised to reflect related stipulations in the programmatic agreement.

0161-1

0161-2

- What was the methodology employed in the identification of the number of Architectural Resources Potentially Impacted? Are cultural landscapes included in this count? Section 3.1.8 Historic and Cultural Resources does not note landscapes as potential resources, and the NHPD remains concerned that this category of resource has not been considered in the identification process. Given that the Project Area Forms have not been finalized, a more comprehensive discussion on the methodology and resource type should be presented.
- By definition in state statute, the New Hampshire State Register of Historic Places is not a regulatory program; therefore, State Register listing should not be used as a criterion in a NEPA or Section 106 review. State Register properties should be re-assessed according to National Register criteria during the Section 106 Identification phase, if they are potentially affected by the project.
- NHPD has significant concerns regarding actions outlined in Appendix H. This was prepared by the Applicant with no consultation with the NHPD or Section 106 Consulting Parties. NHPD expressed similar concerns regarding Attachment 5 of the proposed Programmatic Agreement, which includes many of the same measures. Our correspondence of December 16, 2015 (see attached) specifies these concerns. These same concerns should be considered as part of our comments under the DEIS review.

As you know, NHPD is currently in consultation with your agency and others on the development of a Programmatic Agreement that will assist in the completion of the Section 106 process for the project. As the Section 106 process moves forward, we expect the information provided will help inform that final EIS and provide commitments that will be codified under the Record of Decision.

Thank you for this opportunity to provide comment.

Sincerely,



Richard A. Boisvert
State Archaeologist
Deputy State Historic Preservation Officer

Cc: Brian Lusher, ACHP
Sarah Jordan, WMNF
David Keddell, ACOE

0161-3

Thank you for your comment. Identification of architectural resources potentially impacted by the proposed Northern Pass project is guided by identification of cultural resources and historic properties within the area of potential effects ("APE") [36 CFR Section 800.16(d)] – which is determined by DOE, through consultation, for DOE's review of the proposed Northern Pass project in accordance with Section 106 of the National Historic Preservation Act of 1966 ("NHPA") – and a viewshed analysis to determine whether the identified cultural resource or historic property is within the zone of visual interest (ZVI) which is the area from which the components of the proposed are theoretically visible. Cultural landscape studies are being conducted through the Section 106 (of the National Historic Preservation Act of 1966 ("NHPA")) process in accordance with guidance from NH DHR regarding how cultural landscape studies should be identified and documented. These studies will evaluate the significance, integrity, and National Register eligibility of any cultural landscapes that exist within the Pemigewasset River Valley and the Suncook River Valley. In light of these studies, NPT will also determine whether additional cultural landscapes are present in the Great North Woods Project Area or other areas in the vicinity of the proposed Northern Pass project. NH DHR's guidance is based on California's General Guidelines for Identifying and Evaluating Historic Landscapes. The cultural landscape studies were not completed at the time the final EIS was being prepared. Additional information has been added to Section 3.1.8 of the EIS regarding the methodology employed, including cultural landscapes. Sections 1.4.3 and 1.4.4 in the Cultural Resources Technical Report have been revised to discuss the methods used in the identification of the number of architectural resources potentially impacted. Cultural landscapes are not included in this count because they have not yet been identified. Section 1.4.8 in the Technical Report has been added to discuss the New Hampshire Division of Historical Resources' (DHR) scope of work for addressing cultural landscapes for the Northern Pass Project. Additionally, Appendix B in the Technical Report has been revised to reflect stipulations in the programmatic agreement that address the identification and evaluation of cultural landscapes. Cultural landscapes will be identified and evaluated for eligibility for the National Register of Historic Places using DHR's scope of work.

0161-4

0161-5

0161-6

0161-7

0161-4

Thank you for your comment. Cultural landscape studies are being conducted through the Section 106 (of the National Historic Preservation Act of 1966 ("NHPA")) process in accordance with

guidance from NH DHR regarding how cultural landscape studies should be identified and documented. These studies will evaluate the significance, integrity, and National Register eligibility of any cultural landscapes that exist within the Pemigewasset River Valley and the Suncook River Valley. In light of these studies, NPT will also determine whether additional cultural landscapes are present in the Great North Woods Project Area or other areas in the vicinity of the proposed Northern Pass project. NH DHR's guidance is based on California's General Guidelines for Identifying and Evaluating Historic Landscapes. The cultural landscape studies were not completed at the time the final EIS was being prepared. As part of the Section 106 process, DOE completed the project area forms ("PAFs"), as documented in the Section 106 programmatic agreement. The updated information has been incorporated into the EIS. Section 3.1.8 of the EIS has been revised to provide additional information about the cultural landscape studies for the proposed Northern Pass project. Section 1.4.7 in the Cultural Resources Technical Report has been added to discuss the state DHR's scope of work for addressing cultural landscapes for the Project. Appendix B in the Technical Report has also been revised to reflect stipulations in the programmatic agreement that address the identification and evaluation of cultural landscapes.

0161-5

Thank you for your comment. State register listing information has been removed from relevant portions of Sections 2 and 3 in the Cultural Resources Technical Report to avoid implying that this descriptive information is being used as a criterion in this EIS process or in the Section 106 review. Appendix B in the Technical Report has also been revised to reflect additional investigations to identify historic properties assess potential adverse effects, and avoid, minimize, or mitigate those effects.

0161-6

Thank you for your comment. Appendix H of the EIS includes a list of Applicant-Proposed Impact Avoidance and Minimization Measures (APMs) considered in the EIS process. APMs are submitted by an applicant through the NEPA process. DOE considers APMs to be part of "the project" for purposes of determining the environmental impact under NEPA and any adverse effect under Section 106. APMs do not represent agreed upon measures to avoid, minimize, or mitigate adverse effects related to Section 106, but may help inform discussion during the Section 106 process about resolution of adverse effects. Additional mitigation measures related to cultural and historic

resources may be developed through the ongoing Section 106 consultation process with the State Historic Preservation Office and Consulting Parties.

0161-7

Thank you for your comment. DOE is coordinating its compliance with Section 106 and the applicable NEPA requirements in a manner consistent with 36 C.F.R. Section 800.8 and, to the extent practicable, *NEPA and NHPA: A Handbook for Integrating NEPA and Section 106*. DOE's final EIS contains the appropriate level of information on cultural and historic resources, informed by DOE's Section 106 process to the extent possible, for the proposed Northern Pass project. Both the NEPA review and Section 106 process inform DOE's decision whether or not to issue a Presidential permit for the proposed Northern Pass project. DOE would issue a ROD for its Presidential permit decision for the proposed Northern Pass project no sooner than 30-days following the issuance of the Environmental Protection Agency's Notice of Availability of the Final Environmental Impact Statement for the project in the Federal Register. Information about historic and cultural resources from the Section 106 process has been incorporated into EIS Section 3.1.8, while Section 1.4.2 of the Cultural Resources Technical Report has also been updated to include additional information from the Section 106 process.



NEW HAMPSHIRE DIVISION OF HISTORICAL RESOURCES

State of New Hampshire, Department of Cultural Resources
1970 Library Street, Concord, NH 03301-5570
TDD Access: Relay NH 1-800-735-2964
www.nh.gov/doh
603-271-2499
603-271-3598
FAX 603-271-3433
preservation@doh.nh.gov

December 16, 2015

Brian Mills
Office of Electricity Delivery and Energy Reliability
US Department of Energy
1000 Independence Ave SW
Washington, DC 20585



0161-8

Thank you for your comment. The redacted portion of the comments is related to a preliminary review draft document arising out of consultation with Section 106 Consulting Parties in accordance with 36 C.F.R. § 800.2(c) and is not relevant to the EIS. The comment will be addressed through DOE's Section 106 process for the proposed Northern Pass project.

0161-8



Sincerely,

Edna Feighner, NIDIR
Review and Compliance Coordinator, Archaeologist

Cc: R. Boisvert, State Archaeologist, Deputy SHPO
Caitlin Callaghan, DOE
Brian Lusher, ACHP





Northern Pass EIS Website Comment Receipt

0163-1

Thank you for your comment.

Refers to Comment placed on Aug 10, 2015

ID: 8268**Date Entered:** Aug 10, 2015**Source:** Website**Topics:** Vegetation, Wildlife, Viewshed/Scenery, Water / Wetlands, Recreation, Tourism, Quality of Life, Forest Service Lands**Name:** Merryl Goldman**Organization:****Email:** diffdrmr@msn.com**Mailing Address:** 1781 Fowler River Road**City:** Alexandria**State:** NH**Country:** US

Comment: As a resident, landowner and taxpayer in the State of New Hampshire I am protesting Northern Pass!
This project will adversely effect our land, wildlife, scenery, tourism, and quality of life!
We gain much more by leaving our beautiful state alone and not stringing high tension wires across our mountains and landscapes!
We do not benefit from this project and risk destroying all that we find valuable and beautiful!
Please vote NO to NORTHERN PASS!

0163-1

Northern Pass EIS Website Comment Receipt

0164-1

Thank you for your comment.

Refers to Comment placed on Aug 11, 2015

ID: 8270

Date Entered: Aug 11, 2015

Source: Website

Topics: Private Property/Land Use

Organization:

Comment: No Northern pass....bury the lines down the interstate as is being done in VT. Give the money to the state...

0164-1

Northern Pass EIS Website Comment Receipt

0165-1

Thank you for your comment.

Refers to Comment placed on Aug 11, 2015

ID: 8271

Date Entered: Aug 11, 2015

Source: Website

Topics: Alternatives, Health and Safety, Recreation, Tourism, Quality of Life

Organization:

Comment: The Northern pass is not good for NH. Like many NH residents I like here for the natural beauty. I ski,hike and Live in proposed route of towers and high voltage wires. Not ok to destroy natural beauty and health risks. Also loss of tourist dollars for northern NH. Northern pass is not good for NH or NH people. I am against Northern pass

0165-1

Northern Pass EIS Website Comment Receipt

0166-1

Thank you for your comment.

Refers to Comment placed on Aug 11, 2015

ID: 8272**Date Entered:** Aug 11, 2015**Source:** Website**Topics:** Tourism, Quality of Life**Name:** Debra Freedman**Organization:** 150 MAIN STREET LODGING ON THE ANDROSCOGGIN**Title:** Proprietor**Email:** info@lodgingontheandroscoggin.com**Mailing Address:** P.O. Box 40**Mailing Address:** 150 Main Street**City:** Errol**State:** NH**Country:** US**Comment:** Dear Sirs:

As a resident and small business owner in Errol, NH, I am vehemently against Northern Pass. The sight of any towers will destroy the only thing we have left up here for economic success i.e. TOURISM! The Purpose of this Northern Pass is bred from greed by Hydro Quebec and Eversource/PSNH! NH does not have a shortage of electricity! These towers WILL affect peoples health - especially if they are built near homes/farms, etc...It will also harm wildlife and DESTROY the beautiful scenery ONLY found in the North Country. It will destroy our quality of life and destroy what is left of our local economy. If IT has to happen for whatever reason - BURY EVERY LINE - NO TOWERS!!! I IMPLORE you to do whatever you can to STOP this! Thank you for listening. Sincerely, Deb Freedman

0166-1

Northern Pass EIS Website Comment Receipt

0167-1

Thank you for your comment.

Refers to Comment placed on Aug 11, 2015

ID: 8273

Date Entered: Aug 11, 2015

Source: Website

Topics: Purpose and Need

Organization:

Comment: Northern Pass would destroy New Hampshire. The project needs to find a different state to go through. It has been five years of debate on alternative routes. It is clear that there can be NO ROUTE from Quebec through the entire state of NH. Purpose and need is part of the question. There is no purpose but monetary gain for NP and no need for the energy in NH. Destruction of an entire state and its people is not justified.

0167-1

Northern Pass EIS Website Comment Receipt

0170-1

Thank you for your comment.

Refers to Comment placed on Jul 29, 2015

ID: 8237

Date Entered: Jul 29, 2015

Source: Website

Topics: Purpose and Need, Alternatives, Vegetation, Viewshed/Scenery, Recreation, Private Property/Land Use, Taxes, Economic, Tourism, Quality of Life, Cumulative Effects

Name: Susan Schibanoff

Organization: North Country editorial blasts NPT

Country: US

Comment: Coös County Democrat
Littleton Courier

WEDNESDAY, JULY 29, 2015
Editorial Opinion

A devastating blow to Northern Pass

On July 21, a major victory was won for those who oppose Northern Pass. The five-year process leading to the project's draft environmental impact statement (DEIS) ended with the U.S. Department of Energy releasing the long awaited document. The department concluded that the proposal for nearly 180 miles of huge electricity towers would damage our tourist economy and the great views that make life in the North Country a continuous treat.

The DEIS suggested several alternative routes for Northern Pass, the PSNH/Eversource proposal to bring HydroQuebec power to the New England grid using, almost exclusively, mammoth transmission towers through New Hampshire. Because of the dreadful visual impact from the tall towers, many alternatives in the DEIS call for underground lines, as so many people from Northern New Hampshire have suggested for years. We were speaking, but Northern Pass was not listening.

Northern Pass issued statements about the DEIS. Totally avoiding how the DEIS hurts the project's momentum, the statements focus on the need for additional energy and how the Northern Pass permitting process will continue. Interestingly, Northern Pass credits the input received from citizens about the project. Nowhere has Northern Pass acknowledged the major strategic error in its continuing reluctance to consider what has clearly become the only option that stands any chance of winning the support of the North Country — burying the lines.

Noting the energy crisis New England faces, recent statements from Northern Pass imply our state

0170-1

would benefit from the extra supply and the subsequent lower costs. Yet, the project's benefit to New Hampshire's electricity consumers has never been clear. As far as lowering our high power rates, Northern Pass meekly states, "We continue to believe that Northern Pass is an important part of the answer." They just cannot seem to accept that the fat cats in two countries trying to push Northern Pass on us never bothered to ask whether residents of our region love our precious land, trees, and views. Generations of people here know the answer, and we do not need a corporate monstrosity looking to spoil our state while lecturing us on the need for new energy sources.

The DEIS notes how burying the lines would double the cost to build Northern Pass, but would also double the number of construction jobs compared to above ground lines. How Northern Pass responds to that fact will be interesting to see. Also, the DEIS found, towns most affected by the proposed overhead lines would gain the least amount of property tax revenue from the Northern Pass infrastructure that would weave its way through towns from Pittsburg south.

Many people deserve credit for ensuring the DEIS captured the brutal devastation Northern Pass would bring to our region. Landowners turned away millions by refusing to sell their land to Northern Pass, devoted residents took many trips to Concord and elsewhere to find out more and have their voices heard, and people made the orange protest color central to their wardrobe.

The final battle has not been won, but the above ground towers cannot realistically happen because of the big slap to the face the U.S. Department of Energy delivered to Eversource and HydroQuebec last week. This major victory belongs to us all. Thanks and congratulations to those who made such a triumph possible

Northern Pass EIS Website Comment Receipt

0171-1

Thank you for your comment.

Refers to Comment placed on Jul 30, 2015

ID: 8238

Date Entered: Jul 30, 2015

Source: Website

Topics: Environmental Justice

Organization:

Comment: Of course clean, renewable energy sounds great until you learn the truth. Our state will now be dependent on Canada for our energy needs! Rather than spend the 1.4 billion dollars on this project, why not invest that into developing clean energy sources here in the US. Ever source, PSNH- I can't even get a customer service rep on the phone, unless to pay a bill and I'm going to trust what they tell me. Billions back in energy savings- this is NH's Big Dig! 1.4 billion is their estimation and if this passes I'm sure it won't be long before that number grows and our savings diminish. More jobs? Short sited- once this project is completed so will those jobs. If you take a minute and look at the map, where these lines are slated to go, you'll see it pass right through some of the most scenic and beautiful areas of NH, our White Mountains, Woodstock, Lincoln, Campton, Sugarhill, Canterbury down through Concord- that's only 6 of the 31 towns listed. We're talking 95,000 acres through out our state and the towers are massive, much larger in width and height than what we're use to. If you took the time to read this...thank you!

0171-1



Regional Planning Commission & Economic Development District

New Hampshire Site Evaluation Committee
 Pamela G. Monroe, Administrator
 21 South Fruit Street, Suite 10
 Concord, NH 03301

Mr. Brian Mills
 Office of Electricity Delivery and Energy Reliability (OE-20)
 U.S. Department of Energy
 1000 Independence Avenue, SW
 Washington, DC 20585

Re: SEC Docket No. 2015-06; DOE EIS 0463

Dear Ms. Monroe and Mr. Mills:

Please find below our written testimony to accompany our oral presentations at the March 7 and March 14 public hearings regarding the proposed Northern Pass transmission line.

Orderly Development of the Region

North Country Council is the state-designated regional planning commission for the proposed route of the Northern Pass transmission line from the Canadian border to the Plymouth-Bridgewater line. We are responsible under state law to prepare a coordinated plan for the development of the region to encourage the most appropriate use of land. Accordingly, NH RSA 162-H:16 requires the SEC to take the views of the regional planning commission into account in determining whether issuance of the certificate would interfere with the orderly development of the region.

Our current regional plan was adopted in 2014. The plan was developed after two years spent asking the residents of the region what their highest priority need was, and what qualities of the region were most important to them. We asked in many different ways, in many different settings. Public engagement tools included a detailed UNH Survey Center phone survey; one-on-one conversations at open houses, a food shelf and the Lancaster Fair; local officials' roundtables; suggestion boxes at laundromats, town offices and libraries; and an on-line tool. We thought we might hear a wide variety of things and worried we might receive competing or conflicting marching orders, but we didn't. Through this process we were able to generate a consensus-based regional plan aimed at addressing the region's highest priority need - livable wage jobs with benefits, that are built on, or at least compatible with, stewardship of the region's scenic natural environment and recreation opportunities. The plan emphasizes taking care of what we have and building on our strengths, such as our scenic natural environment, to

increase prosperity, while reducing the cost of living through such means as local energy production.

The regional plan contains the following strategy statement:

Protect the region's iconic and popular viewsheds from undue adverse impacts associated with incompatible land uses such as large transmission lines like Northern Pass through such means as legislative restriction and participation in EIS and permit reviews.

Alternatives 4 and 6, which provide for burial in roadway corridors throughout our region, would be consistent with the region plan's emphasis on the scenic natural environment as a foundation for the orderly development of the region.

This region has the lowest incomes and wage rates in the state. Household incomes in Coos County aren't just a little bit below the statewide median, they are less than two-thirds the statewide median (ACS, US Census Bureau, File DP03: 2008-2012). Residents and economic development leaders alike recognize that this region's scenic natural environment and recreation resources are the foundation for economic growth. One reason of course is the importance of the tourism economy. When NH Employment Security did projections of job growth (and loss) for the North Country, the second highest increase in number of jobs was projected to be in the Accommodation and Food Services category (NHES, Long Range Projections for Planning Regions, North Country Council Region). But it's not just about tourism; it's also about maintaining the high quality outdoor environment that will attract young people starting businesses and families.

A second consideration relative to the orderly development of the region criterion is the impact on local energy production. Relative to reducing the cost of living in the North Country, the plan contains the following strategy statement:

Increase the region's production and use of renewable energy consistent with protection of other important natural and scenic resources.

This means that to establish that the Northern Pass proposal will not interfere with the orderly development of the region, in addition to burial of the line, the SEC must also be convinced the project won't provide a financial disincentive to the development of additional local energy generation facilities.

We urge the SEC to seriously consider the 2014 regional plan for the North Country when considering interference with the orderly development of the region.

0173-1

Thank you for your comment. Socioeconomic impacts are addressed in Section 4.1.2 of the EIS and include an assessment of impacts on electricity rates and the anticipated mix of current and future generation types. The analysis conducted did not find evidence that the Project would reduce or alter the construction of new, or reliance upon existing, renewable power sources in the U.S., other than by potentially affecting total expenditures for electricity within the market. In addition, while the comment is acknowledged, as discussed in Section 1.7.3.1 of the EIS, the SEC "is a non-federal process in which the DOE has no role." Because the SEC process and the SEC are separate and distinct from the NEPA process and the Department of Energy, the actions requested of the SEC are outside the scope of this EIS.

0173-1

Public Interest, Unreasonable Adverse Environmental Impacts

We understand that Executive Order 12038 requires the DOE to determine that a proposal is consistent with the public interest, including due consideration of environmental consequences. Similarly, NH RSA 162-H:16 requires the SEC to find that issuing a certificate will serve the public interest, including consideration of unreasonable adverse effects on aesthetics. We feel that issuance of the Presidential Permit and SEC certificate would not be in opposition to the public interest or have unreasonable adverse environmental impacts if the line is buried throughout our region.

According to the draft Environmental Impact Statement, virtually all of the negative impacts are lower, and all of the public benefits higher, for Alternatives 4 and 6 providing for burial in roadway corridors in the North Country.

According to the Draft EIS, all of the costs to the public would be lessened with burial, for example:

- Scenic impacts would be reduced
- Property values would not fall by as much
- Not as much property tax income would be lost to municipalities
- Fewer archeological resources and sensitive archeological areas would be impacted
- Fewer acres of wetland would be impacted
- There would be less loss of CO2 uptake from vegetation removal
- Fewer acres of prime farmland would be lost

The Draft EIS also shows us that all of the public benefits would be higher with burial, for example:

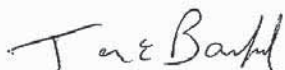
- Increased economic impacts from construction
- Higher number of construction jobs
- Increased long-term economic impacts
- Higher number of permanent jobs
- Increased statewide property tax payments

In addition, alternatives 4 and 6 provide for the same reduction in wholesale electric costs as the proposed action.

Only the cost of construction to the applicant is higher with burial, but not by orders of magnitude, not by an unreasonable amount, but by 33% in the case of alternative 6A for example.

Thank you for your consideration of our comments, and of the unusually high stakes associated with scenic impacts in our region.

Sincerely,



Tara E. Bamford
Planning Director



Dr. Barbara Robinson
Executive Director

Northern Pass EIS Website Comment Receipt

0176-1

Thank you for your comment.

Refers to Comment placed on Jul 21, 2015

ID: 8193

Date Entered: Jul 21, 2015

Source: Website

Topics: Vegetation, Wildlife, Viewshed/Scenery, Water / Wetlands, Recreation, Private Property/Land Use, Historic/Cultural, Economic, Tourism, Quality of Life, Air Quality, Cumulative Effects, Forest Service Lands

Organization:

Comment: Please stop this project, too much is at stake. As a hiker I would hate to look at these towers marring the landscape and destroying wildlife habitats. New Hampshire is not a conduit for power for other regions, we are a state dependent on tourism and this would destroy that element of our economy and ruin the state's natural beauty which cannot be replaced. PLEASE STOP!!!

0176-1

Northern Pass EIS Website Comment Receipt

0178-1

Thank you for your comment.

Refers to Comment placed on Jul 21, 2015

ID: 8196

Date Entered: Jul 21, 2015

Source: Website

Topics: Alternatives

Organization:

Comment: I believe alternative 6a is probably in the best interest of all parties it gives northern pass the straightest possible rough thru the state to accomplish there task as well as protect the environments and beauty of northern NH. I now there will be considerable time when construction is happening of delays and unsightly messes that will happen but as a lifetime resident of NH I understand progress and that we can all work together to solve problems in everyone's best interest

0178-1

Northern Pass EIS Website Comment Receipt

0179-1

Thank you for your comment.

Refers to Comment placed on Jul 21, 2015

ID: 8198

Date Entered: Jul 21, 2015

Source: Website

Topics:

Organization:

Comment: GO! Northern PASS! we need electricity

the wind towers by reason of motion & our human/ animal response to it .. MAKE us look at them.

0179-1

Northern Pass EIS Website Comment Receipt

0180-1

Thank you for your comment.

Refers to Comment placed on Jul 22, 2015

ID: 8199**Date Entered:** Jul 22, 2015**Source:** Website**Topics:****Name:** Richard Hanson**Organization:** none**Email:** rhanson14@yahoo.com**Mailing Address:** 84 Branch Turnpike #105**City:** Concord**State:** NH**Country:** US**Comment:** The only way to do this project and protect New Hampshire's beauty is to bury the entire thing.Thank you
Richard Hanson
Concord, NH

0180-1

Northern Pass EIS Website Comment Receipt

0181-1

Thank you for your comment.

Refers to Comment placed on Jul 22, 2015**ID:** 8200**Date Entered:** Jul 22, 2015**Source:** Website**Topics:** Alternatives**Name:** bill chabot**Organization:** Canaan Conservation Commission**Email:** bill.chabot@gmail.com**Mailing Address:** 294 sawyer hill rd**City:** canaan**State:** NH**Zip:** 03741**Country:** US**Comment:** Options 4a & 4b are the only viable options to preserve the quality of the park for the public to enjoy. I am strongly against this project as it stands, as well as option 3. Thank you.

0181-1

Northern Pass EIS Website Comment Receipt

0182-1

Thank you for your comment.

Refers to Comment placed on Jul 22, 2015

ID: 8201**Date Entered:** Jul 22, 2015**Source:** Website**Topics:** Purpose and Need, Alternatives, Wildlife, Viewshed/Scenery, Tourism, Quality of Life**Name:** Thomas McLoughlin**Organization:** Mr**Email:** tmcloughlin@kearsarge.org**Mailing Address:** 206 Shaker st**City:** North sutton**State:** NH**Zip:** 02360**Country:** US

Comment: The entire line should be buried NH protects and values its natural beauty, this is our childrens inheritance. 21st century energy projects should not be using 19th century transmission technology to send energy that is not needed in NH to the States to our south.

0182-1

Northern Pass EIS Website Comment Receipt

0183-1

No comment was provided.

Refers to Comment placed on Jul 22, 2015

ID: 8202

Date Entered: Jul 22, 2015

Source: Website

Topics: Viewshed/Scenery, Private Property/Land Use, Economic, National Security, Tourism, Cumulative Effects, Environmental Justice, Other

Name: Jonathan Tremblay

Organization: Green party

Email: jonathan.tremblay@prescott.edu

Mailing Address: 50 a dale road

City: Hooksett

State: NH

Zip: 03106

Country: US

Comment:

| 0183-1

Northern Pass EIS Website Comment Receipt

0184-1

Thank you for your comment.

Refers to Comment placed on Jul 22, 2015

ID: 8203

Date Entered: Jul 22, 2015

Source: Website

Topics: Tourism

Organization:

Comment: NO to Northern Pass - tourists go north to see the beauty and wonder, NOT powerlines!

0184-1

Northern Pass EIS Website Comment Receipt

0186-1

Thank you for your comment.

Refers to Comment placed on Aug 10, 2015

ID: 8260

Date Entered: Aug 10, 2015

Source: Website

Topics: Purpose and Need, Alternatives, Health and Safety, Vegetation, Wildlife, Viewshed/Scenery, Water / Wetlands, Soils, Recreation, Private Property/Land Use, Taxes, Historic/Cultural, Economic, Traffic, National Security, Tourism, Quality of Life, Air Quality, Cumulative Effects, Noise, Forest Service Lands, NEPA Process, Design Criteria / Mitigation Measures, Environmental Justice

Organization:

Comment: Bury or nothing at all. Not needed!!

| 0186-1

Northern Pass EIS Website Comment Receipt

0187-1

Thank you for your comment.

Refers to Comment placed on Aug 10, 2015

ID: 8261**Date Entered:** Aug 10, 2015**Source:** Website**Topics:** Purpose and Need, Health and Safety, Viewshed/Scenery, Private Property/Land Use, Historic/Cultural, Economic, Tourism, Quality of Life, Air Quality**Name:** Fred DeCicco**Organization:****Title:** Fred DeCicco**Email:** frednh92051@gmail.com**Mailing Address:** 28 Terrace Rd**City:** Thornton**State:** NH**Zip:** 03285-6426**Country:** US

Comment: This project goes against everything that New Hampshire means to residents and tourists. Destroys natural environment, threatens wildlife, is a blight on the landscape, a health hazard, generates no economic benefits. Bury it or forget it.

0187-1

Northern Pass EIS Website Comment Receipt

0188-1

Thank you for your comment.

Refers to Comment placed on Aug 10, 2015

ID: 8262**Date Entered:** Aug 10, 2015**Source:** Website**Topics:****Name:** Mary Bearir**Organization:****Title:** Mrs.**Email:** mcb802@aol.com**Mailing Address:** Box 7**Mailing Address:** 65 Johnson Lane**City:** Colebrook**State:** NH**Zip:** 03576**Country:** US

Comment: Northern Pass is antiquated technology, the ramifications of which will scar New Hampshire until Time Immemorial. And all this for an unwanted, unnecessary money-making project for a non-American conglomerate! NH is already an exporter if electricity. Tap into THAT to send to MA and CT, Mary Caprio Bearor

0188-1

Northern Pass EIS Website Comment Receipt

Refers to Comment placed on Aug 10, 2015

ID: 8263

Date Entered: Aug 10, 2015

Source: Website

Topics: Purpose and Need, Alternatives, Viewshed/Scenery, Recreation, Private Property/Land Use, Tourism, Design Criteria / Mitigation Measures

Name: Nick Tulloh

Organization:

Email: nicktulloh@comcast.net

Mailing Address: 313 Newmarket Rd

City: Durham

State: NH

Zip: 03824

Country: US

Comment: I have lived in NH for 44 years and have never seen anything like this. The genesis of Northern Pass is questionable at best. The thousands of acres of flooded land and displaced Native Americans alone dirty this 'green' project. To think that the people of NH would stand for the desecration of the natural scenery is naive at best. NH has no need for additional electric power and if it did, it should source it from true renewables - ie solar and wind. The jobs created will be temporary and the permanent ones will be few. The company has lied to the public since day one. I don't want this in the state, buried or not.

0189-1

Thank you for your comment. Potential impacts in Canada from the construction and operation of electricity infrastructure, including hydropower generation and transmission in Canada, are beyond the scope of this NEPA analysis. NEPA does not require an analysis of potential environmental impacts that occur within another sovereign nation that result from actions approved by that sovereign nation. Additionally, the construction and operation of Hydro-Quebec power generation projects and electricity transmission line projects in the bulk Hydro-Quebec system will occur regardless of and independent to whether DOE issues a Presidential permit for the proposed Northern Pass Project international border crossing. For these reasons, potential environmental impacts in Canada are not addressed in this EIS. Section 1.5.4.1 of the Final EIS has been updated in response to this comment.

0189-1

Northern Pass EIS Website Comment Receipt

0190-1

Thank you for your comment.

Refers to Comment placed on Aug 10, 2015

ID: 8265**Date Entered:** Aug 10, 2015**Source:** Website**Topics:** Purpose and Need, Vegetation, Wildlife, Viewshed/Scenery, Recreation, Private Property/Land Use, Economic, Tourism, Quality of Life, Cumulative Effects, Noise, Other**Name:** James Powers**Organization:****State:** MA**Country:** US

Comment: The only facts thus far are that a few people want to ravage the landscape to benefit themselves and sell power to NH, MA, RI and Ct. There are no facts about rates or the names of those that will benefit. There are no facts about the agreement between Canada and this company. It is an utter political joke.

0190-1

Northern Pass EIS Website Comment Receipt

0191-1

Thank you for your comment.

Refers to Comment placed on Aug 10, 2015

ID: 8267

Date Entered: Aug 10, 2015

Source: Website

Topics: Purpose and Need

Organization:

Comment: The purpose of this transmission project is irrelevant to the residents of NH. NH does NOT need another means to bring electric power through the state, as we already generate far more than we need, and many residents are poised to install solar PV. Furthermore, the addition of other powerlines being buried in Vermont and Maine, make this project even less viable because its principals insist on using this line to establish Rights of Ways where they have none... which means that there will be more powerlines in the future, once they have established their beach head...the Northern Pass - it's not just one Pass though, it's obviously the first one of several. Hydro Quebec and the portion of Northeast Utilities that will benefit from this merchant powerline have no business in NH - no purpose, and there is no need. The only reason they are trying to go through NH is to get paid about \$62 million per year for the use of their Rights of Way. And with that money, they will fight the towns along those Rights of Way to lower the tax liabilities so that they can keep their \$62 million for themselves. This powerline is not needed, and neither are the troubles it will bring to the communities that it will divide and conquer. The DOE, SEC, and all NH and Federal agencies who are vetting this line should make sure that this project does not get built because it is not needed, and serves no good purpose for those residents who will be most severely harmed by building it.

0191-1

Northern Pass EIS Website Comment Receipt

0192-1

Thank you for your comment.

Refers to Comment placed on Aug 13, 2015

ID: 8292

Date Entered: Aug 13, 2015

Source: Website

Topics: Cumulative Effects

Organization:

Comment: The entire project must be buried and run along roadways. Connecticut could get power from the ocean, - we don't need to supply southern NE at the expense of our lovely scenery. No to Northern Pass unless it is completely underground.

0192-1

Northern Pass EIS Website Comment Receipt

0193-1

Thank you for your comment.

Refers to Comment placed on Aug 14, 2015

ID: 8296

Date Entered: Aug 14, 2015

Source: Website

Topics: Purpose and Need

Organization: na

Comment: Those of us you enjoy the quality of out door life in the White Mountains don't want to have to look at above ground power lines. I've already seen the impact of people who are trying to sell homes that are in the path of this possible eye sore. If the power is needed so much have the lines buried. There is no upside to this to the citizens of the State of New Hampshire. It appears to me this is more about Corporate Profits then being a good corporate citizen.

0193-1

0194-1

Thank you for your comment.

From: Donna Lobsien <cooker_upper1@yahoo.com>
Sent: Monday, August 03, 2015 5:58 PM
To: draftEIScomments@northernpasseis.us
Subject: northern pass draft EIS

Dear sirs.

Maybe you are not listening to the people of New Hampshire. We do not want this Northern Pass project. We do not need this Northern Pass Project. We already have a line from Canada that services our area. It works well. We don't need another or one that will blemish or beautiful state. We don't need the few jobs it will generate by sacrificing the environment. How many people must object before you realize WE DON'T WANT NORTHERN PASS!!!!

Thank you for your attention,

D. Lobsien
Deerfield, NH

0194-1

0195-1
Thank you for your comment.

From: Gene Hornsby <gene.hornsby@outlook.com>
Sent: Friday, July 31, 2015 1:00 PM
To: draftEIScomments@northernpasseis.us
Subject: Northern Pass Draft EIS Comments."

Hi,

If this project must go forward, and I sincerely hope it doesn't, then Alternative 4 burying the entire transmission line, as a small section near the Canadian border is the appropriate choice. The great resource of New Hampshire is her natural beauty, and this project, if above ground would severely impact this resource. Transmission towers, especially the ones outlined in the plan are eyesores to say the least.

0195-1

Best regards,

Gene Hornsby
Landowner
North Pembroke Road
Pembroke, NH

From: jean public <jeanpublic1@gmail.com>
Sent: Wednesday, August 05, 2015 1:28 PM
To: DRAFEISCOMMENTS@NORTHERNPASSEIS.US; vicepresident@whitehouse.gov;
 AMERICANVOICES@MAIL.HOUSE.GOV
Subject: Re: Delivery Status Notification (Failure)

PLEASE FORGIVE MY MISPELLING OF YOUR ADDRESS AND HERE IS MY COMMENT FOR THE PUBLIC RECORD.

On Wed, Aug 5, 2015 at 3:24 PM, Mail Delivery Subsystem <mailer-daemon@googlemail.com> wrote:
 Delivery to the following recipient failed permanently:

DRAFEISCOMMENTS@NORTHERNPASSEIS.US

Technical details of permanent failure:

DNS Error: Address resolution of northernpasseis.us. failed: Domain name not found

----- Original message -----

DKIM-Signature: v=1; a=rsa-sha256; c=relaxed/relaxed;
 d=gmail.com; s=20120113;
 h=mime-version:in-reply-to:references:date:message-id:subject:from:to
 :cc:content-type;
 bh=OTka1NXDvfkJPD55LKXScWsB5Rj4XaH30Rn5woel1sbg=;
 b=J4yahHFpeL2AORG5GRBKcJnFG1UCZw68+L8oIsfe25T/PdfrCWZxhT9KY45L2BKfDe
 JXQXXkZFPueC2SOsjDumlTP87bkFHJcISWC935Z3Cu0bUihGKLqR4w0d0CjQQQrp+65
 3OXRLYOMBXGrmUc5wp1nC1adVU7OiKNqLWYaum3jKyy7hMOQyA9SH84AK712F8CZSHQx
 ri2dFW5VM5f/JUJ4YNV/56outEGDstsAGamLd6nZX0UkWkpVurqdQxyHRY+t4+Y5mFcZg
 7hqOfmgGi+yVaGliLimYVszB221y1iep9yIIB9MUWihASTQcXp404ccK3yR31LwgIXnM
 RlBA==

MIME-Version: 1.0

X-Received: by 10.112.42.172 with SMTP id p12mr6986864lbl.52.1438802659819;

Wed, 05 Aug 2015 12:24:19 -0700 (PDT)

Received: by 10.25.30.72 with HTTP; Wed, 5 Aug 2015 12:24:19 -0700 (PDT)

In-Reply-To: <ieq.mhbgg.q4n03f@e2ma.net>

References: <ieq.mhbgg.q4n03f@e2ma.net>

Date: Wed, 5 Aug 2015 15:24:19 -0400

Message-ID: <CAKkv051ri8uz9OEcfl-qKW420LyLtgLmkGVpCQ0bXgDxsExQWg@mail.gmail.com>

Subject: Re: DOE Northern Pass Draft EIS Notice of Availability Published

From: jean public <jeanpublic1@gmail.com>

To: DRAFEISCOMMENTS@NORTHERNPASSEIS.US, BRIAN.MILLER@HQ.DOE.GOV,
INFORMATION@sierraclub.org, INFO@peer.org, info <info@earthjustice.org>,
foe@foe.org, The Pew Charitable Trusts <info@pewtrusts.org>, PETA Info <info@peta.org>,
INFO@foa.org,

humanelines@hsus.org, SCOOP <SCOOP@huffingtonpost.com>

Cc: ASKNEPA@HQ.DOE.GOV

Content-Type: multipart/alternative; boundary=001a1134d44e70c633051c955996

0196-1

PUBLIC COMMENT ON FEDERAL REGISTER

WE NEED TO STOP ALLOWING OUR NATIONAL OPEN SPACE SITES TO BE UTILIZED BY PROFITEERS LIKE THIS ONE. THEY SEEM TO GET A FREE PASS TO TEAR UP SPACES WE HAVE PAID FOR FOR THE PURPOSE OF HAVING OPEN SPACE FOR BIRDS AND TREES AND ANIMALS TO LIVE IN. THEY CANNOT LIVE WITH THESE TRESPASSERS ALWAYS COMING TO DIG UP AND RIP UP AND TEAR DOWN. WE ARE SICK OF THIS. WE HAVE BEEN HIT WITH PIPELINES AND TRANSMISSIONS GALORE BY THE SECRET MEETINGS OF SICK CHENEY WHERE PLANS WERE DRAWN UP THAT DID NOT INVOLVE THE US PUBLIC.

WE ARE SICK OF OUR OPEN SPACES BEING DUG UP AND MAULED. WE DO NOT WANT THE WMNF TO BE TOUCHED AT ALL. IF THEY WANT THE LINE, USE THE PRIVATE PROPERTY AND PAY FOR IT, OR TEAR UP A ROAD, BUT ITS TIME TO STOP POACHING INTO OUR OPEN SPACE THAT HAS BEEN SAVED FOR USE BY TREES, ANIMALS AND BIRDS. WE WANT NATURE. NATURE DISTURBED IS NOT NATURE ANYMORE. IT IS PROFITEER LAND, WHERE THEY COME IN AND PUT DOWN TOXIC CHEMICALS, DRIVE THEIR CARS IN TO "MAINTAIN", ETC. THEREBY DISTURBING ALL OF NATURE. THIS AREA SHOULD BE SAVED AS THE PEACEFUL UNDISTURBED AREA WE CAN KEEP IT. WE DONT WANT HT EPROFITEERS TAKING ADVANTAGE OF US ANYMORE. IT NEEDS TO STOP. YOUR TIME IS UP.

NO MORE USE OF NATIONAL LAND BY PROFITGEERS. IT IS SACROSANCT FOR WHAT WE SAVED AND PAID FOR IT - WITH THE PURPOSE OF PROTECTION AND PRESERVATION. WE DID NOT SAVE IT AND DESIGNATE IT AS THIS LAND IS OPEN FOR PROFITEERING. NO MORE FREE PASSES. NO MORE DISTURBANCE OF THIS WHITE MOUNTAIN LAND. THIS COMMENT IS FOR THE PUBLIC RECORD. PLEASE RECEIPT. JEAN PUBLI JEANPUBLIC1@GMAIL.COM. PLEASE MAKE SURE I AM KEPT ABREAST OF ALL ATTEMPTS BY THIS RICH CORPORATION TO GET WHAT IT WANTS DESPITE THE PUBLICS PLEA TO SAVE AND PROTECT.

On Fri, Jul 31, 2015 at 12:55 PM, Northern Pass EIS <info@northernpasseis.us>
> wrote:

> [image: United States Department of Energy]
> <<https://t.e2ma.net/click/mhbgg/q4n03f/6g0msb>>
>
> *Department of Energy*
> *Washington, DC 20585*
> July 2015
> Dear Sir/Madam:

----- Message truncated -----

0196-1

Thank you for your comment. The commenter's opinion regarding the use of National Forest System lands is noted. The EIS analyzes several alternatives in detail that include underground cable along roadways within the WMNF (Alternatives 4a, 4b, 4c, 5a, 5b, 5c, 6a, 6b, 7).

0197-1

Thank you for your comment.

From: Maureen Rose <maureen@merrimactile.com>
Sent: Wednesday, August 05, 2015 8:15 AM
To: draftEIScomments@northernpasseis.us
Subject: pipelines

I do not support ANY UNDERGROUND PIPELINES of any kind. We do not need to destroy the environment any more that we already have. Flooding could destroy them and then we will be back to square one.

Please do not approve any underground utilities..... people are now using solar and wind power which I support and am now looking to change my energy provider since I do not want my money to support any of these companies if I can help it.

Soon we will not need nuclear, coal, and gas lines.

Please consider the environment and beauty across our country as we need every tree we can keep..... especially with the fires in California..... if we had a fire over a pipeline the whole area would blow up.... This is NOT A GOOD IDEA FIND MORE ENVIRONMENTAL FRIENDLY OPTIONS.

Thank you!

0197-1

Maureen Rose
115 Windham Road
Derry, NH 03038
windhamrose@gmail.com

0198-1

Thank you for your comment.

From: N&R <spanky@myfairpoint.net>
Sent: Wednesday, July 22, 2015 7:15 AM
To: draftEIScomments@northernpasseis.us
Subject: Comment..NorthernPassDraft EIS

Nancy Leclerc
N.Woodstock,NH
03262
spanky@myfairpoint.net

To whom it may concern,

I'm neither for or against, but what is best for **all**.

I can't help but wonder who decides what is most important for the majority of **all**.As for the Northern Pass and 184 miles of line,that would benefit many, if not **all**.I would think think if some are worried for the enviroment, they would be more concern with a 1000 miles of ATV trails, destroying the forest, soil and the wildlife living quarters. As well as hiking trails all through the National Forest, up to your knees from wear and tear.As for ski areas thousands of miles of trails and towers throughout NH are no different to me,than the power lines, furnishing the ski areas with the power they need to function but ,detest. and criticize and want moved or eliminated.Kind of ironic on the criticism the NP is getting because of the energy NH needs for all of our toys for tourism.Now the Balsams being renewed and a new Hotel for Mt Wahington Auto Road , maybe they could have solar panals or wind, wind is plentiful in these 2 areas so maybe it would work. Then they wouldn't need NP.

Just a thought.

Nancy Leclerc

0198-1

From: [Howard Aronson](#)
To: webmaster@northernpasseis.us
Subject: Suggestion.....
Date: Tuesday, July 21, 2015 3:07:38 PM

My suggestion is go take a hike.....literally! Then you will see the damage this foolish project will do to the White Mountains. All this, so greedy, non outdoors type people, can fill their fat pockets full of money.

This project sucks! I hope it doesn't go thru, and I will do my part to make sure it doesnt.

Signed, Avid Hiker, lover of nature!

[Sent from Yahoo Mail on Android](#)

0200-1

Thank you for your comment.

0200-1

From: [Jean Public](#)
To: webmaster@northernpasseis.us; vicepresident@whitehouse.gov; americanvoices@mail.house.gov;
info@earthjustice.org; info@pewtrusts.org; center@biologicaldiversity.org
Subject: Fw: DOE Northern Pass Draft EIS Available public comment
Date: Tuesday, July 21, 2015 1:14:02 PM

0201-1
 Thank you for your comment.

SOMEHOW THE PROFITEERS IN THIS COUNTRY HAVE GOT IT IN THEIR HEAD THEY HAVE THE RIGHT TO USE ALL THE NATIONAL LAND WE HAVE SAVED FOR OPEN SPACE AND PUT THEIR CRAP PROFITMAKING MACHINERY RIGHT THROUGH IT, UNDER IT, UPON IT, ETC. FOR NOTHING. THEY WANT TO PAY US CHEAP CHEAP CHEAP RATES FOR THAT LAND. ITS TIME TO PULL THE PLUG ON THESE PROFITEERS.

LET THEM RENT THE LAND FROM WILLING PEOPLE WHO OWN LAND, OUR NATIONAL PUBLIC LAND SHOULD BE SAVED FOR OUR USE AND FOR PRISTINE USE, NOT SIMPLY TO BE AVAILABLE AS FREEBIES FOR THESE PROFITEERS. THIS NEEDS TO STOP. WE HAVE 8 PIPELINES COMING THROUGH NJ ALL OF WHICH WANT TO USE OUR OPEN SPACE. WHEN DOES IT GET TO BE ENOUGH IS ENOUGH.

WE HAVE REACHED IT. SO HAS NEW YORK STATE. THE ENDLESS PIPELINES NEED TO STOP. WE MAY ALLOW A FEW BUT NOT THIS OVERWHELMING DICK CHENEY INSPIRED ENERGY COMPANY TAKEOVER OF ALL THE LAND WE OWN IN AMERICA. THE PUBIC HAS A RIGHT TO KEEP LAND SACROSANCT AND AWAY FROM THE USE OF THESE PROFITEERS. THIS COMMENT IS FOR THE PUBLIC RECORD. PLEASE RECEIPT. JEAN PUBLI JEANPUBILC1@YAHOO.COM

0201-1

**Department of Energy
 Washington, DC 20585**

July 21, 2015

The *Draft Northern Pass Transmission Line Project Environmental Impact Statement* (draft EIS) (DOE/EIS-0463) prepared by the Department of Energy (DOE) pursuant to the National Environmental Policy Act, and its implementing regulations, has been posted to the project EIS website, <http://www.northernpasseis.us/>.

Although the official draft EIS comment period will not begin until the Notice of Availability is published in the Federal Register (see below), this email serves as a courtesy announcement to inform the public that the draft EIS is now available.

When the Notice of Availability is published (anticipated July 31, 2015), additional correspondence will be provided from DOE, and further information will be provided on the project EIS website. At that time, hard copies and/or CDs of the draft EIS will be distributed to interested parties, as previously requested.

Future public hearings will be held—information will be announced in the *Federal Register* and in local media, and will be posted on the project EIS website when available.

Northern Pass EIS Team

NOTE: Please do not reply to this email as this account is not monitored.

To remove your email from the "Full Mailing List" mailing list, click here:

<http://www.northernpasseis.us/?ACT=50&id=ebW2BoQZRC>

From: [Iano Peter](#)
To: webmaster@northernpasseis.us
Subject: Suggestion
Date: Friday, July 24, 2015 5:18:32 PM

0203-1
Thank you for your comment.

My concerns are scenic in nature. The proposal by Northern Pass is to build tall, broad transmission lines through some of the most scenic sections of New Hampshire.
Peter J Iano
Scarborough ME

| 0203-1

Northern Pass EIS Website Comment Receipt

Refers to Comment placed on Aug 15, 2015

ID: 8314

Date Entered: Aug 15, 2015

Source: Website

Topics: Purpose and Need, Alternatives, Health and Safety, Wildlife, Viewshed/Scenery, Water / Wetlands, Recreation, Private Property/Land Use, Historic/Cultural, Economic, Tourism, Quality of Life, Cumulative Effects, Forest Service Lands

Name: Susan Meeker-Lowry

Organization:

Email: smeekerlowry@gmail.com

Mailing Address: 132 Fish St.

City: Fryeburg

State: ME

Zip: 04037

Country: US

Comment: I grew up on North Conway, NH and from the time I was a young child spent countless hours in northern NH's woods, lakes, and rivers. We often spent time at a camp in Pittsburg which was my mother's favorite place in the world. Today I still visit as I have friends who live just outside of Colebrook.

I oppose the construction of the Northern Pass for many reasons. There aren't many wild places left in New England and this project will destroy more of it, degrading the land, the view, and irreparably harming the economy of northern NH where tourism, hunting, fishing, and other outdoor recreation is a huge component of the region's economic well-being.

I am concerned about the animals whose habitat will be destroyed or compromised and the impact the high tension wires may have on them. Whether the lines are buried or not, the destruction involved with this project (roads, clearing, machinery, etc.) is untenable to me.

The fact that the power won't even benefit New Hampshire is another huge negative. NH's people and environment are taking a huge hit for no benefit beyond a few jobs in the construction phase. Those jobs will be gone and the negative impacts of the project will last forever. There are

0204-1

Thank you for your comment. Potential socioeconomic impacts, including impacts to tourism, are discussed in Section 4.1.2 of the EIS, and impacts within the Northern Section are discussed in Section 4.2.2 of the EIS.

0204-1

alternatives to massive power projects that New England should consider. Hydro-Quebec is also not the most reliable power producer and has a terrible environmental and human rights record. Massive hydro is not renewable and it is not environmentally sound.

Please do not approve this project! It is bad for NH, bad for the environment, and bad for the economy of northern NH.

Sincerely,
Susan Meeker-Lowry

Northern Pass EIS Website Comment Receipt

Refers to Comment placed on Aug 15, 2015

ID: 8315

Date Entered: Aug 15, 2015

Source: Website

Topics: Purpose and Need, Alternatives, Health and Safety, Vegetation

Name: Snndia Cooper

Organization:

Email: scooper75@hotmail.com

Mailing Address: pobox 478

City: Campton

State: NH

Zip: 03223

Country: US

Comment: THE POWER LINES PROPOSED ARE ARCHAIC! IT IS ONLY THE PEOPLE WHO WILL MAKE MONEY BY DUMPING THESE LINES ON THE AMERICANS WHO REALLY WILL BENEFIT FINANCIALLY FOR A SHORT TIME. WE ARE ALREADY IN A TIME IN WHICH OTHER ALTERNATIVES ARE AN OPTION AND MOST CONSCIENTIOUS AMERICAN CITIZENS ARE DOWNSIZING ELECTRONIC NEEDS.

I LIVE RIGHT NEAR A PROPOSED POWER LINE. MY HOME IS THREATENED AND THE VEGETATION I GROW. HERE IN THE WHITE MOUNTAINS WE DO NOT NEED THIS INVASION. THE WEEK'S ACT WOULD HAVE OUTLAWED THE NORTHERN PASS ATROCITY!

THANKS TO ALL WHO ARE ACTIVE IN PREVENTING THE RICH FROM OUTSIDE AMERICA WHO WILL PILLAGE OUR WHITE MOUNTAINS OF NEW ENGLAND.
SANDIA OF THE WHITES

0205-1

Thank you for your comment. Section 2.4 of the EIS discusses alternatives considered but eliminated from further analysis. DOE determined that other transmission projects, power generation alternatives, and energy conservation do not meet the purpose and need for DOE's action. Under the No Action Alternative, it is assumed that existing energy sources, including alternative energy generation, would continue to supply the ISO-NE region and that energy efficiency measures would continue. Potential effects to property values, health and safety, and vegetation are analyzed in the EIS (Sections 4.1.2, 4.1.4, and 4.1.12 respectively).

0205-1

Northern Pass EIS Website Comment Receipt

Refers to Comment placed on Aug 15, 2015

ID: 8316

Date Entered: Aug 15, 2015

Source: Website

Topics: Purpose and Need

Name: PETER DIFORTE JR

Organization:

Title: Property Owner

Email: peter@celebrateboston.com

Mailing Address: P.O. Box 636

City: Campton

State: NH

Country: US

Comment: The following are my concerns regarding the proposed construction of Northern Pass. I present a wide view--both historical and economically--if the project is complete. I live within yards of the proposed Northern Pass right-of-way, in a large condominium complex.

A. Purpose and Need

Regarding the "need" for Northern Pass, oil is currently less than \$50/barrel, with a great deal of world production available up to \$100/barrel. Natural Gas capacity from shale in the US is huge. Does it make sense to dissect the state of NH with giant, ugly, buzzing electric towers that are state of the art 1940 when energy is relatively inexpensive?

B. Alternatives

If Northern Pass is constructed, New Hampshire will be exporter of electricity. The most practical alternative is TO NOT BUILD Northern Pass. An energy crisis DOES NOT EXIST at the current time. NH is a tourist state, with very little energy. The demand for energy in NH is barely increasing. More reasons NOT TO BUILD Northern Pass.

C. Wildlife

Protected Bald Eagles and Turkey Vultures have nested in Thornton/Campton/Ashland, NH. Large eagles can nest on electrical towers (there is an eagle's nest in Woodsville NH on a large tower off

0206-1

Thank you for your comment. Executive Order (EO) 10485, as amended by EO 12038, "requires that executive permission be obtained for the construction and maintenance at the borders of the United States of facilities for the exportation or importation of electric energy." DOE is authorized to "receive applications for the construction, operation, maintenance, or connection, at the borders of the United States, of facilities for the transmission of electric energy between the United States and a foreign country[.]" and "[u]pon finding the issuance of the permit to be consistent with the public interest, and, after obtaining the favorable recommendations of the Secretary of State and the Secretary of Defense thereon, to issue to the applicant, as appropriate, a permit for [the] construction, operation, maintenance, or connection." (EO 10485). DOE's purpose and need reflects this limited authority. As discussed in Section 1.4 of the EIS, Northern Pass set forth a range of project objectives and benefits in its permit application. DOE and the cooperating agencies reviewed this documentation and determined that the project objectives include addressing three primary needs concerning New England's electricity supply: diverse, low-carbon, non-intermittent electricity. While DOE's authority is limited to the approval or denial of the amended Presidential permit application (August 2015) as requested by the Applicant, DOE's policy is to analyze not only the proposed border crossing, but also the alignment of new infrastructure required between the proposed border crossing and connection to the existing U.S. electricity system as a connected action. In keeping with this policy, DOE analyzed the potential environmental impacts of the alignment proposed by the Applicant. In addition, in response to input from Cooperating Agencies, other agencies, and extensive public comment, DOE analyzed a range of other alignments and underground and overhead configurations between the proposed border crossing and connection with the existing U.S. electricity system. The EIS analyzes in detail the No Action Alternative and eleven action alternatives. Additionally, seventeen alternatives were considered but eliminated from further detailed analysis.

0206-1

0206-2

Thank you for your comment. DOE is not aware of studies which document the impacts of bald eagles perching on electrical towers, versus trees. USGS 1988, Field Manual of Wildlife Disease - General Field Procedures and Diseases of Birds, does document that bald eagle have been known to construct nests on top of electrical towers. Some additional discussion regarding possible impacts for bald eagles, specifically, was added to Section 3.1.1.2.2 (Impacts from Operations, Maintenance, and

0206-2

Emergency Repairs) of the Wildlife Technical Report. Disturbance to Bald Eagles including potential nest abandonment are outlined in accordance with Bald and Golden Eagle Protection Act in the Wildlife Technical Report Section 1.5.1.3, Bald and Golden Eagle Protection Act.

Route 302). Has it ever been studied what impact there could be to these species if their habitat changes to atop electrical towers?

D. Viewshed/Scenery

New Hampshire has a tourist economy, and very little industry. Great efforts have been made to preserve the scenery in NH, with cell phone towers resembling artificial trees a prime example. Northern Pass will DESTROY the scenery. In central NH, the towers would be visible from Routes 49, 175, and 3, as well as from interstate 93. What has been preserved since colonial times--the beautiful views of the pristine White Mountains--will be gone forever. Property owners adjacent to Northern Pass will have their views of the mountains obscured by huge towers.

E. Water / Wetlands

There is a large reservoir beneath Northern Pass in Campton/Thornton, NH. Countless residences and condominiums have their wells located adjacent to the proposed Northern Pass right-of-way. Does electromagnetic radiation or runoff from the towers affect drinking water?

F. Recreation

The current right-of-way has smaller electric poles that are not visually distracting. People use the right-of-way to hike, snow-shoe, snow mobile, and ride off-road vehicles. If Northern Pass is built, much less recreation use will take place on the right-of-way. Large electric lines will hum, buzz, and vibrate, right over one's head of course. Recreational greatly decrease after people experience this firsthand.

G. Private Property/Land Use

The value of Mountain River East Condominium in Thornton NH will be destroyed, as the proposed right-of-way is about 150 yards away. Instead of seeing beautiful mountains, condo owners will be looking up at the towers or at the wires. The atmosphere of the 80-unit complex will become "industrial" and not "mountainside" as the towers are literally yards away. Values of the 3-bedroom units will probably drop from \$125,000 to \$75,000 if Northern Pass is constructed. Thus, for just one single adjacent condominium complex, the impact would be a DECREASE in property values of \$3 MILLION+/- dollars.

H. Taxes

Many property values will greatly decrease if Northern Pass is constructed in Thornton/Campton/Ashland, NH. Property values of homes adjacent to the Pass will be destroyed, with many, many other properties affected at their "views" are now impacted, lowering their values. These towns are cash-strapped, and are discussing layoffs and reducing town services. Constructing Northern Pass in Thornton/Campton/Ashland could have a great impact if town workers and/or teachers are eventually unemployed, due to the reduction of tax revenue from lower property values.

I. Historic/Cultural

The White Mountains are a national treasure. There are many books about the pristine beauty of the White Mountains written in the 19th century that rival Thoreau's "Walden." Dissecting the region with Northern Pass is tantamount to building electrical towers in front of Mount Rushmore.

J. Economic

As described in the Taxes Section, for towns impacted by Northern Pass, there could be a financial death spiral or cascade of sorts as values decrease and people move permanently away the area.

0206-2
Continued 0206-2 cont'd

0206-3

0206-3

Thank you for your comment. The EIS and Visual Impact Assessment Technical Report analyze potential impacts to visual resources resulting from the Project. Visual impacts are summarized in Section 2.5.1 of the EIS, and are further evaluated under each geographic section and alternative (see Sections 4.1.1, 4.2.1, 4.3.1, 4.4.1, and 4.5.1 of the EIS). Section 4.3.1 of the EIS includes a roads-based analysis of resources in the Central Section.

0206-4

0206-4

Thank you for your comment. Electromagnetic radiation, as stated by the commenter, does not affect drinking water. Updated analyses on potential impacts to drinking water supplies can be found in Sections 2 and 3 of the Water Resources Technical Report. In the EIS, potential impacts on surface water quality from erosion are discussed under water resources and vegetation. Applicable federal and state requirements are described in Section 1.5 of the Water Resources Technical Report. Appendix H of the EIS describes applicable Applicant-Proposed Impact Avoidance and Minimization Measures that would be used to avoid and minimize potential impacts.

0206-5

0206-6

0206-5

Thank you for your comment. General impacts to recreation resulting from the Project are described in Section 4.1.3.2 of the EIS. The recreation experience would be impacted by changes to the natural environment from the visual impacts of the aboveground portions of the project. Noise impacts are analyzed in Section 4.1.7.2 of the EIS. The EIS has been updated in response to this comment to indicate that construction and/or operation of the Project could result in decreased use of recreational resources (see Section 4.1.3).

0206-7

0206-8

0206-6

Thank you for your comment. Section 4.1.2 of the EIS addresses the potential for impact to property values as a function of proximity of the Project to private property. Due to the spatial extent of the EIS analysis, specific locations and properties could not be individually analyzed.

0206-9

0206-7

Thank you for your comment. Section 4.1.2 of the EIS addresses the potential impacts of the Project on property values and corresponding property tax assessments. Appendix 1 of the Socioeconomics Technical Report discusses potential tax impacts by town.

0206-8

Thank you for your comment. Potential impacts to or adverse effects on the White Mountain National Forest are analyzed in Section 4.5 of the EIS. DOE is addressing potential adverse effects to historic properties, including any in the White Mountain National Forest, in accordance with Section 106 of the National Historic Preservation Act and its implementing regulations. For more information, see Section 3.1.8 of the EIS.

0206-9

Thank you for your comment. Section 4.1.2 of the final EIS addresses the potential for impact to property values as a function of proximity of the Project to private property. Due to the spatial extent of the EIS analysis, specific locations and properties were not individually analyzed. Section 4.1.2 additionally provides estimates of the anticipated consequences to property values and property tax assessments as a result of the Project.

Property values go down, layoffs eventually occur, properties become more run down, fewer tourists visit the area and spend money, businesses then fail, etc. When the single paper mill in Berlin NH closed, it destroyed the local economy. It doesn't take much to permanently affect these rural towns. One can still find home lots in Berlin, NH 15 years after the mill closed with "Hurricane Katrina" prices as an analogy.

H. National Security

It short-sighted to use 1940's technology in 2015. The U.S has had some major blackouts with electric-grid automatic shutdowns in the past 15 years. If Northern Pass is to be constructed, burying it underground with electronic monitoring makes the most sense in regards to national security. National Security should be a high priority, not the profits of a fledgling utility company.

I. Tourism

Campton/Thornton/Waterville Valley and points north absolutely DEPEND on tourism to keep the economy going. The main careers in construction have been GONE since 2007 due to the bank collapse. The true unemployment rate in the area is about 20%, as people stopped looking for work years ago. Obscuring the pristine beauty of the White Mountains and rivers with Northern Pass will likely mean people visiting the Route 16 corridor to Conway instead of here.

J. Quality of Life

The value of my condominium unit at Mountain River East will be destroyed if Northern Pass is constructed. I will not be able sell my unit if need be, as buyers will run away from a complex that is only yards away from giant electrical towers. I will probably not sit out on my patio anymore to enjoy the beautiful views of the mountains, as it will be replaced by giant, ugly, buzzing towers and lines. A Northern Pass view would be "depressing" as it will feel like I living next to a power station or a dam.

K. Cumulative Effects

Refer to Taxes and Economy as described above.

L. Noise

High Tension wires buzz, hum, vibrate, and crackle on occasion. I will be able to hear the power lines from my home. "Awful" would be a way to describe living next to Northern Pass in regards to noise.

M. Forest Service Land

Please do not build Northern Pass. The White Mountains National Forest will be greatly and permanently impacted. The National Forest is also located in Thornton--not just in Lincoln and points north--and would be permanently scarred by Northern Pass.

Respectfully Yours

0206-9

Continued 0206-9 cont'd

0206-10

0206-10

Thank you for your comment. Section 4.1.4.2 in the EIS and Section 3.1.9 of the Public Health and Safety Technical Report discuss impacts related to intentional destructive acts. Impacts to health and safety from intentional destructive acts would be unlikely to be greater than the potential impacts from events involving extreme weather. If such an act were to occur and to succeed in destroying aboveground infrastructure or other components of the project, the main consequence for the public would be the temporary loss of electrical service from the Project (i.e., the loss of the 1,090 or 1,200 MW supplied by the Project) in the ISO-NE region.

0206-11

0206-11

Thank you for your comment. The EIS discusses the importance of tourism to New Hampshire, businesses, and the local and regional economy. The EIS (Section 3.1.2) and the Socioeconomic Technical Report describe the methods used to analyze potential impact to tourism for this EIS. As discussed in Section 4.1.2 of the EIS, no authoritative peer-reviewed studies were identified that address impacts to tourism as a result of the construction of transmission lines, and DOE did not attempt to develop such a study. No other resources were identified to allow for quantification of potential impacts. The EIS concludes that "while it is reasonable to conclude that the Project may have some level of impact on tourism within New Hampshire and on individual locations near the Project route, these are not quantifiable."

0206-12

0206-13

0206-14

0206-12

Thank you for your comment. Section 4.1.2 of the EIS addresses the potential for impact to property values as a function of proximity of the Project to private property. Adjustments to the original analysis presented in the draft EIS have been updated in the final EIS to reflect comments on the methodology and assumptions.

0206-13

Thank you for your comment. Noise impacts from aboveground portions of the Project are described in Section 4.1.7 of the EIS, and in Section 3.2.2.5 of the Noise Technical Report. The audible noise due to the corona effect would not exceed the EPA guidance level of 55 dBA for outdoor areas beyond the transmission route.

0206-14

Thank you for your comment. Potential impacts to or adverse effects on the White Mountain National Forest are analyzed in Section 4.5 of the EIS. DOE is addressing potential adverse effects to historic properties, including any in the White Mountain National Forest, in accordance with Section 106 of the National Historic Preservation Act and its implementing regulations. For more information, see Section 3.1.8 of the EIS.

Northern Pass EIS Website Comment Receipt

0207-1

Thank you for your comment.

Refers to Comment placed on Aug 16, 2015

ID: 8318**Date Entered:** Aug 16, 2015**Source:** Website**Topics:** Alternatives**Name:** Jeffrey Williams**Organization:****Email:** moosehockey18@gmail.com**Mailing Address:** 24 Elizabeth Terrace**City:** Laconia**State:** NH**Zip:** 03246**Country:** US

Comment: I wish to say that while other transmission projects in the Northeast U.S. are being buried with minimal effects on the environment (and minimal opposition) , Northern Pass maintains that it's own project can only be done using outdated technology. It's becoming clear that they want to do this project quick, dirty and cheap with no regards for our state's natural beauty.

0207-1

Northern Pass EIS Website Comment Receipt

Refers to Comment placed on Aug 19, 2015

ID: 8321

Date Entered: Aug 19, 2015

Source: Website

Topics: Health and Safety, Viewshed/Scenery, Private Property/Land Use, Historic/Cultural, Quality of Life, Air Quality, Cumulative Effects

Name: Corinne Pullen

Organization: Windswept Farm LLC

Title: Owner Manager

Email: corinne.pullen@yahoo.com

Mailing Address: 63 Old Schoolhouse Road

City: Canterbury

State: NH

Country: US

Comment: Our historic 140 acre 1743 farm has a Right of Way going through the middle of it. We are sickened to think that disfiguring ugly towers could be placed. The dangerous EMFS would negatively impact our lives and the lives of our livestock. The loud hum of the lines would be audible from our home and would effect wildlife.

BURY THE ENTIRE ROUTE OR DENY IT COMPLETELY. We are shocked this state of NH and our country would consider such an atrocity to MAR our beautiful countryside.

0208-1

Thank you for your comment. A discussion regarding potential impacts to livestock has been added to Section 3.1.10 of the Health and Safety Technical Report.

0208-1

Northern Pass EIS Website Comment Receipt

0209-1

Thank you for your comment.

Refers to Comment placed on Aug 19, 2015

ID: 8322

Date Entered: Aug 19, 2015

Source: Website

Topics: Quality of Life

Name: Katherine Thorndike

Organization:

Email: khthorndike@gmail.com

Mailing Address: 222 Whiteface Intervale Rd.

City: North Sandwich

State: NH

Zip: 03259

Country: US

Comment: Northern Pass should bury ALL its lines, not just a few miles. Please continue to push for this.

0209-1

Northern Pass EIS Website Comment Receipt

0210-1

Thank you for your comment.

Refers to Comment placed on Aug 19, 2015

ID: 8323

Date Entered: Aug 19, 2015

Source: Website

Topics:

Organization:

Comment: I am concerned with the proposed path Northern Pass would like to take as it will pass in my home town. Our country home town. Why is it they can not use the existing transmission llines that already run through Vermont and then branch off and build a substation closer to the NH/VT boarder. The proposed path will ruin that we call NEW HAMPSHIRE, rural, country historic. Not only that they are trying to go through conservation land and the effect that will have on the wildlife that calls these places homes. I am concerned what it will do to our health and property values, being close to homes,playgrounds and schools. Please reject the request for the permit for the Northern Pass. No only will it damage the land with roads and transmission lines but it will also affect our tourism dollars coming into the state. People want scenic views, not views with UGLY transmission lines and towers. Make them use the existing, and that needs to be upgraded then they should spend the money on something that already exists. STOP NORTHERN PASS!!

0210-1

Northern Pass EIS Website Comment Receipt

0211-1

Thank you for your comment.

Refers to Comment placed on Aug 19, 2015

ID: 8324**Date Entered:** Aug 19, 2015**Source:** Website**Topics:** Quality of Life**Name:** Thomas McLoughlin**Organization:****Title:** Mr**Email:** tmcloughlin@kearsarge.org**Mailing Address:** 206 Shaker st**City:** North sutton**State:** NH**Zip:** 03260**Country:** US

Comment: Please reject the current Northern Pass proposal. it will place an unfair burden on the residents of NewHampshire to run huge towers and transmission line through the middle of the state. Tourism is one of the largest sectors of our economy this ugly scar will have devastating effects on tourism, property values, scenic views and our quality of life. To use 21st century generating technology and to transport it through a state using 19th century transmission technology is totaly absurd and that is exactly what overhead transmisson lines are. This power from this project will bypass NH to be used in southern New England and beyond. There are power lines buried in Maine, Newyork, Vermont and Massachusetts. There is only one reason they don't want to bury the line for the entire legnth of the state and that is GREED the power companies will make Billions of dollars over the life of this project and they are unwilling to do the right thing and bury this ugly scar which any one can see has already had a negative impact on properties in the north country and along its proposed route. Please put a stop to this Greed by telling them to bury the whole thing

0211-1

Northern Pass EIS Website Comment Receipt

0213-1

Thank you for your comment.

Refers to Comment placed on Aug 19, 2015

ID: 8326

Date Entered: Aug 19, 2015

Source: Website

Topics:

Name: Mary Bearor

Organization:

Title: Tax payer

Mailing Address: Box 7

Mailing Address: 65 Johnson Lane

City: Colebrook

State: NH

Zip: 03576

Country: US

Comment: If Northern Pass can bury 60 miles, they can bury it all, and not saddle northern NH with obsolete technology which will create it's own ecological issues.

0213-1

Northern Pass EIS Website Comment Receipt

0218-1

Thank you for your comment.

Refers to Comment placed on Aug 20, 2015

ID: 8328

Date Entered: Aug 20, 2015

Source: Website

Topics: Tourism

Organization:

Comment: Tourism will without a doubt, in my mind at least, suffer if Northern Pass is built. I am fully aware that skiing is an important part of NH's tourism draw, but every time I approach the mountains I am saddened by man's abuse of them in the form of deep swaths that are ski trails. Although I understand this necessary in the name of tourism and the state budget, I cannot condone even more sacrilege of nature and its beauty, which people equate with NH anyway. People come to NH for the scenery! It is why I came back after 22 years in FL. It's what brings people back.

0218-1

0219-1

Thank you for your comment.

From: David Jodoin <djodoin@pembroke-nh.com>
Sent: Wednesday, August 19, 2015 1:31 PM
To: draftEIScomments@northernpasseis.us
Subject: Pembroke NH Northern Pass

Importance: High

The Town of Pembroke would like to go on record to remind everyone that at the Town Meeting in March of 2014, the voters overwhelmingly passed the following article.

Sincerely,

David M. Jodoin
Pembroke Town Administrator/Tax Collector

ARTICLE 15 - To see if the Town of Pembroke shall state its opposition to alternating current and direct current high voltage transmission lines with the Town's strong preference for the burial of such lines, in a manner consistent with the requirements, under rights of way and power line corridors now existing in all instances is preferred, this statement of opposition shall not apply to power and other utility lines, such as telephone and cable television, for

0219-1

MOVED: Tina Courtemanche SECONDED: Vincent Greco

Marie Straiton spoke in support of this article stating that the project now on-going of erecting 59 new towers of over 135 feet in height. This will affect the Town of Pembroke. She urged the voters to join 33 other communities and demand the removal of transmission lines.

Charles Schmidt stated that there is a bill in the house that is addressing transportation corridors. He also stated that other states have in fact removed transmission lines, not as long as it would be in NH, but they have done it.

Wayne Burt spoke about how the wind farms have scarred the beauty of the

ARTICLE 15 - To see if the Town of Pembroke shall state its opposition to any new overhead development of alternating current and direct current high voltage transmission lines within its borders; and in turn manifest the Town's strong preference for the burial of such lines, in a manner consistent with state and federal requirements, under rights of way and power line corridors now existing or to be established. Although burial in all instances is preferred, this statement of opposition shall not apply to distribution lines carrying electrical power and other utility lines, such as telephone and cable television, for Town residential or commercial use.

MOVED: Tina Courtemanche SECONDED: Vincent Greco

Marie Straiton spoke in support of this article stating that the project now is intending to use the existing right-of-way erecting 59 new towers of over 135 feet in height. This will affect 40 properties in the Town of Pembroke. She urged the voters to join 33 other communities and demand the burial of the electric transmission lines.

Charles Schmidt stated that there is a bill in the house that is addressing the idea of burying the lines in the states transportation corridors. He also stated that other states have in fact demanded the burial of the transmission lines, not as long as it would be in NH, but they have done it.

Wayne Burt spoke about how the wind farms have scarred the beauty of NH and this would look even worse.

0220-1

Thank you for your comment.

From: Lynn Litow Flayhart <llitow@litowconsulting.com>
Sent: Monday, August 10, 2015 10:35 AM
To: draftEIScomments@northernpasseis.us
Subject: Northern Pass

Brian Mills
Office of Electricity Delivery and Energy Reliability
U.S. Department of Energy
1000 Independence Ave.
SW, Washington, DC 20585.

Dear Mr Mills:

I have reviewed the proposed new route for Northern Pass and find it just as lacking and disfiguring of the landscape as the earlier proposal.

A combination of burying the line and placing it next to superhighways (like I93, I91 and I89) where the landscape is already compromised seems the only practical compromise that works for both route residents and the power companies/power users to the South.

Many people along the new proposed route have already suffered and protested the environmental/visual insult of under utilized wind generators that have scarred the land and damaged the natural views that are part of their lives and life choices.

If we wanted to live in an area where the quality of our lives was changed by living under or near the facilities that provide power to city dwellers to the South, we would move to New Jersey.

Obviously, I'm being facetious, but I hope you get the point. Our quality of life is a core value that is important to us. The new proposed northern pass route would damage irrevocably the quality of life for thousands of New Hampshire citizens who will receive no benefit from it.

Please tell the applicants that a route that minimizes environmental and aesthetic damage is the only acceptable solution to northern pass.

Thank you for considering my comments. I care very much about this issue.

Sincerely yours,

Lynn Litow Flayhart

0220-1

Northern Pass EIS Website Comment Receipt

0221-1

Thank you for your comment.

Refers to Comment placed on Aug 22, 2015

ID: 8337

Date Entered: Aug 22, 2015

Source: Website

Topics:

Organization:

Country: US

Comment:

| 0221-1

Northern Pass EIS Website Comment Receipt

0222-1

Thank you for your comment.

Refers to Comment placed on Aug 24, 2015

ID: 8338

Date Entered: Aug 24, 2015

Source: Website

Topics: Purpose and Need, Alternatives, Health and Safety, Vegetation, Wildlife, Viewshed/Scenery, Water / Wetlands, Soils, Recreation, Private Property/Land Use, Taxes, Historic/Cultural, Economic, Traffic, National Security, Tourism, Quality of Life, Air Quality, Cumulative Effects, Noise, Forest Service Lands, NEPA Process, Design Criteria / Mitigation Measures, Environmental Justice

Organization:

Comment: BURY IT ALL or don't have it run through NH! This is an unnecessary power line which only profits hydro Quebec and Eversource! The EIS suggests burying the whole line. They can bury it in VT and ME, why not NH?

NP has been lying from the very start, they've said:

1. it won't lower property values..HA!
2. you won't even notice it
3. Lots of jobs for NH citizens, when in reality it will be short term construction jobs for loggers, equipment operators. Other jobs are high skilled and will come to NH from outside
4. too expensive to bury it
5. more taxes for towns...

I live in Easton NH. Even though NP says they will bury it through my town, they need to bury it the whole way through NH

Thank you

0222-1

Northern Pass EIS Website Comment Receipt

0223-1

Thank you for your comment.

Refers to Comment placed on Aug 24, 2015

ID: 8339**Date Entered:** Aug 24, 2015**Source:** Website**Topics:** Economic**Name:** James Keefe**Organization:** Alpenforge Nexjen Enrichments**Title:** Approvals Administrator**Email:** remote2j@mail.com**Mailing Address:** 168 Keach Road**City:** Columbia**State:** NH**Zip:** 03576**Country:** US

Comment: The Balsams Resort's location is not its only Achilles Heel. Despite the pre-development hype the area's "vertical drop", as proposed, will come in at no more than 1750'. Mr. Otten's design works of a multi-lift spec. The traditional (purists) spec requires a single lift ride up, or lifts that are in-line with no descent required to access the secondary lift. This figure, however it is calculated and presented to various skier market demographics, will not confuse educated experienced skiers or any skier who can read a topo map.

Having skied in New England for 58 consecutive winters, I can tell you that skiers, the more affluent they are can find fault with anything that might give them an excuse to ski elsewhere. In total, The Balsams will have four black marks before they even get a chance to impress world class travelers. Poor vertical drop. Difficult location. Hilariously sited wind turbines. No 360d view from top of highest lifts. Wind turbine noise. Wind turbine anxiety during low ceiling conditions.

The way things are adding up you might as well save HQ a few million, and not bury the Route 26 Millsfield section. But I say this. It will be the death knell for the resort and thus the surrounding towns, the property values will never again recoup the equity losses incurred from Brookfield's placement,

0223-1

and government permitting of tubines 1 thru 7.

There is only so much of this stupidity you can hide with fancy brochures. And NP assumes you people don't pay attention to economic impacts, and how not invisible their towers become to vacationers who are trying to escape such reminders of human blight, human incompetence and human cheapness.

You should be working with Quebec City and Ottawa to have these people drug tested. Is it not obvious that they are thumbing their noses at our/your process? Part of the psyop tactics they are using are all about eventually wearing you down. They have done a masterful job of silencing the public, having made sure that press releases and meetings are held such that rural weekly papers press times, means a full week's wait for the news. Who is going to feel well enough informed to "make their voice heard" when the people are conditioned to believe their voices are only going to be stale and redundant.

Every hour that passes is an hour where a lot of people, due to the property values thing, don't even feel like they can expect to resume plans they may have had before the Balsams closed. This is going into year five now, of issue after issue, and none of them look like they are being handled by competent people.

You tell me. Geologically, the NH route was decided to be the easiest because the people were fewer - please note narrow east west mileage of NH vs. ME and VT. - interview the local state reps. Get a handle on how unsophisticated the residents are by the reps they elect. Note the per sq mile population of the north half of the Coos county only.

Geologically NH is the path of most resistance. Makes the least sense for burial. HQ knew that. Just like Brookfield CE's could see there was a struggling ski area nearby. But Politically, NH was the path of LEAST resistance. And HQ has people who know the value of that resistance too.

HQ is making a mockery of your department, people. And 40 years from now everyone is going to realize what a bunch of puppets you people must have been to have allowed that line go over Route 26.

That is all I have to say for now.

Thank you for your service.

0223-1

Continued 0223-1 cont'd

Northern Pass EIS Website Comment Receipt

0224-1

Thank you for your comment.

Refers to Comment placed on Aug 24, 2015

ID: 8340

Date Entered: Aug 24, 2015

Source: Website

Topics:

Organization:

Comment: I'll try this again

| 0224-1

Northern Pass EIS Website Comment Receipt

0225-1

Thank you for your comment.

Refers to Comment placed on Aug 24, 2015

ID: 8341**Date Entered:** Aug 24, 2015**Source:** Website**Topics:** Alternatives**Name:** John Jahoda**Organization:** Bridgewater State University**Title:** Professor Emeritus**Email:** jjahoda@comcast.net**Mailing Address:** 230 Steere St**City:** Attleboro**State:** MA**Zip:** 02703**Country:** US

Comment: Northern pass should bury the line in all environmentally sensitive areas. This includes ALL the area north of Ashland not just the small section in Pittsburg and the area from Bethlehem to Ashland. Some of the most spectacular views and varied habitat is in the stretch from Pittsburg to Bethlehem. This whole northern section should be buried. There is strong opposition to towers that will permanently mar the landscape for the benefit of private development. This should not and must not be allowed to happen

0225-1

Northern Pass EIS Website Comment Receipt

0226-1

Thank you for your comment.

Refers to Comment placed on Aug 25, 2015

ID: 8342

Date Entered: Aug 25, 2015

Source: Website

Topics: Purpose and Need, Alternatives, Health and Safety, Vegetation, Viewshed/Scenery, Recreation, Private Property/Land Use, Historic/Cultural, Economic, Tourism, Quality of Life, Cumulative Effects, Forest Service Lands, Design Criteria / Mitigation Measures, Environmental Justice, Other

Organization:

Comment: NH does deserve better for innumerable, valid reasons only a few being the onslaught of avaricious extraction of natural resources all over the planet. If things were actually managed the way the sweet talking ministers of corporate domination claim, the earth wouldn't be experiencing the climate change its now been noted to be on: the threshold of its 6th great mass species extinction. Besides all the compelling reasons why Northern Pass should be 100% buried, and mandated on state rights-of-way only, nothing else, NP is just one more false flag cry for more energy that's not needed "to keep the lights on." In addition, to call this hydro-power project renewable is not being truthful considering the overwhelming, measurable evidence that damming vast valleys to back up rivers in order to flood valleys to create reservoirs, only adds to the greenhouse effect.

The earth is warming at an accelerated pace, far more rapidly than projected by all previous modeling done by meteorologists with credible, scientific peer review. With the Arctic projected to be ice free sometime next summer, according to U.S. Naval Research, the mega-tons of methane held in check below the earth's crust at the bottom of the ocean, in conjunction with the melting of the permafrost above the Arctic Circle, (methane) will become a time bomb in the upper atmosphere. (Methane is said to be 100x a more potent greenhouse gas than CO2, just as a matter of note.) The absence of that frozen white reflective shield at the top of the planet will accelerate the warming of the planet affecting everything to do with life as we know it. In other words, food and water will become far more important than any 9 to 5 job you have.

The wildfires burning the million-plus acres throughout the west is one of a myriad of climate change indicators. And no one in mainstream media is talking about the reality of damage by the Fukushima Da'iche Nuclear Plant, Japan, breached by a tsunami, 2011, is still leaking hundreds of thousands of gallons of highly radioactive plutonium into the Pacific every day! The Pacific's rising temperature is putting just as much an impact on global warming as everything else that's going on regarding the burning of fossil fuels. For now, forget about what affect highly radioactive plutonium is having on the marine food chain, that's an entirely separate issue due to a blatant lack of will to regulate industry.

Then, there's all the unregulated fracking that's happening all over the country along with the continued pursuit of oil even in the Arctic's most environmentally sensitive region, the Chukchi Sea.

0226-1

Royal Dutch Shell was recently green lighted to drill for it by the Obama Administration. All this, in addition to Northern Pass, just shows how out of control and irresponsible the EPA and all the other known alphabet agencies of the U.S. Gov't has been all known to be for too many years now. We the People are calling this action and all the other unregulated actions what it is: an outlandish farce that's nothing more than a land and money grab, and none of it has anything to do with responsible energy production.

The country is on the verge of a major financial and infrastructure collapse that is bound to converge sometime with a massive environmental catastrophe, and yet our "leaders" in Washington continue to diddle with the fiddle. It's not funny and this subject is not joke worthy; the global community has never experienced what it's faced with today. Likewise, NH does not need this energy, so we say if the state is to get anything for NP's passage from Quebec to the ISO New England grid, it has to be buried for the benefit of society. However, even doing that still does not mitigate the damage that will continue to contribute to climate change.

0226-1

Continued 0226-1 cont'd

Northern Pass EIS Website Comment Receipt

0227-1

Thank you for your comment.

Refers to Comment placed on Aug 25, 2015

ID: 8343**Date Entered:** Aug 25, 2015**Source:** Website**Topics:** Recreation**Organization:** 4000 footer club AMC

Comment: The topic choices are multiple but since I live in NH and enjoy the beauty and recreation of the area (VT as well) I chose to comment on the recreational aspect. This part of the world does not NEED the Northern Pass for any energy relief and we would not receive it anyway (my understanding). Keep the mountains and valleys undisturbed for wildlife, tourism, the people that work & play here. If we wanted to live in a aesthetically ugly area, we could just drive south, and there are plenty of cities to choose from....keep our beauty and jobs where they belong...say "NO to Northern Pass"

Laurie Greenberg

0227-1

Northern Pass EIS Website Comment Receipt

Refers to Comment placed on Aug 25, 2015

ID: 8344

Date Entered: Aug 25, 2015

Source: Website

Topics: Economic

Name: Claire Gaeb

Organization:

Email: cltdag@hotmail.com

Mailing Address: 130 Spruce Street

City: Berlin

State: NH

Country: US

Comment: I am opposed to the Northern Pass Project in any form. This large corporation intends to ruin our landscape for their own profit. It will not benefit NH residents and will hurt the tourism industry that we have worked so hard to promote after the downturn of the local paper mills and other manufacturing industries in Coos County.

People have come from all over the world to take in the beauty of our region. Many of us growing up in the Mount Washington Valley take a great deal of pride in welcoming these visitors. We work in service industries that rely heavily on tourism dollars to make a living.

Countless volunteers maintain ATV and snowmobile trails to provide recreational opportunities during every season throughout the year. Guide services offer kayak, canoe, hunting and dogsled trips to name just a few. Visitors come here to take in breathtaking views of the mountainous region and waterways.

Those of us who grew up in this area have recreated and enjoyed the beauty of this region and would like for our grandchildren to be able to do the same. It will provide for their livelihood someday, as well.

I believe the Northern Pass project will negatively impact communities from Pittsburg to Deerfield. The Northern Pass proposal to bury 60 miles of line is not acceptable. We do not want it here at all! The towers in Canada would be visible in Pittsburg NH, another community that relies on recreational

0228-1

Thank you for your comment. The EIS discusses the importance of tourism to New Hampshire, businesses, and the local and regional economy. The EIS (Section 3.1.2) and the Socioeconomic Technical Report describe the methods used to analyze potential impact to tourism for this EIS. As discussed in Section 4.1.2 of the EIS, no authoritative peer-reviewed studies were identified that address impacts to tourism as a result of the construction of transmission lines, and DOE did not attempt to develop such a study. No other resources were identified to allow for quantification of potential impacts. The EIS concludes that "while it is reasonable to conclude that the Project may have some level of impact on tourism within New Hampshire and on individual locations near the Project route, these are not quantifiable."

0228-1

revenue.

The Lamontagne Wildlife Management Area in Deerfield NH was donated to the State of New Hampshire by a family member and will be severely impacted by the transmission towers and substation. I believe the views and natural beauty of this pristine landscape would be ruined. A map showing the location of this area can be seen at: www.wildlife.state.nh.us/maps/wma/documents/NH_WMA_map_Lamontagne.pdf. There are also other Wildlife Management Areas in this vicinity which can be seen on this map. I would be curious to know what impact the Northern Pass project will have on the agreements made between the benefactors of these lands and the State of NH.

There are some individuals who believe the tax money generated by Northern Pass assets would benefit NH, but I am not prepared to sacrifice the natural beauty of the White Mountain National Forest and other regions in our state for this purpose.

Northern Pass EIS Website Comment Receipt

0230-1

Thank you for your comment.

Refers to Comment placed on Aug 27, 2015

ID: 8347

Date Entered: Aug 27, 2015

Source: Website

Topics: Recreation

Organization:

Comment: There is no reason whatsoever that the entire transmission line can not be buried through every visible viewpoint in and around the beautiful state of NH. It serves no overall benefit to the state, even with a small amount of energy allocated to the state. If it were all on private lands, that is different, they can do as they please. But trashing the land through the state to deliver to another state (serving as a tarmac basically) is not acceptable. And it is permanent, and once in, they will find ways to make the footprint grow.

0230-1

Northern Pass EIS Website Comment Receipt

0231-1

Thank you for your comment.

Refers to Comment placed on Aug 27, 2015

ID: 8348

Date Entered: Aug 27, 2015

Source: Website

Topics: Quality of Life

Organization:

Comment: I oppose any new towers over our precious state. I ask that the Northern Pass only be approved if it is buried. New Hampshire's beauty is at stake.

0231-1

Northern Pass EIS Website Comment Receipt

0232-1

Thank you for your comment.

Refers to Comment placed on Aug 28, 2015

ID: 8350

Date Entered: Aug 28, 2015

Source: Website

Topics: Viewshed/Scenery, Water / Wetlands

Organization: none

Comment: CLARKSVILLE TOWERS 23 towers from Route 3 to Wisell Road 80' to 120' in height and going through some wetlands and spoiling our views. The cost to go under ground and then overhead for the 2 1/4 miles with the 1000 Megawat HVDC line dosen't make sense. Towers DC-37 to DC-42 and DC-4C-1, 1/4 mile from my house will be very visable for my family and surrounding homes. We built our home at Route 145 # 317 30 years ago and love Clarksville just the way it is.

0232-1

Northern Pass EIS Website Comment Receipt

0233-1

Thank you for your comment.

Refers to Comment placed on Aug 28, 2015

ID: 8351**Date Entered:** Aug 28, 2015**Source:** Website**Topics:****Name:** Michael and Miriam Kurland**Organization:** Mr.**Title:** Mr.**Email:** mimbck@yahoo.com**Mailing Address:** 269 Wormwood Hill Rd**City:** Mansfield Center**State:** CT**Zip:** 06250**Country:** US

Comment: We are strongly against the construction of the Northern Pass. We need to move beyond large scale construction of energy sources. We need to move forward with small, local clean energy development, where citizens have control of the kinds and amounts of energy they would like and need. This massive project is counter to how we need to change to a more responsible, low impact, clean, productive economy.

0233-1

Northern Pass EIS Website Comment Receipt

0234-1

Thank you for your comment.

Refers to Comment placed on Aug 28, 2015

ID: 8352**Date Entered:** Aug 28, 2015**Source:** Website**Topics:****Name:** Michael and Miriam Kurland**Organization:** Mr.**Title:** Mr.**Email:** mimbck@yahoo.com**Mailing Address:** 269 Wormwood Hill Rd**City:** Mansfield Center**State:** CT**Zip:** 06250**Country:** US

Comment: We are strongly against the construction of the Northern Pass. We need to move beyond large scale construction of energy sources. We need to move forward with small, local clean energy development, where citizens have control of the kinds and amounts of energy they would like and need. This massive project is counter to how we need to change to a more responsible, low impact, clean, productive economy.

0234-1

Northern Pass EIS Website Comment Receipt

0235-1

Thank you for your comment.

Refers to Comment placed on Aug 28, 2015

ID: 8353**Date Entered:** Aug 28, 2015**Source:** Website**Topics:****Name:** Michael and Miriam Kurland**Organization:** Mr.**Title:** Mr.**Email:** mimbck@yahoo.com**Mailing Address:** 269 Wormwood Hill Rd**City:** Mansfield Center**State:** CT**Zip:** 06250**Country:** US

Comment: We are strongly against the construction of the Northern Pass. We need to move beyond large scale construction of energy sources. We need to move forward with small, local clean energy development, where citizens have control of the kinds and amounts of energy they would like and need. This massive project is counter to how we need to change to a more responsible, low impact, clean, productive economy.

0235-1

Northern Pass EIS Website Comment Receipt

0236-1

Thank you for your comment.

Refers to Comment placed on Aug 28, 2015

ID: 8354

Date Entered: Aug 28, 2015

Source: Website

Topics: Viewshed/Scenery

Name: Christina Weissbrod

Organization:

Email: cweissbrod@gmail.com

Mailing Address: 57 Smith Hill Road

Mailing Address: PO Box 1113

City: Ashland

State: NH

Zip: 03217

Country: US

Comment: I can support only complete burial of all lines for the Northern Pass. The towers are visual blight and once in place will remain so into perpetuity, even when a better alternative source of power has been developed. No towers at all is best for the state of New Hampshire.

0236-1

From: Larry|Laurence Rappaport [<mailto:lmrapp@lmrapp.com>]
 Sent: Wednesday, August 19, 2015 2:58 PM
 To: Mills, Brian <Brian.Mills@hq.doe.gov>
 Subject: Re: DOE hearings for Northern Pass do not allow fair access for Northern constituents

Dear Mr. Mills,

I think you misinterpreted my email. Mrs. Moran was concerned with having a meeting in Whitefield. She expressed her displeasure with people from Pittsburg having to drive two hours each way to attend your hearing. Every town in the North Country opposes the project as well as many from southern New Hampshire. We were asking that you pick a more northerly location.

Incidentally, while you were preparing your draft EIS, ABB and possibly others have introduced a burial cable which can carry 2200 megawatts, thus the restriction to 1000 megawatts is no longer necessary. Our argument that the cable be buried is based on the fact that Vermont, Maine, Mass., and Connecticut have approved burial and they are all in the same grid. Why is it not appropriate for New Hampshire? You should also note that our most northern town - Pittsburg - relies exclusively on tourism. People don't go to ugly places.

—

Larry Rappaport
 NH State Representative
 Coos District One

0237-1

Thank you for your comment. In response to these comments, DOE added a public hearing in Colebrook, NH to facilitate public involvement. Four public hearings were held on the draft EIS: Monday, March 7, 2016 in Colebrook, NH; Wednesday, March 9, 2016 in Waterville Valley, NH; Thursday, March 10, 2016 in Concord, NH; and Friday, March 11, 2016 in Whitefield, NH. While comments were accepted at these public hearings, comments submitted via mail, email, and website submission were also accepted. A variety of methods were employed to publicize project information and public meetings, including the Federal Register, local newspapers, postal mailing addresses, email addresses, and the project EIS website. Extensive information about the EIS process has been made available through the project EIS website (<http://www.northernpasseis.us/>). Project documents, including the draft EIS, supplement to the draft EIS, and Resource Technical Reports were available in several formats, including digitally via the project EIS website, and hard copy by request and at public libraries. Printed hard copies and CD copies of the draft EIS and supplement to the draft EIS were sent to those who requested to receive documents in those formats. Printed hard copies and CD copies were made available for public review at 30 public libraries (http://media.northernpasseis.us/media/DraftEIS_Hard_Copy_Locations.pdf).

0237-1

0237-2

0237-3

0237-2

Thank you for your comment. A discussion of the process used to develop alternatives, including technical constraints associated with burial of project segments, is included in Section 2.1 of the final EIS.

0237-3

Thank you for your comment. The EIS discusses the importance of tourism to New Hampshire, businesses, and the local and regional economy. The EIS (Section 3.1.2) and the Socioeconomic Technical Report describe the methods used to analyze potential impact to tourism for this EIS. As discussed in Section 4.1.2 of the EIS, no authoritative peer-reviewed studies were identified that address impacts to tourism as a result of the construction of transmission lines, and DOE did not attempt to develop such a study. No other resources were identified to allow for quantification of potential impacts. The EIS concludes that "while it is reasonable to conclude that the Project may have some level of impact on tourism within New Hampshire and on individual locations near the Project route, these are not

quantifiable." Additionally, Section 4.1.1 of the EIS addresses potential impacts to Visual Resources which may result. The Visual Resources section specifically evaluates the scenic landscape of New Hampshire and the potential for impacts to the viewshed from several viewing distances.

0238-1

Thank you for your comment.

From: Katy Hanson <kthanson@comcast.net>
Sent: Sunday, August 23, 2015 12:20 PM
To: draftEIScomments@northernpasseis.us
Subject: Northern Pass Draft EIS comment - NO ACTION

Dear Mr. Mills, I am a Massachusetts resident with a second home in Glen, NH, who has enjoyed the beauty and recreational opportunities of northern NH for years. Based on my knowledge of this project I emphatically urge there be NO ACTION taken now or in the future in developing a transmission line through northern NH. I believe that we need to preserve this treasured land as it is for all of us now and for future generations. This is what environmental protection means. Katy Hanson, M.D.

0238-1

Northern Pass EIS Website Comment Receipt

Refers to Comment placed on Aug 30, 2015

ID: 8359

Date Entered: Aug 30, 2015

Source: Website

Topics: Alternatives

Name: g gold

Organization:

Email: gerji@yahoo.com

State: NH

Zip: 03260

Country: US

Comment: First, it is unreasonable for the final EIS to limit its entire study to one international border crossing, the one chosen by the applicant to be located over Hall's Stream in Pittsburg. Second, if the DOE's final EIS does consider more than one international border crossing, the most reasonable location for a completely buried transmission line would be down Interstate 91 from Derby Line, Vt. to the intersection of I-91 and I-93 in Waterford, Vt., then down I-93 to a terminus in southern New Hampshire or northern Massachusetts. Third, the final EIS should eliminate any consideration of building the DC/AC converter station in Franklin, and should consider at least one termination point south of the present terminus in Deerfield. The converter station should be built as close as possible to the point where the electricity is introduced to the New England grid.

0239-1

Thank you for your comment. Northern Pass has applied to the Department of Energy for a Presidential permit for an international border crossing associated with an HVDC transmission line that would run from Quebec, Canada to Deerfield, NH. Executive Order (EO) 10485, as amended by EO 12038, "requires that executive permission be obtained for the construction and maintenance at the borders of the United States of facilities for the exportation or importation of electric energy." DOE is authorized to "receive applications for the construction, operation, maintenance, or connection, at the borders of the United States, of facilities for the transmission of electric energy between the United States and a foreign country[,]" and "[u]pon finding the issuance of the permit to be consistent with the public interest, and, after obtaining the favorable recommendations of the Secretary of State and the Secretary of Defense thereon, to issue to the applicant, as appropriate, a permit for [the] construction, operation, maintenance, or connection." (EO 10485). DOE, however, does not have siting authority for the Project. In this case, the New Hampshire Site Evaluation Committee has siting authority for the Project in the state of New Hampshire. Additionally, the USFS has siting authority for portions of the Project located in the White Mountain National Forest. (For further discussion, see Sections 1.1-1.3 of the final EIS.) While DOE's authority is limited to the approval or denial of the amended Presidential permit application (August 2015) as requested by the Applicant, DOE's policy is to analyze not only the proposed border crossing, but also the alignment of new infrastructure required between the proposed border crossing and connection to the existing U.S. electricity system as a "connected action" under NEPA. In keeping with this policy, DOE analyzed the potential environmental impacts of the alignment proposed by the Applicant. In addition, in response to input from Cooperating Agencies, other agencies, and extensive public comment, DOE analyzed a range of other alignments and underground and overhead configurations between the proposed border crossing and connection with the existing U.S. electricity system. The EIS analyzes in detail the No Action Alternative and eleven action alternatives. Additionally, seventeen alternatives were considered but eliminated from detailed analysis. Section 2.4 of the final EIS has been updated with additional information on alternatives considered but eliminated from detailed analysis. Among these alternatives, DOE considered two alternate border crossings. One was an alternative that would utilize the existing National Grid Phase I/II route, including its border crossing in Vermont. Based on its review of the National Grid alternative DOE determined that this alternative is not reasonable. Section

0239-1

2.4.3 of the final EIS has been updated with additional information related to the National Grid alternative. Separately, in response to comments received on the draft EIS, DOE considered a second alternative border crossing in Vermont, specifically identified as a border crossing at Derby Line, VT that would utilize I-91. DOE determined that this alternative is not reasonable. Section 2.4.17 of the final EIS has been added to reflect consideration of this alternative and DOE's determination.

Northern Pass EIS Website Comment Receipt

0240-1

Thank you for your comment.

Refers to Comment placed on Aug 30, 2015

ID: 8360**Date Entered:** Aug 30, 2015**Source:** Website**Topics:****Name:** Randall Kramer**Organization:****Email:** rskra25@gmail.com**Mailing Address:** 39 North St**City:** Hopkinton**State:** MA**Zip:** 01748**Country:** US

Comment: I support the proposal to create a new Low-Carbon, non-intermittent power supply for New England. However, I also strongly support any and all measures, even at added cost, to absolutely minimize adverse impacts on the WMNF area. The WMNF is a precious NATIONAL resource, its value cannot be underestimated, and we owe a debt to our own and future generations to preserve it.

0240-1

Northern Pass EIS Website Comment Receipt

Refers to Comment placed on Sep 2, 2015

ID: 8363

Date Entered: Sep 2, 2015

Source: Website

Topics: Viewshed/Scenery

Name: Elisha Gray

Organization:

Email: yarge@comcast.net

Mailing Address: 809 Blake Hill Road

City: New Hampton

State: NH

Zip: 03256

Country: US

Comment:

A. The newly proposed routing for Northern Pass that maintains 132 miles of overhead High Voltage lines and towers would mar the New Hampshire landscape for a large section of the state. ANY proposal using existing PSHN transmission routes south of Ashland would significantly impact my property adversely. Within one mile of our residence at 809 Blake Hill Road, New Hampton, 10 new towers* in Hill, from 70 to 95 feet high, all above the tree-tops, will mar the view from our house, devaluing our property by aesthetic desecration of our views. Also, travelling to and from our house in New Hampton, we would have to drive under the lines that cross Coolidge Woods Road in New Hampton. Viewing these lines would negatively affect our quality of life daily, as we purchased out farm primarily for its vista.

B. Others within the view shed would similarly be impacted. You should clearly identify the number of residents who would view these lines and record via scientific polling their stance on overhead lines. It should take into account the opinions of people who are directly affected by this project. I suspect that the overwhelming conclusion would be thousands of people in opposition to overhead lines, while many fewer in opposition to burial of lines.

0242-1

Thank you for your comment. The EIS and Visual Impact Assessment Technical Report analyze potential impacts to visual resources resulting from the Project. Visual impacts are summarized in Section 2.5.1 of the EIS, and are further evaluated under each geographic section and alternative (see Sections 4.1.1, 4.2.1, 4.3.1, 4.4.1, and 4.5.1 of the EIS).

0242-1

C. As there has been an overwhelming response from New Hampshire residents and property owners, I would expect that each member of the Site Evaluation Committee and authors of the EIS take into account the number and tenor of the comments made from all sources: Hearings, DOE EIS postings, etc. in order to evaluate the people*s reaction to the proposal by Northern Pass.

D. The affect on appraised value of real estate in the EIS seems mighty low. Already the prospect of overhead lines has caused home sales to be scuttled and at least one golf course housing development (Owl*s Nest) to file for bankruptcy for lack of sales. I suggest the DOE take another look at the methodology used.

0242-2

0242-2

Thank you for your comment. Section 4.1.2 of the EIS addresses the anticipated impacts of the Project on adjacent properties, property values, and current/future tax assessments/payments. An exhaustive literature evaluation was undertaken to identify peer-reviewed studies which specifically assessed the potential impact of transmissions lines on adjacent real estate values. This information is presented in the Socioeconomic Technical Resource Report for the final EIS and in the EIS (Section 4.1.2). As a result of comments on the methodology and assumptions provided on the draft EIS, adjustments to the original analysis have now been updated in the final EIS. As these details are far too complex to be summarized within this response, the commenter is referred to both the Socioeconomic Technical Resource Report for the final EIS, and Section 4.1.2 of the final EIS.

From: Fred W. Martin <extra@nbeam.com>
Sent: Sunday, August 30, 2015 9:11 AM
To: section106comments@northernpasseis.us
Cc: achp@achp.gov; mstier@nhpreservation.org; rharris@savingplaces.org
Subject: alternative 3

50 Village Ave
Dedham MA 02026

Mr. Brian Mills
US Dept. of Energy OE-20
1000 Independence Ave SW
Washington DC 20585

Deqr Mr. Mills:

This is a section 106 comment on the Northern Pass draft EIS section 4.2.8.4, impacts from construction on architectural and archaeological resources by alternative 4a, 4b, 4c, 6a, and 6b. Because of these impacts, alternative 3 (burial of the powerline along the proponent's first chosen route) is preferable.

The Martin Homestead at 2369 US rte 3 in Stratford NH is currently listed on the National Register of Historic Places in Washington DC, and a powerline buried adjacent to US route 3 as envisioned in alternatives 4 or 6 will cross this property.

In approximately 1790, the house was located just above a year-round spring with some 2 gal/min of flow. During construction of the 24" natural gas pipeline which now crosses the property, this flow was stopped as the trench was dug, and diverted into the trench. Flow was partially restored by sealing the bottom of the trench with bentonite clay, but appreciable diversion to other spring locations did occur after the trench was filled. Another trench along the highway to the east of the house is likely to completely stop the water supply to the spring at the house, and make an irreversible loss to the integrity of the historic property.

This calamity can be avoided by utilizing alternative 3 (burial of the powerline along the proponent's route). If alternative 3 cannot be used, impact can be mitigated by planning the location of the powerline along the railroad rather than the highway through the property. The railroad is west of the springs, and there would be no interference with groundwater leading to the house spring. In addition routing the powerline along the railroad for about a mile would eliminate the need for two dangerous crossings of the 24" natural gas pipeline by the electric powerline (at locations where the gas line crosses the highway).

The railroad passes about 70 feet from the house, over a stone culvert which conducts the spring flow to the Connecticut River and contributes to the architectural ambiance. If the culvert is modified to support the power line as well as the railroad, the stone masonry of the east side of the culvert should be preserved.

Alternative 3 or the no-build alternative 1 is preferable to the above-ground transmission towers of alternative 2.

Sincerely yours,

Frederick W. Martin

0243-1

Thank you for your comment. The commenter's identification of and concerns about Martin Homestead are noted. DOE is addressing potential adverse effects to historic properties in accordance with Section 106 of the National Historic Preservation Act and its implementing regulations. For more information, see Section 3.1.8 of the EIS. This comment will be considered through the Section 106 process.

0243-1

0244-1

Thank you for your comment.

From: John French <john.french@metrocast.net>
Sent: Saturday, August 29, 2015 11:27 AM
To: draftEIScomments@northernpasseis.us
Subject: northern pass in NH

we support Northern Pass . &

1. the intent to provide electricity by transmission of hydro power from Canada
2. renewable energy comes in many forms .. water having historically taken a first position
3. New Hampshire is not an island, nor are we as a people the only state having needs
- 4 - by the fact we are part of the United States of America -
HOW are we somehow ENTITLED to prevent neighboring states receiving needed electricity?
5. although underground may be appropriate in some semi pristine areas, we feel to bury All is
unreasoned & possibly not a good engineering practice
6. personally we do NOT like the favored huge Wind Towers ! they dominate the hills
& by reason of human instinct [along with most animals] we are involuntarily required
to notice MOTION/ .. yet those who protest power lines do not seem bothered by this domination
7. where as: stationary lines do not require this involuntary attention
note : how most of us are not constantly aware of stationary phone & electric lines which bring electricity to our homes every day
8. electricity & the accompanying ability to transmit is absolutely needed in the United States and in New England particularly

mary & john French
pittsfield, NH 03263

0244-1

0245-1

Thank you for your comment.

From: Jean Public <jeanpublic1@yahoo.com>
Sent: Saturday, August 29, 2015 8:13 AM
To: info@northernpasseis.us; drafteiscomments@northernpasseis.us
Cc: vicepresident@whitehouse.gov; information@sierraclub.org; info@peer.org;
 info@pewtrusts.org; foe@foe.org
Subject: Fw:public comment on federal register DOE Northern Pass Transmission Line Project
 Draft EIS Notice of Public Hearing

my comment is that it is anti environmental and it should not be built. i totally oppose this project. i cannot attend the meeting. this is my comment. jean publi jeanpublic1@yahoo.com

0245-1

```
>
>
>
> @media screen and (max-width:480px){
> #yiv3783602586 html {
> }
> #yiv3783602586 * .filtered99999
> .yiv3783602586e2ma-content-block
> div.yiv3783602586e2ma-p-div, #yiv3783602586 * .filtered99999
> .yiv3783602586e2ma-combo-block div.yiv3783602586e2ma-p-div,
> #yiv3783602586 * .filtered99999
> .yiv3783602586e2ma-combo-content
> div.yiv3783602586e2ma-p-div, #yiv3783602586 * .filtered99999
> .yiv3783602586e2ma-content-block li, #yiv3783602586 *
> .filtered99999 .yiv3783602586e2ma-combo-block li,
> #yiv3783602586 * .filtered99999
> .yiv3783602586e2ma-combo-content li {
> font-size:15px !important;}
> #yiv3783602586 * .filtered99999 .yiv3783602586e2ma-holder table,
> #yiv3783602586 * .filtered99999 .yiv3783602586e2ma-holder table td {
> display:table;float:none;width:100%
> !important;padding-left:0 !important;padding-right:0 !important;}
> #yiv3783602586 * .filtered99999
> .yiv3783602586e2ma-single-column-layout table {
> float:none;margin:0 auto;}
> #yiv3783602586 * .filtered99999
> .yiv3783602586e2ma-unsubscribe span {
> font-size:12px !important;}
> #yiv3783602586 * .filtered99999 .yiv3783602586business_rsvp {
> font-size:12px !important;}
> #yiv3783602586 * .filtered99999 .yiv3783602586social-sharing {
> text-align:center;padding-bottom:10px;}
> #yiv3783602586 * .filtered99999
> .yiv3783602586e2ma-layout-column-content img, #yiv3783602586
> * .filtered99999 .yiv3783602586e2ma-single-column-layout
> img, #yiv3783602586 * .filtered99999
> .yiv3783602586e2ma-layout-column-sidebar img, #yiv3783602586
```



```
> * .filtered99999 .yiv3783602586e2ma-layout-column-sidebar-2
> img, #yiv3783602586 * .filtered99999
> .yiv3783602586e2ma-layout-column-sidebar-3 img {
> max-width:100%;height:auto;margin:0 auto;}
> #yiv3783602586 * .filtered99999 .yiv3783602586footer-social img {
> width:44px !important;height:43px !important;margin:0 auto;}
> #yiv3783602586 * .filtered99999 .yiv3783602586share-block {
> text-align:center;margin:0 auto !important;}
> #yiv3783602586 * .filtered99999 .yiv3783602586footer-text {
> text-align:center;}
> #yiv3783602586 * .filtered99999 .yiv3783602586mobile-width {
> width:100% !important;padding-left:10px;padding-right:10px;}
> #yiv3783602586 * .filtered99999
> .yiv3783602586mobile-width-nopad {
> width:100% !important;}
> #yiv3783602586 * .filtered99999 .yiv3783602586stack,
> #yiv3783602586 * .filtered99999
> .yiv3783602586e2ma-layout-column-content, #yiv3783602586 *
> .filtered99999 .yiv3783602586e2ma-layout-column-sidebar,
> #yiv3783602586 * .filtered99999
> .yiv3783602586e2ma-layout-column-sidebar-2, #yiv3783602586 *
> .filtered99999 .yiv3783602586e2ma-layout-column-sidebar-3 {
> display:block;width:100% !important;}
> #yiv3783602586 * .filtered99999 .yiv3783602586hide { display:none;}
> #yiv3783602586 * .filtered99999 .yiv3783602586center,
> #yiv3783602586 * .filtered99999 .yiv3783602586center img {
> text-align:center;margin:0 auto;}
> #yiv3783602586 * .filtered99999 .yiv3783602586scale img,
> #yiv3783602586 * .filtered99999 .yiv3783602586editable_image img {
> max-width:100%;height:auto;margin:0 auto;}
> #yiv3783602586 * .filtered99999 .yiv3783602586addpad { padding:10px
> !important;}
> #yiv3783602586 * .filtered99999 .yiv3783602586addpad-top {
> padding-top:10px !important;}
> #yiv3783602586 * .filtered99999 .yiv3783602586sanpad {
> padding:0 !important;}
> #yiv3783602586 * .filtered99999 .yiv3783602586sanborder { border:none
> !important;}}
>
>
>
>
>
>
>
>
>
>
>
>
>
>
```

>
 >
 >
 >
 >
 >
 >
 >
 > U.S.
 > Department of EnergyThe Northern Pass
 > Transmission Line Project
 >
 > Draft
 > Environmental Impact Statement
 >
 > Notice of Public
 > Hearing
 >
 >
 >
 >
 > The
 > U.S. Department of Energy (DOE) has prepared a Draft
 > Environmental Impact Statement (EIS) pursuant to the
 > National Environmental Policy Act (NEPA) of 1969 as amended
 > (42 U.S.C. 4321 et seq.), the Council on Environmental
 > Quality (CEQ) NEPA regulations (40 CFR §§1500-1508), and
 > the DOE NEPA implementing procedures (10 CFR §1021).
 >
 > The U.S. Forest
 > Service – White Mountain National Forest (USFS), the U.S.
 > Army Corps of Engineers – New England District (USACE),
 > the U.S. Environmental Protection Agency – Region 1 (EPA),
 > and the New Hampshire Office of Energy and Planning (NHOEP)
 > are cooperating agencies in the preparation of the
 > EIS.
 > The draft EIS
 > addresses potential environmental impacts of the proposed
 > action, the no action alternative, and the range of
 > reasonable alternatives.
 > DOE invites public
 > and agency comment on the draft EIS. The document is
 > available online at <http://www.northernpasseis.us/>.
 >
 > Copies of the
 > draft EIS are also available at a number of public libraries
 > and town halls (a list of locations is found here:
http://media.northernpasseis.us/media/DraftEIS_Hard_Copy_Locations.pdf)
 > and can be obtained from Mr. Brian Mills at the contact
 > information given below.
 > DOE will conduct public hearings to receive comments
 > on the draft EIS at the following locations commencing at

> the times identified:

>

>

> Concord:

>

> Tuesday October 6, 2015, 6:00 p.m.

>

> Grappone Conference Center

>

> Granite Ballroom

>

> 70 Constitution Avenue

>

> Concord, NH 03301

> Whitefield:

>

> Wednesday October 7, 2015 1:00 p.m.

> and 6:00 p.m.

>

> Mountain View Grand Resort and Spa

>

> Presidential Room

>

> 101 Mountain View Road

>

> Whitefield, NH 03598

> Plymouth:

>

> Thursday October 8, 2015, 6:00 p.m.

>

> Plymouth State University

>

> Ice Arena Welcome Center

>

> 129 NH Route 175A

>

> Holderness, NH 03245

> Please

> note that, in order to better accommodate the public

> interest in these hearings, two hearing sessions will be

> held in Whitefield on October 7, 2015. The format of all

> hearings, including the afternoon session in Whitefield,

> will be identical. A court reporter will be present to

> record comments for the record; interested individuals need

> only submit their oral comments once.

> Requests to pre-register to provide

> oral comments at a public hearing should be addressed to the

> Northern Pass EIS Team at this e-mail address: info@northernpasseis.us.

> Please include your full name and e-mail address, and

> specify the location where you would like to provide oral

> comments. For the Whitefield, NH meeting, please indicate

> the meeting time (1pm or 6pm) of your request. Please state

- > in the subject line, "NP Draft EIS Public Hearing Request
- > to Pre-Register to Provide Oral Comment." Please submit
- > your request by September 30, 2015; requests received by
- > that date will be given priority in the order for comments.
- > However, requests to provide oral comments may also be made
- > at the hearing. The order for commenting will be as follows:
- > (1) Elected Officials; (2) Pre-registered commenters (order
- > determined on a first-come, first-served basis); (3)
- > Commenters registering at the meeting. Pre-registered
- > commenters who have requested to speak at a specific time
- > will be accommodated as possible.
- > Each commenter
- > will be allotted three (3) minutes. Individuals who have
- > already spoken may have the opportunity to speak again when
- > all other participants have made their first
- > comments.
- > If assistance is
- > needed to participate in any of the DOE hearings (e.g.,
- > qualified interpreter, computer-aided real-time
- > transcription), please submit a request for auxiliary aids
- > and services to DOE by September 25, 2015 by contacting
- > Brian Mills as described below or e-mailing info@northernpasseis.us.
- >
- > In addition to
- > comments on the draft EIS, DOE is seeking public input with
- > respect to the cultural and historic property information
- > presented in this draft EIS in accordance with its cultural
- > and historic property review under Section 106 of the
- > National Historic Preservation Act.
- > Comments on the draft EIS and
- > Section 106 can be submitted verbally during public
- > hearings; on the project website (<http://www.northernpasseis.us/comment/>);
- > in writing to Mr. Brian Mills at: Office of Electricity
- > Delivery and Energy Reliability (OE-20), U.S. Department of
- > Energy, 1000 Independence Avenue, SW, Washington, DC 20585;
- > via e-mail to draftEIScomments@northernpasseis.us
- > or Section106comments@northernpasseis.us;
- > or by facsimile to (202) 586-8008. Please mark envelopes and
- > electronic mail subject lines as "NP Draft EIS Comments"
- > or "NP Section 106 Comments." Written comments must be
- > received by October 29, 2015. Comments submitted after that
- > date will be considered to the extent
- > practicable.
- >
- >
- >
- >
- >
- >
- >
- >
- >
- >



Mr. Lewis H. Parker
118 Knox Hill Rd
Fayette, ME 04349-3448

8/11/15

Re: Northern Pass Transmission Line Project;

Sir: I can't imagine that after years of study and planning, that any plan is for the destruction forever the thousands of acres of precious countryside. This is not only the power line and its eye sore presence but a road has to be maintained for service and right of way has to be kept clear.

So money does not enter into long term expertise the view also is forever. Why wasn't an underground tunnel considered? Once built everything can go back to almost normal except for access points. Cost doesn't matter because it is a forever thing and can be put over X amount of years. The other method would be to send it down the Conn. River. It's not as if its never been done its just nobody wants to think of the future.

If you have any doubts about any of this go where a wind farm is in operation. We can get used to the towers but go further and look at the access roads. There can't just grow back in 100 years or so but have to be kept open for service and replacement. We have the technology to do all these things but I wonder if we have the mentality to do it right.

Sincerely,
Lewis Parker

0246-1

Thank you for your comment. Northern Pass has applied to the Department of Energy for a Presidential permit for an HVDC transmission line that would run from Quebec, Canada to Deerfield, NH. Executive Order (EO) 10485, as amended by EO 12038, "requires that executive permission be obtained for the construction and maintenance at the borders of the United States of facilities for the exportation or importation of electric energy." DOE is authorized to "receive applications for the construction, operation, maintenance, or connection, at the borders of the United States, of facilities for the transmission of electric energy between the United States and a foreign country[.]" and "[u]pon finding the issuance of the permit to be consistent with the public interest, and, after obtaining the favorable recommendations of the Secretary of State and the Secretary of Defense thereon, to issue to the applicant, as appropriate, a permit for [the] construction, operation, maintenance, or connection." (EO 10485). DOE, however, does not have siting authority for the Project. In this case, the New Hampshire Site Evaluation Committee has siting authority for the Project in the state of New Hampshire. Additionally, the USFS has siting authority for portions of the Project located in the White Mountain National Forest. (For further discussion, see Sections 1.1-1.3 of the final EIS.) While DOE's authority is limited to the approval or denial of the amended Presidential permit application (August 2015) as requested by the Applicant, DOE's policy is to analyze not only the proposed border crossing, but also the alignment of new infrastructure required between the proposed border crossing and connection to the existing U.S. electricity system as a connected action. In keeping with this policy, DOE analyzed the potential environmental impacts of the alignment proposed by the Applicant. In addition, in response to input from Cooperating Agencies, other agencies, and extensive public comment, DOE analyzed a range of other alignments and underground and overhead configurations between the proposed border crossing and connection with the existing U.S. electricity system. The EIS analyzes in detail the No Action Alternative and eleven action alternatives. The EIS analyzes several full-burial alternatives in detail (Alternatives 3, 4a, 4b, and 4c). The potential environmental impacts of all twelve alternatives, as well as technical constraints and costs, are discussed throughout the EIS. Additionally, seventeen alternatives were considered but eliminated from detailed analysis. Section 2.4 of the final EIS has been updated with additional information on alternatives considered but eliminated from detailed analysis.

0246-1

Northern Pass EIS Website Comment Receipt

0247-1

Thank you for your comment.

Refers to Comment placed on Sep 7, 2015

ID: 8372**Date Entered:** Sep 7, 2015**Source:** Website**Topics:** Private Property/Land Use**Organization:**

Comment: The proposed Northern Pass project, even WITH the recent route revisions (including the commitment to bury more miles of line) is still troublesome, as there are still plans to erect towers (or increase the size and scope of existing lines); this will impact NH's scenic landscape; it will impact property tax values/re-sale real estate values; it will erode tourism in NH; it will impact peoples' lives disproportionate to the benefits any NH person shall receive. We LOVE our land. We take care of our land. The entire Northern Pass line MUST BE BURIED for it to be at all conducive to/aligned with NH values and economic balance. Thank you. Sincerely, Karen Currier, town of Holderness resident & taxpayer; also, taxpayer in Campton, NH.

0247-1

Northern Pass EIS Website Comment Receipt

Refers to Comment placed on Sep 7, 2015

ID: 8373

Date Entered: Sep 7, 2015

Source: Website

Topics: Alternatives

Name: Timothy Duggan

Organization:

City: Concord

State: MA

Country: US

Comment: NPT buries lines when it's convenient for them to do so. Listening to Eversource NH President Bill Quinlan, however, you'd think that their plans for burial are all in response to their alleged public outreach campaigns. Why aren't they burying the lines in Concord? Because nobody asked. That's it, Bill? That's all you've got? Nobody asked? Please.

Look closely at the buried segments in Coos County – does anyone honestly think that the citizens of Pittsburg and Clarksville only asked for what amounts to less than 600 yards of buried lines at the Connecticut River crossing? The reality is that buried segment has nothing to do with what anyone asked for – it is a result of the company's failure to purchase or lease adequate rights of way for their project. When faced with this gap in their overhead plans, they resorted to burial under public roadways as a convenient alternative.

And they spared no expense in doing so - 2 "transition stations" costing \$2.5 Million each to connect 2 points on the map that are less than 600 yards apart.

Once across the river in Clarksville and back onto their purchased Right of Way, the company immediately resorts back to the cheapest alternative – overhead lines on steel lattice towers. Why not simply continue underground? Apparently nobody asked for that.

But then, just 2 miles away from where the first underground segment ends, the second underground segment begins. Another result of the outreach campaigns, I'm sure.

The reality is the company once again failed to purchase or lease adequate rights of way for the new power lines. And once again, the company resorted to burial under public roadways as a convenient

0248-1

Thank you for your comment. Northern Pass has applied to the Department of Energy for a Presidential permit for an HVDC transmission line that would run from Quebec, Canada to Deerfield, NH. Executive Order (EO) 10485, as amended by EO 12038, "requires that executive permission be obtained for the construction and maintenance at the borders of the United States of facilities for the exportation or importation of electric energy." DOE is authorized to "receive applications for the construction, operation, maintenance, or connection, at the borders of the United States, of facilities for the transmission of electric energy between the United States and a foreign country[,]" and "[u]pon finding the issuance of the permit to be consistent with the public interest, and, after obtaining the favorable recommendations of the Secretary of State and the Secretary of Defense thereon, to issue to the applicant, as appropriate, a permit for [the] construction, operation, maintenance, or connection." (EO 10485). DOE, however, does not have siting authority for the Project. In this case, the New Hampshire Site Evaluation Committee has siting authority for the Project in the state of New Hampshire. Additionally, the USFS has siting authority for portions of the Project located in the White Mountain National Forest. (For further discussion, see Sections 1.1-1.3 of the final EIS.) While DOE's authority is limited to the approval or denial of the amended Presidential permit application (August 2015) as requested by the Applicant, DOE's policy is to analyze not only the proposed border crossing, but also the alignment of new infrastructure required between the proposed border crossing and connection to the existing U.S. electricity system as a connected action. In keeping with this policy, DOE analyzed the potential environmental impacts of the alignment proposed by the Applicant. In addition, in response to input from Cooperating Agencies, other agencies, and extensive public comment, DOE analyzed a range of other alignments and underground and overhead configurations between the proposed border crossing and connection with the existing U.S. electricity system. The EIS analyzes in detail the No Action Alternative and eleven action alternatives. The EIS analyzes several full-burial alternatives in detail (Alternatives 3, 4a, 4b, and 4c). The potential environmental impacts of all twelve alternatives, as well as technical constraints and costs, are discussed throughout the EIS. Additionally, seventeen alternatives were considered but eliminated from detailed analysis. Section 2.4 of the final EIS has been updated with additional information on alternatives considered but eliminated from detailed analysis.

0248-1

alternative.

Consider this: the 2 underground segments in Coos County are 2 miles apart. They are connected by 23 steel lattice towers with an average height of roughly 85 feet. 2 of these towers are 100 feet tall. Why can't these 2 underground segments be connected underground? Simply continue underground in Clarksville to bridge the 2 mile distance and create a single underground segment with a single pair of transition stations as opposed to the 4 transition stations currently planned. The \$5 Million total savings in transition stations would offset the additional cost to bury the 2 miles of overhead line between the underground segments. The citizens of Clarksville would have 23 fewer overhead towers to look at and 2 fewer transition stations in their town. Clarksville would no longer be a "tower town", joining the ranks of the towns farther south that were deemed valuable enough by Eversource and NPT to receive 100% burial.

This "single segment" alternative is a common-sense approach that would certainly have been considered and adopted had Eversource and NPT been genuinely interested in public outreach and minimizing the impact of their project on the communities it passes through. The fact that they rejected this approach and instead chose the slightly cheaper alternative in order to maximize their profits is one of the most obvious examples of the mindset of the decision makers at Eversource and NPT.

The more they talk about "listening" and the more we hear about (rather than experience) "public outreach", the larger this 2 mile section of the route looms. It is a clear and constant reminder that no matter what the company says, they will never bury any more of this line than they feel they absolutely have to. Every mile of overhead means additional precious profit for them – this is, and always has been, the one and only reason that they've resisted underground alternatives.

Except, of course, when it is convenient for them.

The Draft EIS is clear – 100% burial has the least overall environmental impact of any option other than "No Build". The company has shown with their "Forward NH" plan that burial over long distances is feasible and cost effective.

That leaves one and only one option if this project is to be built.

4a.

All the way.

0248-1

Continued 0248-1 cont'd

0249-1

Thank you for your comment.

From: koneillsims@comcast.net
Sent: Friday, August 28, 2015 7:22 AM
To: info@northernpasseis.us
Subject: Re: DOE Northern Pass Transmission Line Project Draft EIS Notice of Public Hearing

hello:

I do plan on turning up at the meeting in concord. I have never spoken at one of these meetings, but am completely willing to do so.

I am opposed to this project on environmental grounds and the fact the energy will be coming from a not particularly green hydroelectric plant in Quebec. I think we need to move forward in finding truly sustainable, green energy. this project provides a purely stop-gap measure and doesn't solve anything.

god forbid, people should use less or try solar.

Kathleen sims
 184 colburn road
 new boston, nh 03070

0249-1

From: "Northern Pass EIS" <info@northernpasseis.us>
To: koneillsims@comcast.net
Sent: Thursday, August 27, 2015 4:00:42 PM
Subject: DOE Northern Pass Transmission Line Project Draft EIS Notice of Public Hearing



U.S. Department of Energy
The Northern Pass Transmission Line Project
Draft Environmental Impact Statement
Notice of Public Hearing

The U.S. Department of Energy (DOE) has prepared a Draft Environmental Impact Statement (EIS) pursuant to the National Environmental Policy Act (NEPA) of 1969 as amended (42 U.S.C. 4321 et seq.), the Council on Environmental Quality (CEQ) NEPA regulations (40 CFR §§1500-1508), and the DOE NEPA implementing procedures (10 CFR §1021).

The U.S. Forest Service – White Mountain National Forest (USFS), the U.S. Army Corps of Engineers – New England District (USACE), the U.S. Environmental Protection Agency – Region 1 (EPA), and the New Hampshire Office of Energy and Planning (NHOEP) are cooperating agencies in the preparation of the EIS.

The draft EIS addresses potential environmental impacts of the proposed action, the no action alternative, and the range of reasonable alternatives.

DOE invites public and agency comment on the draft EIS. The document is available online at <http://www.northernpasseis.us/>.

Copies of the draft EIS are also available at a number of public libraries and town halls (a list of locations is found here: http://media.northernpasseis.us/media/DraftEIS_Hard_Copy_Locations.pdf) and can be obtained from Mr. Brian Mills at the contact information given below.

DOE will conduct public hearings to receive comments on the draft EIS at the following locations commencing at the times identified:

Concord:

Tuesday October 6, 2015, 6:00 p.m.
Grappone Conference Center
Granite Ballroom
70 Constitution Avenue
Concord, NH 03301

Whitefield:

Wednesday October 7, 2015 1:00 p.m. and 6:00 p.m.
Mountain View Grand Resort and Spa
Presidential Room
101 Mountain View Road
Whitefield, NH 03598

Plymouth:

Thursday October 8, 2015, 6:00 p.m.
Plymouth State University
Ice Arena Welcome Center
129 NH Route 175A
Holderness, NH 03245

Please note that, in order to better accommodate the public interest in these hearings, two hearing sessions will be held in Whitefield on October 7, 2015. The format of all hearings, including the afternoon session in Whitefield, will be identical. A court reporter will be present to record comments for the record; interested individuals need only submit their oral comments once.

Requests to pre-register to provide oral comments at a public hearing should be addressed to the Northern Pass EIS Team at this e-mail address: info@northernpasseis.us. Please include your full name and e-mail address, and specify the location where you would like to provide oral comments. For the Whitefield, NH meeting, please indicate the meeting time (1pm or 6pm) of your request. Please state in the subject line, "NP Draft EIS Public Hearing Request to Pre-Register to Provide Oral Comment." Please submit your request by September 30, 2015; requests received by that date will be given priority in the order for comments. However, requests to provide oral comments may also be made at the hearing. The order for commenting will be as follows: (1) Elected Officials; (2) Pre-registered commenters (order determined on a first-come, first-served basis); (3) Commenters registering at the meeting. Pre-registered commenters who have requested to speak at a specific time will be accommodated as possible.

Each commenter will be allotted three (3) minutes. Individuals who have already spoken may have the opportunity to speak again when all other participants have made their first comments.

If assistance is needed to participate in any of the DOE hearings (e.g., qualified interpreter, computer-aided real-time transcription), please submit a request for auxiliary aids and services to DOE by September 25, 2015 by contacting Brian Mills as described below or e-mailing info@northernpasseis.us.

In addition to comments on the draft EIS, DOE is seeking public input with respect to the cultural and historic property information presented in this draft EIS in accordance with its cultural and historic property review under Section 106 of the National Historic Preservation Act.

Comments on the draft EIS and Section 106 can be submitted verbally during public hearings; on the project website (<http://www.northempasseis.us/comment/>); in writing to Mr. Brian Mills at: Office of Electricity Delivery and Energy Reliability (OE-20), U.S. Department of Energy, 1000 Independence Avenue, SW, Washington, DC 20585; via e-mail to draftEIScomments@northempasseis.us or Section106comments@northempasseis.us; or by facsimile to (202) 586-8008. Please mark envelopes and electronic mail subject lines as "NP Draft EIS Comments" or "NP Section 106 Comments." Written comments must be received by October 29, 2015. Comments submitted after that date will be considered to the extent practicable.

www.northempasseis.us

Share this email:



[Manage](#) your preferences | [Opt out](#) using TrueRemove™
Got this as a forward? [Sign up](#) to receive our future emails.
View this email [online](#).

Northern Pass Transmission Line Project
P.O. Box 2729
Frisco, CO 80443-9901

This email was sent to koneillsims@comcast.net.
To continue receiving our emails, add us to your address book.

Northern Pass EIS Website Comment Receipt

Refers to Comment placed on Sep 10, 2015

ID: 8376

Date Entered: Sep 10, 2015

Source: Website

Topics: Purpose and Need, Alternatives

Name: Jane Kellogg

Organization:

Email: luvmts.jk@gmail.com

Mailing Address: 40 Gray Rd

City: Campton

State: NH

Country: US

Comment: I question the need for this project in the first place. Has it truly been deemed in the public's best interest? IF it is in the best interest to residents of NH, then the entire line should be buried so tourism, property values, and quality of recreational experiences are not effected.

0250-1

Thank you for your comment. As described in Section 1.1.1 of the EIS, Executive Order (E.O.) 10485, as amended by E.O. 12038, authorizes the Secretary of Energy "Upon finding the issuance of the permit to be consistent with the public interest, and, after obtaining the favorable recommendations of the Secretary of State and the Secretary of Defense thereon, to issue to the applicant, as appropriate, a permit for [the] construction, operation, maintenance, or connection" of "facilities for the transmission of electric energy between the United States and a foreign country." Thus, in deciding whether to issue a Presidential permit, DOE must determine whether doing so would be "consistent with the public interest." In addition, the Departments of State and Defense must both make "favorable recommendations" on the issuance of the permit. In deciding whether the issuance of a Presidential permit would be consistent with the public interest, DOE assesses the environmental impacts of the proposed project and reasonable alternatives, the impact of the proposed action on electric reliability, and any other factors that DOE may also consider relevant to the public interest. DOE will announce its decision whether to issue a permit – as well as the factors DOE considered in making its decision – in the Record of Decision (ROD). DOE would issue a ROD no sooner than 30 days after the EPA publishes the Notice of Availability for this final EIS in the Federal Register.

0250-1

From: Richard Spadoni <rhspadoni@gmail.com>
Sent: Wednesday, September 09, 2015 5:21 AM
To: draftEIScomments@northernpasseis.us
Subject: Draft EIS Comments Concerning the Northern Pass Project

I believe the Northern Pass transmission line should be almost entirely buried as presented in alternative 4a. Clearly, the technology exists for such burial. Having observed large transmission towers in other locations in the US, I have a great appreciation for the visual impact created by the towers. It is significant, and especially so for a beautiful area such as New Hampshire. New Hampshire, more than most areas of the US, depends on "visual tourism". The tourism of New Hampshire is almost entirely outdoor, a natural environment type of tourism. Tourism will be impacted if the project is constructed using massive towers, even with the partial burial proposed by the private enterprise behind this project. Also, in fairness to the residents of New Hampshire, why subject any of them to the impact to their quality of life by allowing the erection of massive towers when burial of the lines is feasible and is a staple of the energy industry. I appreciate that burial costs more than towers, but the long-term economics indicate this project will be feasible and successful with burial of the line. In comparing the consequences of transmission line burial versus the use of towers, without doubt, burial greatly reduces the negative impacts imposed on the people of New Hampshire. Thank you for this opportunity to comment on this proposed project.

Richard H Spadoni
 124A Woodland Loop
 Lincoln, New Hampshire 03251

and

100 SW 13th Avenue
 Boca Raton, FL 33486

Phone: 561-654-9563
 Email: rhspadoni@gmail.com

0251-1

Thank you for your comment. The EIS evaluates several alternatives that include burial of the Project and/or specific segments of the Project. Each of these alternatives is evaluated and compared within the Socioeconomic section of the EIS (see Section 4.1.2). The EIS additionally analyzes the importance of tourism to New Hampshire, businesses, and the local and regional economy. The EIS (Section 3.1.2) and the Socioeconomic Technical Report describe the methods used to analyze potential impact to tourism for this EIS. As discussed in Section 4.1.2 of the EIS, no authoritative peer-reviewed studies were identified that address impacts to tourism as a result of the construction of transmission lines, and DOE did not attempt to develop such a study. No other resources were identified to allow for quantification of potential impacts. The EIS concludes that "while it is reasonable to conclude that the Project may have some level of impact on tourism within New Hampshire and on individual locations near the Project route, these are not quantifiable." Additionally, Section 4.1.1 addressed potential impacts to Visual Resources which may result.

0251-1

Northern Pass EIS Website Comment Receipt

0252-1

Thank you for your comment.

Refers to Comment placed on Sep 14, 2015

ID: 8379**Date Entered:** Sep 14, 2015**Source:** Website**Topics:** Purpose and Need**Name:** Heather Gray**Organization:****Email:** hgray@ucvh.org**Mailing Address:** 335 Tabor Road**City:** Pittsburg**State:** NH**Country:** US

Comment: Is there a REAL need for this foreign country to be bringing electricity to the USA? I can not support the Northern Pass in any way, what are they thinking? As a resident/landowner in Pittsburg, N.H. I think it is deplorable to even be entertaining the idea!!

0252-1

Northern Pass EIS Website Comment Receipt

Refers to Comment placed on Sep 14, 2015

ID: 8381

Date Entered: Sep 14, 2015

Source: Website

Topics: Alternatives

Organization:

Comment: I strongly urge full burial of the HVDC line along its entire length. Alternatives 4a, 4b, and 4c meet my expectations for burial. I see primary benefits to those approaches in the areas of viewshed/scenery, tourism, private property/land use, and health/safety. I also would support The Society for Protection of NH Forests fine suggestion to add an international border crossing option at Derby Line, VT and a buried line along the interstate 91 and 93 corridors.

0253-1

Thank you for your comment. Northern Pass has applied to the Department of Energy for a Presidential permit for an international border crossing associated with an HVDC transmission line that would run from Quebec, Canada to Deerfield, NH. Executive Order (EO) 10485, as amended by EO 12038, "requires that executive permission be obtained for the construction and maintenance at the borders of the United States of facilities for the exportation or importation of electric energy." DOE is authorized to "receive applications for the construction, operation, maintenance, or connection, at the borders of the United States, of facilities for the transmission of electric energy between the United States and a foreign country[,]" and "[u]pon finding the issuance of the permit to be consistent with the public interest, and, after obtaining the favorable recommendations of the Secretary of State and the Secretary of Defense thereon, to issue to the applicant, as appropriate, a permit for [the] construction, operation, maintenance, or connection." (EO 10485). DOE, however, does not have siting authority for the Project. In this case, the New Hampshire Site Evaluation Committee has siting authority for the Project in the state of New Hampshire. Additionally, the USFS has siting authority for portions of the Project located in the White Mountain National Forest. (For further discussion, see Sections 1.1-1.3 of the final EIS.) While DOE's authority is limited to the approval or denial of the amended Presidential permit application (August 2015) as requested by the Applicant, DOE's policy is to analyze not only the proposed border crossing, but also the alignment of new infrastructure required between the proposed border crossing and connection to the existing U.S. electricity system as a "connected action" under NEPA. In keeping with this policy, DOE analyzed the potential environmental impacts of the alignment proposed by the Applicant. In addition, in response to input from Cooperating Agencies, other agencies, and extensive public comment, DOE analyzed a range of other alignments and underground and overhead configurations between the proposed border crossing and connection with the existing U.S. electricity system. The EIS analyzes in detail the No Action Alternative and eleven action alternatives. Additionally, seventeen alternatives were considered but eliminated from detailed analysis. Section 2.4 of the final EIS has been updated with additional information on alternatives considered but eliminated from detailed analysis. Among these alternatives, DOE considered two alternate border crossings. One was an alternative that would utilize the existing National Grid Phase I/II route, including its border crossing in Vermont. Based on its review of the National Grid alternative DOE determined that this alternative is not reasonable. Section

0253-1

2.4.3 of the final EIS has been updated with additional information related to the National Grid alternative. Separately, in response to comments received on the draft EIS, DOE considered a second alternative border crossing in Vermont, specifically identified as a border crossing at Derby Line, VT that would utilize I-91. DOE determined that this alternative is not reasonable. Section 2.4.17 of the final EIS has been added to reflect consideration of this alternative and DOE's determination.

Northern Pass EIS Website Comment Receipt

Refers to Comment placed on Sep 15, 2015

ID: 8383

Date Entered: Sep 15, 2015

Source: Website

Topics: Private Property/Land Use, Environmental Justice

Name: Orzeck

Organization: Connecticut Headwaters

Country: US

Comment: How can any alternatives that include the Connecticut Headwaters Tract be viable? Don't you have to show ownership of a route in order to consider it as a viable alternative?

0255-1

Thank you for your comment. As noted in the Land Use Technical Report, data from the Complex Systems Research Center at the University of New Hampshire was utilized to identify conserved land parcels in or adjacent to the project corridors using Geographic Information Systems (GIS) software. This dataset represents the best available statewide data regarding conservation lands in New Hampshire. Overlapping areas between conservation lands and the Project were quantified and the ownership (municipal/county, federal, state, private, etc.), public access, and land status of the potentially impacted conservation lands were considered. Based on this analysis, the project is not expected to impact the Connecticut Lakes Headwaters easement. Potential visual impacts in the Northern Section (where the Connecticut Lakes Headwaters are located) are discussed in Section 4.2.1 of the EIS. Impacts to the broader landscape are analyzed throughout the EIS.

0255-1

The EIS analyzes the potential environmental impacts of Alternative 7 - Proposed Action, as well as the No Action Alternative (Alternative 1) and ten other action alternatives. A summary comparison of impacts is presented in Sections S.9 and 2.5 of the EIS. As explained in Appendix B, Section B.2.1 of the EIS, DOE's responsibilities under the Presidential permit regulations (10 CFR Part 250) are limited to responding to an application for an international border crossing for a transmission project. The scope of DOE's decision is whether or not to grant the requested Presidential permit for the Project at the international border crossing proposed in the amended Presidential permit application (August 2015). The New Hampshire Site Evaluation Committee has siting authority for the Project in the state of New Hampshire. Additionally, the USFS has siting authority for portions of the Project located in the WMNF. Therefore, the selection of a particular alternative alignment within the state of New Hampshire is beyond the scope of DOE's decision. The USFS will specify the selected alignment within the WMNF in a Record of Decision.

Northern Pass EIS Website Comment Receipt

0256-1

Thank you for your comment.

Refers to Comment placed on Sep 15, 2015

ID: 8384

Date Entered: Sep 15, 2015

Source: Website

Topics: Alternatives, Soils

Name: Orzeck

Organization: 4a all the way...

Country: US

Comment: Upon review of my preferred alternative of 4a, it appears that all soils range from glacial till through prime farmland to dune sand, with a depth of >65" to bedrock. And this does not account for the pre-softening of the existing roadways. Sounds like pretty easy digging to me...

0256-1

Northern Pass EIS Website Comment Receipt

0257-1

Thank you for your comment.

Refers to Comment placed on Sep 18, 2015

ID: 8385**Date Entered:** Sep 18, 2015**Source:** Website**Topics:** Alternatives**Name:** Shell Noyes**Organization:****Email:** mnoise888@roadrunner.com**Country:** US

Comment: Eversource can pay to bury the Northern Pass transmission line. New Hampshire doesn't need the energy and should not bear any of the consequences of overhead lines. In this modern world, as well as in our own local region, Eversource should be held to the same current technological standards that other transmission lines are being constructed with. Burying the entire project should be a requirement, if ever constructed at all.

0257-1

Northern Pass EIS Website Comment Receipt

0258-1

Thank you for your comment.

Refers to Comment placed on Sep 18, 2015

ID: 8386**Date Entered:** Sep 18, 2015**Source:** Website**Topics:** Alternatives**Name:** Shell Noyes**Organization:****Email:** mnoise888@roadrunner.com**Country:** US

Comment: "Forward NH"? Interesting spin. Does Eversource think we should buy into the "One small step for man, one giant leap for mankind" mindset when it comes to the Northern Pass? For the good of our New England neighbors should we embrace Northern Pass? This step 'forward NH', burying 60 miles of transmission lines and continuing to overhead 132 miles of line is still archaic, third world and hardly a leap forward for NH, never mind even a step forward for NH!

Somehow I don't think it's an act of kindness to NH or a sacrifice for the good of mankind in the New England power grid that Eversource is promoting their revised project. Nor do I think someone opposed to it hates their neighbors and is selfish.

With the Eversource substandard approach to high voltage transmission of electricity, the project phrase should be: 'One small step forward Northern Pass, one hundred and thirty two giant miles backward New Hampshire!'

Bury it or forget it!

0258-1

From: teach123abc@comcast.net
Sent: Sunday, September 13, 2015 2:17 PM
To: drafteiscomments@northernpasseis.us
Subject: Northern Pass Project

Dear Mr. Mills,
 I am writing in regard to the Northern Pass Project. I live in East Concord and am very concerned about the proposed towers and how it will affect the value of my home and the natural beauty of Concord and surrounding towns. If the towers go in, I would be able to see the unsightly towers from the front of my house. I truly believe that the transmissions lines should be buried in its 8-mile path through Concord. I appreciate all that you could do to help fight the putting up of towers and fighting to have the transmission lines buried underground.
 I thank you in advance for your attention to this extremely important matter.
 Sincerely,
 Marie A. Rieger
 5 Irving Drive
 Concord, NH 03301

0259-1

Thank you for your comment. The EIS analyzes several full-burial alternatives in detail (Alternatives 3, 4a, 4b, and 4c), which include burial through Concord, NH. The potential environmental impacts of all twelve alternatives, as well as technical constraints and costs, are discussed throughout the EIS.

0259-1

0260-1

Thank you for your comment.

From: pdtate@comcast.net
Sent: Sunday, September 13, 2015 3:45 PM
To: drafteiscomments@northernpasseis.us
Subject: Northern Pass

Dear Senior Planning Advisor Mills,

As a resident of Concord, and a potential "neighbor" of the Northern Pass towers, I strongly urge you to vote against this monstrosity proposed by Hydro-Quebec, which would be visible from my home and lower my property value. To the best of my knowledge, Eversource does not even service this area; we are serviced by Unitil. Despite providing minimal to no benefits to the residents of this town, these extremely huge and unsightly towers would mar the beauty of nearby Turtle Town Pond, as well as every home in Concord within sight.

Eversource is looking out for its own best interest, not the people of Concord or the rest of New Hampshire. As I understand the facts, this energy is to be sold to residents of Southern New England, and not the residents of New Hampshire. For that reason, I am against these lines no matter where they are placed, as I oppose the destruction of our natural beauty for the benefit of other states. I know of no one who wishes to visit our beautiful New Hampshire to see a giant Erector set scattered across our landscape.

If it must be built, it should be buried, no matter the cost. When the costs increase for any product or utility, the provider simply raises the rate or cost of the product to the end consumer. Let the recipients of this energy pay the costs.

Thank you for reading my thoughts.

Sincerely,

Paul D. Tate

8 Edward Drive
Concord, NH 03301-8626
(H)-603-225-0335

0260-1

Northern Pass EIS Website Comment Receipt

Refers to Comment placed on Sep 20, 2015

ID: 8389

Date Entered: Sep 20, 2015

Source: Website

Topics: Health and Safety, Viewshed/Scenery, Private Property/Land Use, Economic, Tourism, Quality of Life

Name: Ellen Schaffer

Organization:

Email: ellen726@hotmail.com

Mailing Address: 34 Irving Dr

City: Concord

State: NH

Country: US

Comment: I do not support the Northern Pass. Since this is a merchant project there is no need to put this thru NH and especially Concord. I live in the Turtle Pond area and this will change the beauty of the area. We already have towers but they are mostly obscured by the trees. The lines will be much bigger and I worry about the potential health effects on the people in the nearby homes. The buzzing that the towers will make also can take a toll on a person's mental health. It is estimated that our property values will go down about 20%. We have lived in our home for 25 years and it is not right to have that happen for a merchant project that benefits people in another state.

0261-1

Thank you for your comment. Noise impacts from aboveground portions of the Project are described in Section 4.1.7 of the EIS, and in Section 3.2.2.5 of the Noise Technical Report. The audible noise due to the corona effect would not exceed the EPA guidance level of 55 dBA for outdoor areas beyond the transmission route. Additional analysis of potential impacts to property values is presented in Section 4.1.2 of the EIS. Potential health and safety impacts are described for each alternative in Section 4 of the EIS. Visual impacts in Concord are discussed in the EIS (Section 4.4.1). Potential visual impacts in urban areas were overstated in the draft EIS. Because the Concord area is urban, there was no estimation of screening from land cover which leads to an overstatement of visibility in the developed areas of Concord. The analysis has been updated for the final EIS to include additional data reflecting the height of land cover in Concord which better represents the visibility of the Project.

0261-1

Northern Pass EIS Website Comment Receipt

0262-1

Thank you for your comment.

Refers to Comment placed on Sep 23, 2015

ID: 8393

Date Entered: Sep 23, 2015

Source: Website

Topics:

Organization: North Country Chamber of Commerce

Comment: Please see the attached statement from the North Country Chamber of Commerce

0262-1

Northern Pass EIS Website Comment Receipt

0263-1

Thank you for your comment.

Refers to Comment placed on Sep 24, 2015

ID: 8396

Date Entered: Sep 24, 2015

Source: Website

Topics:

Organization:

Comment: Say no to the northern pass.

0263-1

Northern Pass EIS Website Comment Receipt

0264-1

Thank you for your comment.

Refers to Comment placed on Sep 24, 2015

ID: 8397**Date Entered:** Sep 24, 2015**Source:** Website**Topics:** Purpose and Need**Name:** Abdallah Minkarah**Organization:****Email:** jayom2@msn.com**Mailing Address:** 13 Mt. Pleasant Street**City:** Nashua**State:** NH**Zip:** 03064**Country:** US

Comment: Development of the Northern Pass project is critical to the economic future of New Hampshire and New England in general. The project would provide clean, cost-effective sustainable energy that would help offset the losses we are experiencing due to recent and planned closings of multiple coal, oil and nuclear power plants while helping to reduce our over-reliance on natural gas. The addition of renewable hydro will also help reduce carbon emissions. I am confident that the revised plans have been designed to have as little impact on the landscape as possible.

0264-1

Northern Pass EIS Website Comment Receipt

Refers to Comment placed on Sep 24, 2015

ID: 8398

Date Entered: Sep 24, 2015

Source: Website

Topics:

Organization: just a person

Comment: To Whom it May Concern: The email transmission I received today concerning the Draft EIS could not have been more timely inasmuch as I just returned to my home in Western Massachusetts from the White Mountain National Forest 4 days ago, after enjoying 4 days of hiking the Fraconia and Crawford Notch areas. Quite literally, as I was standing on Mt. Chocorua on Saturday, I turned to a friend who was seeing the National Forest for the first time and reminded him to take a good look because this was one of the last great stands of wilderness in the east. It was really majestic and having travelled extensively to hike all over the United States, Canada, Europe and Africa, I was thinking to myself whether anything I had seen in the Tetons, the Canadian Rockies, or the French/Swiss alps was any prettier. We have an incredible treasure in the Whites, and once tainted, it can never be undone. I would rather live with a dimmer lightbulb, a little less gas in the car, and a cooler house than mess with the Whites or any of the other great wildernesses. At this point, man needs to adjust consumption, and not dig up more pristine areas to fuel our losing battle with consumption. Thank you for listening.

0265-1

Thank you for your comment. Section 2.4 of the EIS discusses alternatives considered but eliminated from further analysis including energy conservation. Under the No Action Alternative, it is assumed that existing energy sources, including alternative energy generation, would continue to supply the ISO-NE region and that energy efficiency measures would continue. Section 4.1.1 of the EIS addresses potential impacts to Visual Resources.

0265-1

Northern Pass EIS Website Comment Receipt

0266-1

Thank you for your comment.

Refers to Comment placed on Sep 25, 2015

ID: 8399**Date Entered:** Sep 25, 2015**Source:** Website**Topics:** Purpose and Need**Name:** Rick Weissbrod**Organization:** Mr.**Title:** Mr.**Email:** rwcw1946@myfairpoint.net**Mailing Address:** 57 Smith Hill Rd**City:** Ashland**State:** NH**Zip:** 03217-4461**Country:** US

Comment: NH has no need for the power transmitted by northern pass it is for distribution in southern new england. The towers would be an eyesore and detrimental to property values and out tourist based economy. Should this project be persued it should be burried for it's entire length.

0266-1

Northern Pass EIS Website Comment Receipt

0267-1

Thank you for your comment.

Refers to Comment placed on Sep 25, 2015

ID: 8400**Date Entered:** Sep 25, 2015**Source:** Website**Topics:** Alternatives**Organization:** MREast condos Thornton NH

Comment: Dear Northern Pass I am a resident of THornton NH and the Northern Pass is planned to go right in front of my home--I was under the impression that the line would be buried in Thornton, this new proposal shows towers will be built !! Please reconsider the Town of Thornton and bury the lines---My personal opinion would be to not build at all and explore SOLAR power THANK YOU

0267-1

Northern Pass EIS Website Comment Receipt

0268-1

Thank you for your comment.

Refers to Comment placed on Sep 25, 2015

ID: 8401

Date Entered: Sep 25, 2015

Source: Website

Topics: Viewshed/Scenery

Name: Paula Murphy

Organization:

Email: fairweather123@charter.net

Mailing Address: PO Box 394

Mailing Address: 55 Woodcrest Lane

City: Twin Mountain

State: NH

Zip: 01452

Country: US

Comment: NO NEW CONSTRUCTION. Utilize existing rights of way and existing power line towers.

0268-1

Northern Pass EIS Website Comment Receipt

0269-1

Thank you for your comment.

Refers to Comment placed on Sep 25, 2015

ID: 8402

Date Entered: Sep 25, 2015

Source: Website

Topics: Cumulative Effects

Organization:

Comment: The Northern Pass would only take away from New Hampshire beauty, and should only be done if can completely be buried. The proposed route would affect my personal real estate in a negative way.

0269-1

Northern Pass Transmission Line Project
U.S. Department of energy

0270-1
Thank you for your comment.

Brian Mills
Senior Planning Advisor
Office of Electricity Delivery and Energy Reliability (OE-20)
U.S. Department of Energy
1000 Independence Ave. SW
Washington, DC 20585
Phone: 202-586-8267

Comment to be delivered to draftEIScomments@northernpasseis.us by October 29th, 2015

Subject: Draft Environmental Impact Statement for the Northern Pass Transmission Line Project

Dear Mr. Mills,

I have reviewed the draft environmental impact statement for the proposed Northern Pass Transmission Line Project and for the most part I am in full support of this project. I believe your purpose of constructing a 1,200 MW low-carbon, non-intermittent power source, which is 98% hydropower, to better enhance the economic and environmental sustainability of the New England region is a reputable and vital decision. New England's increasing dependence on natural gas is unsustainable and infeasible in their climate; this diversification of their energy supply will ultimately lower their ecological footprint.¹ I purpose of this project is an economically and environmentally sustainable solution to enhancing the diversity of the New England regions power supply. I am especially pleased to hear that all action alternatives will have no population-level effects on any protected species, no disproportionately high human health or environmental impacts as well as air quality impacts not exceeding the *de minimus* thresholds.²

My concerns primarily align with the visual impacts imposed upon the New England regions landscape as well as in the White Mountain National Forest, this pristine landscape does not need to be tarnished with a 187 mile long transmission line. The ground disturbance and vegetation removal for the proposed action also concern me, which would disturb 1,217 acres of wildlife habitat and impact 1,093 acres of vegetated habitat.³ In my opinion the proposed action

0270-1

¹ Draft EIS: Northern Pass Transmission Line Project, S.3 Project Objectives

² Draft EIS: Northern Pass Transmission Line Project, S.8 Major Conclusions

³ Draft EIS: Northern Pass Transmission Line Project, S.9.11 Wildlife, S.9.12 Vegetation

as well as Alternatives 3, 5a, 5b, 5c have too significant of impacts on wildlife and vegetation, and visual resources to be implemented. I so however support alternatives 4a, 4b and 4c due to their minimal environmental impacts due to use of an existing disturbed roadway, which would minimize the wild life and vegetation impacts, as well as the mitigation of visual impacts due to the burial of the transmission line next to an existing roadway.⁴ Variations of a alternative 4 may be more costly at \$2.11 billion, as opposed to the proposed action costing \$1.83 billion, but I do believe the mitigation of wildlife and vegetation impacts as well as impacts on visual resources outweigh the increased cost of alternatives 4a, 4b and 4c. The impacts to wildlife habitat for alternative 4 equate to 270 acres and the vegetation impacts equate to 243 acres, this significant reduction in impacts is certainly worth the additional cost, the visual impacts would ultimately be reduced to 0 in alternative 4 as well.⁵

Alternative 4a, 4b and 4c would also present substantially less cumulative impacts as opposed to the proposed alternative, with only a short-term impact on traffic and transportation.⁶ Your statistics and mapping prove you have collected sufficient information on project impacts and for this I thank you. With that said I recommend that the proposed alternative be alternatives 4a, 4b or 4c due to their reduction is significant impacts on wildlife, vegetation and visual resources. Variations of alternative 4 may be more costly but I do believe the major resistance to this project could be negated with the significant reduction in environmental impacts associated with variations in alternative 4.

Thank you for your time,

Avery F. Lajeunesse
1345 Grandview Ave, Boulder CO, 80302

⁴ Draft EIS: Northern Pass Transmission Line Project, S.8 Major Conclusions

⁵ Draft EIS: Northern Pass Transmission Line Project, S.9 Summary of Potential Impacts Associated with the Project Alternatives

⁶ Draft EIS: Northern Pass Transmission Line Project, S.9.15 Cumulative Impacts

0271-1

Thank you for your comment.

From: Ray Cotnoir/Heather Wiley <RCotnoir@ne.rr.com>
Sent: Tuesday, September 22, 2015 5:04 PM
To: draftEIScomments@northernpasseis.us
Subject: Northern Pass Draft EIS Comment

To Whom It May Concern,

I rarely write about issues affecting NH but I feel very moved to let you know of my complete opposition to the new Northern Pass proposal as presented last month. What an affront to the people of the North Country! It's as though the will of those who live in the least populated areas doesn't count. The one economic bright star in our most beautiful part of the state is tourism, and it would be an absolute travesty to have our views and environment ruined by massive towers. I stand firm in my opposition to this project. No! No! No! The lines can be buried. It is not acceptable that Northern Pass stands to make a huge ongoing profit on the backs of the New Hampshire residents.

Heather Wiley
Randolph, NH

0271-1

From: Joanne Gutt <jhgutt@gmail.com>
Sent: Tuesday, September 22, 2015 12:08 PM
To: jpbouley@comcast.net; dansthilaire@comcast.net; Christybartlett@gmail.com; timothy.drew@des.nh.gov; drafteiscomments@northernpasseis.us
Subject: Northern Pass-Bury the lines

I am writing you to emphasize that my concern, and the concern of many of us here in Concord, is that the Northern Pass transmission lines be buried in Concord.

According to Bill Quinlan, President of Eversource Energy, he has not "heard a lot of statewide or stakeholder expression on wanting the Northern Pass transmission lines buried." On the contrary, at the recent Public Input meeting, burying the lines was the most commonly expressed concern. It most certainly is of great concern to those of us in East Concord whose property values will be affected.

The lines will not benefit me in terms of improved energy costs or in reducing my reliance on fossil fuels. It will reduce my property value here on Irving Drive and damage the unspoiled views. The unburied lines will only put more money into the pockets of Eversource and it's investors.

As public officials, it is your duty to respond and act upon your constituent's concerns and I hope to hear back from you on what you are doing to mandate that the lines be buried in our area.

Thank you for your attention to this important issue.

Joanne Gutt
 37 Irving Dr.
 Concord, NH
 491-0199

0272-1

Thank you for your comment. The EIS analyzes several full-burial alternatives in detail (Alternatives 3, 4a, 4b, and 4c), which include burial through Concord, NH. The potential environmental impacts of all twelve alternatives, as well as technical constraints and costs, are discussed throughout the EIS.

0272-1

Section 4.1.2 of the EIS addresses the anticipated impacts of the Project on adjacent properties, property values, and current/future tax assessments/payments. An exhaustive literature evaluation was undertaken to identify peer-reviewed studies which specifically assessed the potential impact of transmissions lines on adjacent real estate values. This information is presented in the Socioeconomic Technical Resource Report for the final EIS and in the EIS (Section 4.1.2). As a result of comments on the methodology and assumptions provided on the draft EIS, adjustments to the original analysis have now been updated in the final EIS. As these details are far too complex to be summarized within this response, the commenter is referred to both the Socioeconomic Technical Resource Report for the final EIS, and Section 4.1.2 of the final EIS.

Northern Pass EIS Website Comment Receipt

0273-1

Thank you for your comment.

Refers to Comment placed on Sep 25, 2015

ID: 8407**Date Entered:** Sep 25, 2015**Source:** Website**Topics:** Tourism**Name:** Bill Sparklin**Organization:** Notch View Inn and Campground**Title:** Owner**Email:** wsparklin@live.com**Mailing Address:** 54 Forbes Hill RD**City:** Colebrook**State:** NH**Zip:** 03576**Country:** US

Comment: I own and operate a campground and Inn in Northern NH, Colebrook. I invite you up to see the beauty and landscape that bring visitors from across the us and the world. They stay here, camp here picnic here, in awe of the vast beauty of North country and the northern part of the white mountains. They spend hard earned money in NH and in our county and towns to see this magnificent landscape in search of the infamous Moose or the bald eagle, just to get a quick glimpse or snapshot to take home again to promote our beauty.

These people don't come here to see towers with flashing red lights. They will not be impressed with power lines scouring the mountain tops. We don't need steel cranes taking the place of our foliage in fall snowmobile trails in winter or ATV trails in summer. They come here to spend money to get away from the city lights the towering buildings. If these erector sets line our landscape they will go elsewhere to seek the beauty . They will spend their money somewhere else. And we in North country will have nothing, our economy will die, there will be less jobs, less income and less prosperity. We too will need to leave only to leave steel obstructions in our wake.

STOP THE TOWERS STOP THE GREED STOP Northern Pass

0273-1

Northern Pass EIS Website Comment Receipt

0274-1

Thank you for your comment.

Refers to Comment placed on Sep 25, 2015

ID: 8408

Date Entered: Sep 25, 2015

Source: Website

Topics: Purpose and Need, Health and Safety

Organization:

Comment: I have never agreed nor will I with the northern pass. Money and greed are ostensibly at the core of this project.

If this was not the case , why is it then necessary to deceive the good people of our state.

I am not aware of any class action or other lawsuits currently or subsequently being filed,if so why not?

0274-1

Northern Pass EIS Website Comment Receipt

0275-1

Thank you for your comment.

Refers to Comment placed on Sep 25, 2015

ID: 8409**Date Entered:** Sep 25, 2015**Source:** Website**Topics:** Purpose and Need, Alternatives, Wildlife, Viewshed/Scenery, Recreation, Private Property/Land Use, Historic/Cultural, Tourism, Quality of Life**Name:** Fred DeCicco**Organization:****Email:** Frednh92051@gmail.com**Mailing Address:** 28 Terrace Rd**City:** Thornton**State:** NH**Zip:** 03285**Country:** US

Comment: NH environment is why we live here, why tourists visit. These towers will be a blight to the environment, wherever they are located. Burying a 60 mile stretch, through the WMNF, is not enough. The entire route must be buried.

0275-1

Northern Pass EIS Website Comment Receipt

Refers to Comment placed on Sep 25, 2015

ID: 8410

Date Entered: Sep 25, 2015

Source: Website

Topics: Cumulative Effects

Name: Matthew Perrone

Organization:

Email: mperrone@datalitho.com

Mailing Address: 106 Mountain Road

City: Deerfield

State: NH

Country: US

Comment: In 1960's the current existing power lines which are going to be used by Northern Pass took 10 acres of my land by eminent domain. Since that time the value of my land has dropped considerably. The land loss caused flooding on my property and caused me to have two separate tax bills for the land on each side of the power lines. I believe the current lines are unsafe and during rain electricity waves flow down with a cracking sound and rainbow like glow. I will not walk under them in rain conditions. The property is at the base of the Pawtuckaway State Park in Deerfield and detract from the natural beauty of the area. Please stop this from going through. I

0276-1

Thank you for your comment. Information regarding shocks has been clarified in Section 4.1.4.2 in the final EIS. The analysis considers the potential impacts under all weather conditions.

0276-1

Northern Pass EIS Website Comment Receipt

0277-1

Thank you for your comment.

Refers to Comment placed on Sep 25, 2015

ID: 8411**Date Entered:** Sep 25, 2015**Source:** Website**Topics:** Quality of Life**Name:** Amy Delventhal**Organization:****Email:** amy_whitefeather@yahoo.com**Mailing Address:** 65 Lewis Hill**City:** Bethlehem**State:** NH**Zip:** 03574**Country:** US

Comment: The Northern Pass, especially above ground, is a terrible travesty to even consider allowing through NH. I've selected "quality of life" as my topic because the many ramifications-- devalued property, decline in tourism which would equal loss of jobs, devastation to the beautiful forests, and etc. all will negatively effect the quality of life for those of us who live and try to eke out a living here. This must not be allowed to happen. The results will be devastating.

0277-1

Northern Pass EIS Website Comment Receipt

0278-1

Thank you for your comment.

Refers to Comment placed on Sep 26, 2015

ID: 8412

Date Entered: Sep 26, 2015

Source: Website

Topics:

Organization:

Comment: Put the Whole Route Underground. Northern Pass is BAD for New Hampshire. If other States can require transmissions lines be underground, so can New Hampshire!

0278-1

Northern Pass EIS Website Comment Receipt

0279-1

Thank you for your comment.

Refers to Comment placed on Sep 26, 2015

ID: 8413**Date Entered:** Sep 26, 2015**Source:** Website**Topics:** Purpose and Need, Health and Safety, Water / Wetlands, Private Property/Land Use, Quality of Life, Environmental Justice**Name:** Pamela Frizzell**Organization:****Email:** tubby1926@gmail.com**Mailing Address:** 83 Colby Street**City:** Colebrook**State:** NH**Zip:** 03576**Country:** US

Comment: USA should consider sources within our borders for power; not continuing to rely on a foreign country. Periodically, Quebec considers seceding from the rest of Canada; what would that do to the power from Northern Quebec?
During the ice storm of 98, the power lines around the Montreal area were down for weeks. The flooding of the lands releases toxins in the air, that go world wide with the winds.

0279-1

Northern Pass EIS Website Comment Receipt

0280-1

Thank you for your comment.

Refers to Comment placed on Sep 26, 2015

ID: 8414**Date Entered:** Sep 26, 2015**Source:** Website**Topics:** Purpose and Need**Organization:**

Comment: we are sick and tired of our open space being used by profiteers to chew it up for their profit making sceheme. it is clear that private land should be paid for to damage. the public is sick and tired of its open space which is for wildlife and birds nad trees and vegetation to flourish is dmaaged by these endless attempts by profifers to use and damage them for hteir profiteering. how can it say it strongly enough. we are sick of it. it has gone on for I00 years. it needs to stop now. we cant tolerate it any longer. our opern space is being chewe dup to destruction.

0280-1

Northern Pass EIS Website Comment Receipt

0281-1

Thank you for your comment.

Refers to Comment placed on Sep 26, 2015

ID: 8415**Date Entered:** Sep 26, 2015**Source:** Website**Topics:** Purpose and Need**Organization:**

Comment: we are sick and tired of our open space being used by profiteers to chew it up for their profit making sceheme. it is clear that private land should be paid for to damage. the public is sick and tired of its open space which is for wildlife and birds nad trees and vegetation to flourish is dmaaged by these endless attempts by profifers to use and damage them for hteir profiteering. how can it say it strongly enough. we are sick of it. it has gone on for I00 years. it needs to stop now. we cant tolerate it any longer. our opern space is being chewe dup to destruction.

0281-1

Northern Pass EIS Website Comment Receipt

0282-1

Thank you for your comment.

Refers to Comment placed on Sep 26, 2015

ID: 8416**Date Entered:** Sep 26, 2015**Source:** Website**Topics:** Purpose and Need, Alternatives, Vegetation, Wildlife, Viewshed/Scenery, Recreation, Private Property/Land Use, Tourism**Name:** Howard Mitz**Organization:****Email:** hmitzdo@aol.com**Mailing Address:** 1570 Rte 117**City:** Sugar Hill**State:** NH**Zip:** 03586**Country:** US**Comment:** My comment may go under several of the above topics.

It is not clear that Northern pass is needed. It is certainly not going to help those in New Hampshire . It will affect property values, impact our way of life decrease tourism and generally have a negative impact wherever the line is not buried. The DOE estimated that it will cost an additional 1 billion dollars to bury the whole transmission line. Why should the residents of NH underwrite this commercial enterprise when we will get no benefit and will likely be harmed. Either bury the whole line or bury the project
thank you for allowing me to comment

0282-1

Northern Pass EIS Website Comment Receipt

Refers to Comment placed on Sep 27, 2015

ID: 8417

Date Entered: Sep 27, 2015

Source: Website

Topics: Purpose and Need, Vegetation, Wildlife, Viewshed/Scenery, Water / Wetlands, Recreation, Economic, Tourism, Quality of Life

Name: Bill Schaffer

Organization:

Email: billschaffer50@hotmail.com

Mailing Address: 34 Irving Drive

City: Concord

State: NH

Zip: 03301

Country: US

Comment: I realize is there very little chance of stopping the Northern Pass, but I feel very strongly that it should be buried throughout New Hampshire, especially the Capital of Concord. We just spent 10 plus million dollars renovating and updating the Downtown area to attract visitors and new business. Do you think anyone will be impressed if they look up and see these eye sore towers from Main Street? I have lived in Oak Knoll Estates for 25 years and are certainly aware of the lines that run behind our neighborhood and thru Turtle Pond. To increase the size of the poles and the amount of current would ruin the beautiful country that we enjoy in Concord. I can just imagine driving north on 93 seeing these towers 50 ft above the tree line. Not impressive to me. Also, this is bound to decrease property values for all of East Concord as well. I know I would not buy a house in an area with these lines. I'm sure if you listen closely you will here the Buzz as well, that won't be the birds humming. Everything about this project is a negative to our community so I implore you to insist that Eversource bury these lines. Eversource doesn't care about the impact to the environment, the people they affect, or the future of our community, just the profits earned from these lines. Other states have buried the lines, New Hampshire can too.

Thank you for reading this,

Bill Schaffer

0283-1

Thank you for your comment. The EIS analyzes several full-burial alternatives in detail (Alternatives 3, 4a, 4b, and 4c), which include burial through Concord, NH. The potential environmental impacts of all twelve alternatives, as well as technical constraints and costs, are discussed throughout the EIS.

Visual impacts in Concord are discussed in the EIS (Section 4.4.1). Potential visual impacts in urban areas were overstated in the draft EIS. Because the Concord area is urban, there was no estimation of screening from land cover which leads to an overstatement of visibility in the developed areas of Concord. The analysis has been updated for the final EIS to include additional data reflecting the height of land cover in Concord which better represents the visibility of the Project.

Noise impacts from aboveground portions of the Project are described in Section 4.1.7 of the EIS, and in Section 3.2.2.5 of the Noise Technical Report. The audible noise due to the corona effect would not exceed the EPA guidance level of 55 dBA for outdoor areas beyond the transmission route.

Section 4.1.2 of the EIS addresses the anticipated impacts of the Project on adjacent properties, property values, and current/future tax assessments/payments. An exhaustive literature evaluation was undertaken to identify peer-reviewed studies which specifically assessed the potential impact of transmissions lines on adjacent real estate values. This information is presented in the Socioeconomic Technical Resource Report for the final EIS and in the EIS (Section 4.1.2). As a result of comments on the methodology and assumptions provided on the draft EIS, adjustments to the original analysis have now been updated in the final EIS. As these details are far too complex to be summarized within this response, the commenter is referred to both the Socioeconomic Technical Resource Report for the final EIS, and Section 4.1.2 of the final EIS.

0283-1

34 Irving Drive
Concord, NH 03301

0283

Northern Pass EIS Website Comment Receipt

Refers to Comment placed on Sep 28, 2015

ID: 8418

Date Entered: Sep 28, 2015

Source: Website

Topics: Purpose and Need, Alternatives, Wildlife, Viewshed/Scenery, Recreation, Economic, Tourism, Quality of Life, Air Quality, Cumulative Effects, Noise, Forest Service Lands, NEPA Process, Design Criteria / Mitigation Measures, Environmental Justice, Other

Organization:

Comment: The northern pass should be buried underground, or cancelled entirely. The state of New Hampshire is beautiful - let's not let short-term energy demands destroy that, we should be focused on truly green & renewable energy, not this deceitful, dangerous project. This project endangers tourism, wildlife, and and recreation. It provides only temporary jobs, and who knows how many of those will even be for local residents.

The marketing for this project is deceptive at best. Advertising Hydro-Quebec energy as "clean, affordable" tries to imply that it is a green/renewable energy source, which it is not. We should be focused on renewables with much clearer benefits.

I'm deeply concerned about both the impact to the WMNF (you can't build underground cables without destroying what's above them, first) as well as the impact to the beautiful northern portion of our state, which I suspect has received a lot less scrutiny than the rest of the project.

0284-1

Thank you for your comment. The EIS analyzes several full-burial alternatives in detail (Alternatives 3, 4a, 4b, and 4c). Additionally, seventeen alternatives were considered but eliminated from further detailed analysis, including alternative energy generation. Potential impacts to tourism and employment, wildlife, recreation, the WMNF, and the northern part of NH are addressed in the EIS (Sections 4.1.2, 4.1.11, 4.1.3, 4.5, and 4.2 respectively).

0284-1

Northern Pass EIS Website Comment Receipt

0285-1

Thank you for your comment.

Refers to Comment placed on Sep 29, 2015

ID: 8419**Date Entered:** Sep 29, 2015**Source:** Website**Topics:** Viewshed/Scenery**Organization:**

Comment: I was born and raised in NH, and I have lived in New England my whole life. The White Mountains are very important to me. I have hiked in the White Mountains several times a year for the past 26 years. When my children were young we hiked the 48 4000 footers in NH. My son, who is now an adult, and I just completed them a 2nd time this past summer. I have a three year old granddaughter and I would like her to be able to hike in the White Mountains and experience them as I have and as her mother did. I consider the White Mountains to be one of the most valuable resources we have in New England. In a densely populated area like New England, I believe it is absolutely critical that we protect them as wilderness in perpetuity. I encourage you to require Northern Pass LLC to bury the electrical line for the full length.

0285-1

Northern Pass EIS Website Comment Receipt

0286-1

Thank you for your comment.

Refers to Comment placed on Oct 1, 2015

ID: 8420**Date Entered:** Oct 1, 2015**Source:** Website**Topics:** Purpose and Need, Alternatives, Wildlife, Viewshed/Scenery, Water / Wetlands, Soils, Recreation, Private Property/Land Use, Economic, Design Criteria / Mitigation Measures**Organization:** lifelong resident-nativeNH

Comment: The Northern pass project popped out the blue with no real warning. The people of NH were duped to its necessity as most of the power is going to other places and not NH. We have been lied to for years about cheap power that has never evolved. Now they want to ruin the north country scenery with commercial greed. Bury the line, you won't make as much profit but still you will make a profit. All the jobs and monies disappear after construction ends just like Sea Brook, Vermont Yankee and other plants. They bring mostly outside help and throw a few crumbs to the local economy and puff they are gone. We have wind towers in the north country that run at 1/2 power because there is no place to put all the energy now. This new line is going out of state so let them have their line on their land not ours!

0286-1

0287-1

Thank you for your comment.

From: N&R <spanky@myfairpoint.net>
Sent: Thursday, September 24, 2015 9:02 PM
To: info@northernpasseis.us
Subject: Re: DOE Northern Pass Transmission Line Project Draft EIS Notice of Intent

Why not ofer Cell Phone access to where NP well be covering...

| 0287-1

Nancy

----- Original Message -----

From: [Northern Pass EIS](#)
To: spanky@myfairpoint.net
Sent: Thursday, September 24, 2015 2:36 PM
Subject: DOE Northern Pass Transmission Line Project Draft EIS Notice of Intent



**U.S. Department of Energy
The Northern Pass Transmission Line Project
Draft Environmental Impact Statement**

Notice of Intent to Prepare a Supplement to the Draft Northern Pass Transmission Line Project Environmental Impact Statement (EIS) (DOE/EIS-0463) and announcing the extension of the public comment period on the Draft EIS and announcement of Postponement of Public Hearings to receive comments on the Draft EIS

The U.S. Department of Energy (DOE) has prepared a Draft EIS pursuant to the National Environmental Policy Act (NEPA) of 1969 as amended (42 U.S.C. 4321 *et seq.*), the Council on Environmental Quality (CEQ) NEPA regulations (40 CFR §§1500-1508), and the DOE NEPA implementing procedures (10 CFR §1021).

The U.S. Forest Service – White Mountain National Forest (USFS), the U.S. Army Corps of Engineers – New England District (USACE), the U.S. Environmental Protection Agency – Region 1 (EPA), and the New Hampshire Office of Energy and Planning (NHOEP) are cooperating agencies in the preparation of the EIS.

The Draft EIS addresses potential environmental impacts of the proposed action, the no action alternative, and the range of reasonable alternatives.

On August 31, 2015, the DOE received an amendment to the July 31, 2013, Presidential permit application for the Northern Pass Transmission Line Project proposed by Northern Pass, LLC which made changes to the proposed project.

The application amendment changed the proposed route by three miles, added two new connection pads of approximately one acre each and increased the amount of proposed buried transmission line from eight miles to sixty.

The Supplement to the Draft EIS will present an analysis of this new “Applicants Preferred Alternative.” This analysis will compare the new proposed route and configuration (above ground/underground) against the alternatives currently presented in the Draft EIS.

DOE invites public and agency comment on the Supplement to the Draft EIS and the Draft EIS. The Draft EIS is available online at <http://www.northernpasseis.us/>. The Supplement to the Draft EIS will be posted on the EIS website and distributed to the mailing list when completed.

The current public comment period to receive comments on the Draft EIS is extended to close December 31, 2015.

The public hearings scheduled for Tuesday October 6 in Concord, Wednesday October 7 in Whitefield and Thursday October 8 in Holderness are cancelled.

Public hearings to receive oral comments on the Draft EIS and the Supplement to the Draft EIS will be held prior to the close of the public comment period. Dates, times and locations of the public hearings will be announced.

www.northempasseis.us

Share this email:



[Manage](#) your preferences | [Opt out](#) using TrueRemove™
Got this as a forward? [Sign up](#) to receive our future emails.
View this email [online](#).

Northern Pass Transmission Line Project
P.O. Box 2729
Frisco, CO 80443-9901

This email was sent to spanky@myfairpoint.net.
To continue receiving our emails, add us to your address book.

From: Bill <billschaffer50@hotmail.com>
Sent: Sunday, September 27, 2015 11:05 AM
To: drafteiscomments@northernpasseis.us

Mr. Mills,

I realize is there very little chance of stopping the Northern Pass, but I feel very strongly that it should be buried throughout New Hampshire, especially the Capital of Concord. We just spent 10 plus million dollars renovating and updating the Downtown area to attract visitors and new business. Do you think anyone will be impressed if they look up and see these eye sore towers from Main Street? I have lived in Oak Knoll Estates for 25 years and are certainly aware of the lines that run behind our neighborhood and thru Turtle Pond. To increase the size of the poles and the amount of current would ruin the beautiful country that we enjoy in Concord. I can just imagine driving north on 93 seeing these towers 50 ft above the tree line. Not impressive to me. Also, this is bound to decrease property values for all of East Concord as well. I know I would not buy a house in an area with these lines. I'm sure if you listen closely you will here the Buzz as well, that won't be the birds humming. Everything about this project is a negative to our community so I implore you to insist that Eversource bury these lines. Eversource doesn't care about the impact to the environment, the people they affect, or the future of our community, just the profits earned from these lines. Other states have buried the lines, New Hampshire can too.

Thank you for reading this,

Bill Schaffer
 34 Irving Drive
 Concord, NH 03301

0288-1

Thank you for your comment. The EIS analyzes several full-burial alternatives in detail (Alternatives 3, 4a, 4b, and 4c), which include burial through Concord, NH. The potential environmental impacts of all twelve alternatives, as well as technical constraints and costs, are discussed throughout the EIS.

Visual impacts in Concord are discussed in the EIS (Section 4.4.1). Potential visual impacts in urban areas were overstated in the draft EIS. Because the Concord area is urban, there was no estimation of screening from land cover which leads to an overstatement of visibility in the developed areas of Concord. The analysis has been updated for the final EIS to include additional data reflecting the height of land cover in Concord which better represents the visibility of the Project.

Noise impacts from aboveground portions of the Project are described in Section 4.1.7 of the EIS, and in Section 3.2.2.5 of the Noise Technical Report. The audible noise due to the corona effect would not exceed the EPA guidance level of 55 dBA for outdoor areas beyond the transmission route.

Section 4.1.2 of the EIS addresses the anticipated impacts of the Project on adjacent properties, property values, and current/future tax assessments/payments. An exhaustive literature evaluation was undertaken to identify peer-reviewed studies which specifically assessed the potential impact of transmissions lines on adjacent real estate values. This information is presented in the Socioeconomic Technical Resource Report for the final EIS and in the EIS (Section 4.1.2). As a result of comments on the methodology and assumptions provided on the draft EIS, adjustments to the original analysis have now been updated in the final EIS. As these details are far too complex to be summarized within this response, the commenter is referred to both the Socioeconomic Technical Resource Report for the final EIS, and Section 4.1.2 of the final EIS.

0289-1
Thank you for your comment.

From: Bill Irving <wai77@comcast.net>
Sent: Wednesday, September 30, 2015 6:36 PM
To: draftEIScomments@northernpasseis.us
Subject: Northern Pass Draft EIS

Gentlepersons,
With regards to the Northern Pass project, I am opposed to the project as currently constituted. However, I would support the project IF the entire transmission line were to be buried.

Thank you for your consideration.

William A. Irving
77 Rollins Rd.,
Rollinsford, NH 03869

0289-1

Northern Pass EIS Website Comment Receipt

0290-1
Thank you for your comment.

Refers to Comment placed on Oct 8, 2015

ID: 8427

Date Entered: Oct 8, 2015

Source: Website

Topics:

Organization:

Country: US

Comment:

| 0290-1

Northern Pass EIS Website Comment Receipt

0291-1

Thank you for your comment.

Refers to Comment placed on Oct 9, 2015

ID: 8428

Date Entered: Oct 9, 2015

Source: Website

Topics: Purpose and Need

Name: robert shea

Organization:

Title: electrician

Email: papashea

Mailing Address: 38 peaslee road

City: orange

State: NH

Country: US

Comment: we need the good paying jobs

| 0291-1

Northern Pass EIS Website Comment Receipt

0292-1

Thank you for your comment.

Refers to Comment placed on Oct 9, 2015

ID: 8430

Date Entered: Oct 9, 2015

Source: Website

Topics: Alternatives, Health and Safety, Vegetation, Wildlife, Viewshed/Scenery, Water / Wetlands

Name: Jacqueline Brissette

Organization:

Email: wackyjb@yahoo.com

Mailing Address: 42 Grandview Road

City: Bow

State: NH

Country: US

Comment: I say no to Northern Pass. I Have lived in New Hampshire all my life and enjoy the outdoor activity's every where in thisstate and don't want the scenic views ruined by power lines. They need to bury the whole thing.

0292-1

Northern Pass EIS Website Comment Receipt

0293-1

Thank you for your comment.

Refers to Comment placed on Oct 10, 2015

ID: 8431

Date Entered: Oct 10, 2015

Source: Website

Topics: Alternatives, Health and Safety, Vegetation

Organization:

Comment: I am writing to strongly oppose the burial of the Northern Pass high power lines through the residential corridor of Rt. 116 in Franconia and Easton. It is an outrage that Eversource would consider using this route as an option, given the values of the homes in the area (250K to 1.5M) will be seriously impacted; and the pristine valley that is Rt. 116, most certainly God's country, would never be the same again for resident or tourist (i.e. Franconia Inn, Glider Airport, Cross Country Ski Trails, Historic grave sites, etc.) . Burying the lines along the originally proposed route in the forest in existing Eversource rights of way is the healthiest alternative. This is NOT A RESIDENTIAL PROJECT!!! It's impact on the residential infrastructure of this community will be extremely costly. Please do not make this egregious error. THIS IS AN INDUSTRIAL PROJECT THAT BELONGS IN AN INDUSTRIAL CORRIDOR!!!

0293-1

MG Bryan R. Kelly, Ph.D.
1421 Easton Road, Rt. 116
Franconia, NH 03580
774-994-2579

Northern Pass EIS Website Comment Receipt

0294-1

Thank you for your comment.

Refers to Comment placed on Oct 13, 2015

ID: 8433**Date Entered:** Oct 13, 2015**Source:** Website**Topics:** Recreation, Tourism**Name:** Eliza Hazen**Organization:** Appalachian Mountain Club member, employee**Title:** Hut Crew**Email:** eliza.hazen@umontana.edu**Mailing Address:** 1420 Jackson Street**City:** Missoula**State:** MT**Zip:** 59802**Country:** US

Comment: I urge the agency as well as the applicant to consider the alternatives- specifically alternative 1 as well as all others that include underground wires. The White Mountain National Forest and surrounding mountains and trails are far from pristine however they are precious. They are uniquely located in an accessible position to much of the New England and Quebec population. This is a trans-international boundary recreational resource that needs to be respected. Power lines dangling overhead of the thousands of hikers that use this area every year would significantly reduce the enjoyment of the area. Consider the summit of South Kinsman, 7 miles from the road, you hear nothing. Nothing but the protected lands around you. There is also a view of Franconia Ridge offered, which was just rated one of the top 20 hikes in the world by National Geographic. Power lines overhead would dilute this experience. As Section 102 of the National Environmental Policy Act describes "unquantified environmental amenities and values may be given appropriate consideration in decision making". The view afforded atop any of the mountains in the White Mountain National Forest is an environmental amenity that must be considered. This is where families connect away from the busy worlds of work, school and superficial technology. This is where families say goodbye to loved ones lost who cherished the Whites and chose this as the final resting place for their memories. This is where children find their hiking legs and become to next generation of employees, skiers, hikers and stewards of the White Mountains. While New England does need uninterrupted

0294-1

power, consider providing this power with out interrupting the views and experiences of my childhood, the memories of my young adulthood and the future of my own children.

This area draws thousands for overnight trips. This provides vital funds to protect, as well as employ, the area's residents. Over head power lines could deplete the number of tourists visiting the area negatively affecting the northern New Hampshire intensely seasonal economy.

Section 101 of the National Environmental Policy Act describes that the policy of the Federal government is "to create and maintain conditions under which man and nature can exist in productive harmony". This is lofty- but now is the time to act.

Consider the alternatives is the DEIS for the Northern Pass- consider that overhead power lines will detract from the White Mountain National Forest . Consider there are other options to maintain this productive harmony.

0294-1
Continued

0294-1 cont'd

Northern Pass EIS Website Comment Receipt

0295-1

Thank you for your comment.

Refers to Comment placed on Oct 14, 2015

ID: 8434

Date Entered: Oct 14, 2015

Source: Website

Topics: Viewshed/Scenery, Recreation, Historic/Cultural

Organization: Human

Comment: Please NO! Have you ever driven to Montreal and seen what those gigantic towers look like next to the highway. Owning 2 homes in NH I cant imagine anything like that in our beautiful state and country.

Thank you
John Keane
NH, USA

0295-1

Northern Pass EIS Website Comment Receipt

0296-1

Thank you for your comment.

Refers to Comment placed on Oct 15, 2015

ID: 8437**Date Entered:** Oct 15, 2015**Source:** Website**Topics:** Alternatives, Viewshed/Scenery**Name:** nick jenkins**Organization:** Sunny Acres Farm of Peaked Hill**Title:** Farmer**Email:** 009ntj@gmail.com**Mailing Address:** 75 Old Stage Rd**City:** Bristol**State:** NH**Country:** US

Comment: This goes thru my front yard. Your not putting the the old(lower) wires onto the new poles so the would be more poles and more wires from lower to higher right thru the front yard plus more buzzing noises. Bury all of the northern pass or don't do it at all. New Hampshire Land Of Scenic Splendor or is that to be no more???!!!!!! Nick Jenkins + Mary Worthen 75 Old Stage Rd, Bristol, NH 03222

0296-1

Northern Pass EIS Website Comment Receipt

0297-1

Thank you for your comment.

Refers to Comment placed on Oct 15, 2015

ID: 8439**Date Entered:** Oct 15, 2015**Source:** Website**Topics:** Quality of Life**Name:** Jason Balint**Organization:****Email:** jbalint18@yahoo.com**Mailing Address:** 721 Diamond Pond Road**City:** Colebrook**State:** NH**Country:** US

Comment: My familiy recently built a camp off Diamond Pond Road in Colebrook one half mile from where these towers could appear that will severely devalue the property of our land. We beg that either this project gets burried entirely or does not happen. Eversourse and HydroQuebec have made it very clear that their agenda is about the generation of cash with no regard to the impact of NH landowners. Seems odd that they are trying so hard to go east towards the Wagner property (more wind farms?) before the proposed route goes south.

0297-1

Northern Pass EIS Website Comment Receipt

0298-1

Thank you for your comment.

Refers to Comment placed on Oct 19, 2015

ID: 8441

Date Entered: Oct 19, 2015

Source: Website

Topics: Viewshed/Scenery

Organization: Portsmouth Public Schools

Comment: I will not endorse an energy project that 1) has little proven economic value to NH residents, 2) is not a locally NH source of clean energy, 3) affect the very character and identity of the iconic, mountainous scenic imagery of NH, or 4) would decrease property values and tourism income to the state. The project is a land grab so that a foreign energy company can expand profits at the very expense of NH citizens that are overwhelmingly against the Northern Pass electrical transmission proposal.

0298-1

Northern Pass EIS Website Comment Receipt

0299-1

Thank you for your comment.

Refers to Comment placed on Oct 20, 2015

ID: 8446**Date Entered:** Oct 20, 2015**Source:** Website**Topics:****Name:** Sally Davis**Organization:****Email:** sally.davis36@gmail.com**Mailing Address:** PO Box 1413**City:** Campton**State:** NH**Country:** US

Comment: I believe the expanded concept of burying more of the lines is a small step of progress only proposed to try to defeat the massive opposition to the proposal to bring electricity to New England via NH forests.

Flooding forests to produce hydro power creates massive methane releases which EPA claims to contribute to climate change so supporting this source is contradictory. This does not help your arguments re methane which I support and which needs to be expanded to releases from landfills across the nation.

Solar and wind need to be primary sources of power and any others sources just delay their development.

0299-1

Northern Pass EIS Website Comment Receipt

0301-1

Thank you for your comment.

Refers to Comment placed on Oct 23, 2015

ID: 8448

Date Entered: Oct 23, 2015

Source: Website

Topics: Viewshed/Scenery

Organization:

Comment: I would like to go on record as a person who does not support Northern Pass and remind those who are reviewing this to think about the ratio of those who do not approve vs. those who do in our state. If our "live free or die" NH motto is true, we the people should be in control of this not some power company that is bound and determined to erect something that our people just do not want here.

This is the time to stand up against this project and stand with NH citizens instead of the power company.

NH is BETTER than this, isn't it?

0301-1

Northern Pass EIS Website Comment Receipt

0302-1

Thank you for your comment.

Refers to Comment placed on Oct 23, 2015

ID: 8449

Date Entered: Oct 23, 2015

Source: Website

Topics: Viewshed/Scenery

Name: Dale Feid

Organization: Retired teacher

Email: dalefeid@gmail.com

Mailing Address: 578 limekiln road

City: Pike

State: NH

Zip: 03780

Country: US

Comment: Please, please make Northern pass bury the entire length of the line through NH. If even one NH resident, taxpayer is injured due to decline property value, or aesthetic view it should not go forward without being buried. Thank you, Dale Feid

0302-1

Northern Pass EIS Website Comment Receipt

0303-1

Thank you for your comment.

Refers to Comment placed on Oct 23, 2015

ID: 8450

Date Entered: Oct 23, 2015

Source: Website

Topics: Viewshed/Scenery

Name: Dale Feid

Organization: Retired teacher

Email: dalefeid@gmail.com

Mailing Address: 578 limekiln road

City: Pike

State: NH

Zip: 03780

Country: US

Comment: Please, please make Northern pass bury the entire length of the line through NH. If even one NH resident, taxpayer is injured due to decline property value, or aesthetic view it should not go forward without being buried. Thank you, Dale Feid

0303-1

From: [Mills, Brian](#)
To: [Travis Beck](#)
Subject: FW: Northern Pass--City of Concord, NH Recommendation
Date: Wednesday, October 21, 2015 9:58:09 AM
Attachments: [Report to Council 10-2015.pdf](#)
[Concord Ltr re Northern Pass 10-21-15.pdf](#)

comments

-----Original Message-----

From: Baia, Carlos [<mailto:CBaia@ConcordNH.gov>]
 Sent: Wednesday, October 21, 2015 10:32 AM
 To: Mills, Brian <Brian.Mills@hq.doe.gov>
 Subject: Northern Pass--City of Concord, NH Recommendation

Good Morning Mr. Mills:

Attached please find a letter from the City of Concord, NH regarding recent City Council action on the Northern Pass project. Also included is a report to Council cited in the letter.

As you know, the City of Concord is an intervener in Northern Pass' Presidential Permit.

Please add the enclosed to the Northern Pass draft EIS public comment record and elsewhere as you deem appropriate.

If you have any questions, my contact information is below.

Thank you,

Carlos P. Baia
 Deputy City Manager-Development
 City of Concord
 41 Green Street
 Concord, NH 03301
 (603) 225-8595-Phone
 (603) 228-2701-FAX

0304-1

Thank you for your comment and for the attached report. The EIS analyzes several full-burial alternatives in detail (Alternatives 3, 4a, 4b, and 4c), which include burial through Concord, NH. The potential environmental impacts of all twelve alternatives, as well as technical constraints and costs, are discussed throughout the EIS.

0304-1



CITY OF CONCORD
 NEW HAMPSHIRE
Community Development Department
 Administration

City Hall • 41 Green Street • Concord, NH 03301 • tel. 603/225-8595 • fax 603/228-2701

Carlos P. Baía
 Deputy City Manager
 Development

October 21, 2015

Brian Mills
 Senior Planning Advisor Office of Electricity Delivery and Energy Reliability (OE-20)
 U.S. Department of Energy
 1000 Independence Ave. SW
 Washington, DC 20585

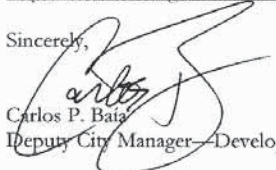
Dear Mr. Mills:

The City of Concord, NH is an intervener in the Presidential permit process for the Northern Pass hydroelectric transmission line project. In February of this year, the Concord City Council appointed a four-person sub-committee of Councilors to review the potential impacts from the Northern Pass project on our community. Concord is the most densely populated area through which Northern Pass will travel. Six meetings of that committee were held with over 50 instances of public testimony. In light of the current public comment period on the draft Environmental Impact Statement for this project, the sub-committee recently provided an interim report to the Concord City Council with several recommendations concerning Northern Pass. The City Council unanimously accepted that report (the document is attached).

The City Council is recommending that, based on the information provided to date, Northern Pass seek to bury the entirety of its proposed 8-mile route through Concord. Although Northern Pass officials attended every meeting of the committee and were responsive, the committee felt that the company had not comprehensively vetted the possibility of line burial in Concord as it may have done in the North Country. This was particularly salient after the Northern Pass project released its "Forward NH Plan" in August 2015 which proposed the additional burial of 52 miles of its line in the White Mountain National Forest within public road right-of-way. The sub-committee recognized that there could be challenges related to burying the line in certain areas of our community but concluded that Northern Pass should thoroughly investigate this alternative, be it along their existing right-of-way, or in public road right-of-way. The sub-committee remains empaneled to hear what Northern Pass finds related to that examination.

Should you have any questions, please contact me at cbaia@concordnh.gov or via telephone at (603) 225-8595. All of the public documents related to the committee's work can be found at <http://concordnh.gov/index.aspx?nid=1381>.

Sincerely,



Carlos P. Baía
 Deputy City Manager—Development

cc: Thomas J. Aspell, Jr., City Manager
 Concord City Council



CITY OF CONCORD

REPORT TO THE MAYOR AND CITY COUNCIL

FROM: Northern Pass Committee
DATE: October 6, 2015
SUBJECT: Interim Report on the Northern Pass

Recommendation:

Accept this report recommending the following three actions:

- 1) That the Council direct the City Solicitor to file for intervener status with the State of New Hampshire's Site Evaluation Committee relative to the Northern Pass application;
and
- 2) That City staff continue to follow the evolution of the Forward NH Fund; and
- 3) That the Council recommend—based on the information to date—that the Northern Pass bury its proposed line along the entire 8 mile route through Concord.

Background

At its March 9, 2015 meeting, the City Council appointed a committee to examine the Northern Pass project specific to its impact on Concord.

The committee, comprised of Councilor Matson (chairwoman); Councilor Bouchard; Councilor Coen and Mayor Pro Tem St. Hilaire met 6 times to review this matter between March 23, 2015 and October 5, 2015. Approximately 50 individual instances of testimony were taken from representatives of Northern Pass, the Society for the Protection of New Hampshire Forests, the Appalachian Mountain Club, and the general public. Over 20 email messages were submitted from the public for the committee's consideration as well as a petition comprised of (to date) 664 signatures all requesting burial of the Northern Pass project through Concord.

Officials with the Northern Pass project attended every meeting and provided answers to the committee's questions and promptly fulfilled requests for information solicited by committee members. Northern Pass representatives also submitted a PowerPoint presentation and a set of

visual simulations depicting the Loudon Road and D'Amante Drive intersection as well as perspectives from McKenna's Purchase. All of the public's correspondence, Northern Pass submittals, historical documents, and meeting minutes were posted on the committee's webpage and are included as attachments to this report.

Discussion

In its examination of the project, the Committee focused on the following key areas:

- 1) **Tax implications:** One of the central points put forth by the Northern Pass project has been the significant tax payments that would be generated by the value of the new infrastructure. The Concord portion of the project is estimated, by Northern Pass, to be valued at \$30,856,902 which Northern Pass calculates will generate \$548,636 in total tax payments to the City of Concord and the applicable school district.ⁱ Taxes paid to the County would be separate from this number based on its tax rate. In an April 22, 2015 letter to the committee, Northern Pass officials estimated that the County tax payment would be approximately \$90,000.ⁱⁱ

What the Committee found is that the "net book" methodology that Northern Pass prefers to utilize in determining its infrastructure's value would present the City with a continuously declining value over a twenty year horizon. According to testimony and documentation provided by Northern Pass' economist, Lisa Shapiro, Northern Pass contends that the value of its project would drop from \$30,856,902 in 2019 (year 1) to \$18,756,379 in 2038.ⁱⁱⁱ

Concord's Director of Real Estate Assessments, Kathy Temchack, testified that she would not employ a "net book" value methodology and instead would utilize a "replacement costs new less depreciation" methodology. The latter would allow for the depreciation but mitigate for some of the loss in value through the application of an inflation factor based on a potential replacement value.

It was noted by the Northern Pass economist that the tax payments generated by Northern Pass could actually increase, despite the declining project value, based on the assumption that the local tax rates would outpace the percentage of depreciation. While this could occur, it is also important to note that in a period of significant overall community tax base growth, the tax rate might not outpace the depreciation and Northern Pass would garner a benefit that other property owners in Concord would not enjoy.

Although the City—at present—is not legally compelled to utilize Northern Pass' methodology, Eversource—Northern Pass' parent company—is in active litigation in New Hampshire courts seeking to have this "net book" approach be the accepted methodology applied by municipalities in valuing its infrastructure.

- 2) Impact on Residents: The most frequent and visceral concern raised by the public in testimony and correspondence related to the overhead lines and supporting structures. Residents that testified or submitted correspondence expressed significant worry about the possible line noise and visual impact of this project and the fear of its potential negative effect on City property values.

To demonstrate what the project would look like along the densest neighborhoods it would abut, Northern Pass officials provided visual simulations taken at the Loudon Road/D'Amante Drive intersection as well as from McKenna's Purchase. The visualizations (which are enclosed) showed different support structure options such as a lattice, H-frame and monopole. The Committee and Northern Pass mutually agreed that the lattice structure was unacceptable and would not be considered in Concord.

Northern Pass officials explained that Concord would have H-Frame structures with two monopoles near Loudon Road and McKenna's Purchase. In total, there would be 77 new structures in addition to the 230 existing Eversource structures in the same proposed right of way. The majority of the Northern Pass structures would be between 85'-100' in height.

- 3) Burial Alternative: During the course of the Committee's meetings, the Northern Pass released the *Forward NH Plan* which proposed to bury 52 miles within the White Mountain National Forest in addition to the 8 miles that had already been determined would be buried in the North Country. According to information provided by Northern Pass, the line would be buried in "public roadways" and would eliminate more than 400 structures.^{iv}

The Committee asked Northern Pass officials whether a similar burial could be accomplished in Concord. Northern Pass representatives explained that the costs for an aerial installation are approximately \$3 million per mile. However, burial would equate to \$8-\$13 million per mile depending on the soils, topography, etc. In addition, Northern Pass officials posited that the existing easements within their right of way in Concord did not allow for an underground installation and successful renegotiation of all of those easements would be extremely challenging, if not impossible.

The Committee, therefore, inquired about the feasibility of Northern Pass burying the line along a roadway as was proposed in the White Mountain National Forest. Northern Pass officials explained that they would likely be precluded by federal and state regulations from using I-93 right of way unless the state and federal government would agree that

there was a significant hardship that made an I-93 route the only viable alternative. However, Northern Pass Project Director Jerry Fortier did testify that it is a long-standing practice for lines to be buried along non-interstate roadways.^v The Committee felt that this option should be explored.

- 4) Forward NH Fund: Northern Pass' *Forward NH Plan* included a \$200 million fund dedicated to "support important initiatives in tourism, economic development, community investment, and clean energy innovation."^{vi} In testimony before the Committee, Northern Pass officials explained that the Fund is for the entire state, not simply communities that are along the Northern Pass route. Investments from the Fund would be made over 20 years. Northern Pass officials indicated that an advisory committee is planned to oversee the Fund but it has not yet been convened.

The Committee felt that the Fund was worth monitoring and recommends that City Staff stay informed of how the fund evolves.

- 5) Site Evaluation Committee: As the Council is aware, the City is an intervener in the U.S. Department of Energy's review of the Northern Pass' federal permit. The Committee felt it was imperative for the City to also intervene in the State's Site Evaluation Committee and recommends that Council direct the City Solicitor to do so.

Conclusion

The Committee acknowledges, as did many of the residents that participated in this process, that it finds no issue with the merits of the Northern Pass project in light of the need for greater energy diversity in the region. However, in its opinion, burial of the Northern Pass project in Concord has not yet been thoroughly explored by Northern Pass. Therefore, the Committee stresses that this report, while important, is an interim step. The Committee hopes that if Council supports the recommendation seeking Northern Pass' burial of the line, Northern Pass officials will endeavor to fully vet that alternative and will return to the City with a new plan that takes into account what was discussed during the Committee's review. The Committee is prepared and willing to reconvene to further analyze any new development relative to the project.

The Committee's work, to date, would not have been possible without the assistance of the Community Development Department and the cooperation of Northern Pass officials who dedicated their time to attending every meeting and answering questions. The Committee especially wishes to thank the public for its continued engagement in this important matter.

w/att.

ⁱ Based on a spreadsheet entitled “Concord: Illustration of Northern Pass Transmission Local Property Tax Payments,” submitted to the Committee on September 15, 2015 by Lisa Shapiro, economist for the Northern Pass project.

ⁱⁱ Letter dated April 22, 2015 to Deputy City Manager Carlos P. Baía from Bonnie Kurylo with Northern Pass.

ⁱⁱⁱ Shapiro, September 15, 2015.

^{iv} *Forward NH Plan* News Release, August 18, 2015, “Northern Pass Will Now Go Under Roadways in Treasured Areas, Including White Mountain National Forest,” p. 2.

^v Comments by Jerry Fortier as cited in minutes of the 9/15/15 Northern Pass Committee meeting, p.6.

^{vi} *Forward NH Plan* News Release, August 18, 2015, p. 2.

Northern Pass EIS Website Comment Receipt

Refers to Comment placed on Oct 25, 2015

ID: 8454

Date Entered: Oct 25, 2015

Source: Website

Topics: Alternatives

Name: Susan Erickson

Organization: private citizen

Email: sajerrickson@comcast.net

Mailing Address: 51 Oak Hill Rd

City: Concord

State: NH

Zip: 03301

Country: US

Comment: I live at at 51 Oak Hill Rd Concord. Since I live right near Turtletown Pond I am also Very concerned about the Northern Pass. I have signed a petition to show how much I am against the proposed wires above land and so close to residents. This donated land should be researched to make sure (at the very least) that there weren't rules about noise being allowed in this conservancy area.

Today I want to make sure you are aware that there will be a continuous buzzing sound forever (from the wires)...that all of us who look to that area for its serenity and nature conservancy will have to endure on top of lowered property values. My daughter is a chemical and environmental engineer and she understands how these things work. I'm not even sure people living right next to the wires realize there will be constant noise pollution and the company has not told us up front. I have gone to their informational meetings.

Most citizens are not aware the amount of NOISE produced by unburied wires. It is wrong to let this project go through without being buried in east Concord by Turtletown Pond and I need you to step up and back us up. We resent being taken advantage of. Most noteworthy is the fact that this electricity is meant to be a conduit for use in other places not NH. Please think this through carefully and make the right moral and ethical decision.

0305-1

Thank you for your comment. Noise impacts from aboveground portions of the Project are described in Section 4.1.7 of the EIS, and in Section 3.2.2.5 of the Noise Technical Report. The audible noise due to the corona effect would not exceed the EPA guidance level of 55 dBA for outdoor areas beyond the transmission route. Applicable federal and state regulations pertaining to noise are described in Section 1.5 of the Noise Technical Report. Any specific requirements at the Turtletown Pond Conservation Area would need to be addressed by the applicant in the state siting process and through the county and local zoning processes.

0305-1

I went to the meetings at the Holiday Inn and can assure you that the company did not deal with the noise issue. The "corona" of 55 decibels max is the allowable amount by the EPA. This project will be about 44 decibels and that is loud enough to make a difference to homes and people who love the serenity and peacefulness this area offers. Over time this decibel amount would become annoying to anyone living in proximity. Not to mention that selling a property near this "corona" area would be next to impossible.

Please BURY the lines in East Concord. Sincerely, Susan Erickson

0305-1
Continued

0305-1 cont'd

0305

Northern Pass EIS Website Comment Receipt

0306-1

Thank you for your comment.

Refers to Comment placed on Oct 27, 2015

ID: 8455**Date Entered:** Oct 27, 2015**Source:** Website**Topics:** Purpose and Need**Name:** Becky Brown**Organization:****Email:** rebeccabrown09@gmail.com**Mailing Address:** 451 Hill Street**City:** Manchester**State:** NH**Zip:** 03102**Country:** US

Comment: As a young professional, I am very concerned that Forbes Magazine's recent "Best States for Business" list ranks New Hampshire 37th in America. A major problem is our region's extremely high cost for electricity. In fact, Forbes' list ranks NH even lower, at 44th, when it comes to costs of doing business.

That's why I am glad to read that Northern Pass has started its review process with the SEC. With the project improvements announced this summer, like dedicated low-cost power for New Hampshire and line burial through the White Mountain National Forest, the time is now to move Northern Pass forward.

The new Northern Pass will bring more than 1,000 megawatts of clean, cheap hydropower to New England. ISO NE, which manages the grid, has been saying for years that we need new sources of power to make up for the energy we are losing as older power plants around the region shut down. Earlier this year we saw Vermont Yankee close. We've also read shut-down announcements from other major power producers like the Pilgrim nuclear plant.

We already rely on burning natural gas for about 50% of our electric supply. It's time we diversify our power sources and get more low-cost, renewable hydropower like Northern Pass into the mix.

0306-1

Northern Pass EIS Website Comment Receipt

0307-1

Thank you for your comment.

Refers to Comment placed on Oct 28, 2015

ID: 8458

Date Entered: Oct 28, 2015

Source: Website

Topics: Purpose and Need, Other

Organization:

Comment: Prior to really looking into the Northern Pass project my outlook was, "Cheaper electric bill? Sign me up." After tracking project updates and doing additional research, I feel compelled to share my support for the Northern Pass – a project I didn't even initially intend to follow.

The fact is, New England has become over-dependent on natural gas. At the same time power plants that use other fuels have started to shut down. Electricity in New England is more expensive than it needs to be, given the opportunity in front of us to partner with Hydro-Quebec, and is among the highest price points nationally. If there's an opportunity to reduce costs by bringing another source of electricity into the region (one that's reliable, clean and at no cost to NH residents) how could I oppose that?

I understand why people don't want to alter the view from their backyard (and so does the project, as it committed to bury an additional 52 miles of the line underground) but, to me, that doesn't justify continuing the 3.3 million tons of carbon emissions (the equivalent of 690,000 cars off the road) that would be prevented per year with this project. So while my opinion is still, "sign me up," I'm now actively rooting for state regulators to approve this project. I also urge others to look into the new Forward NH Plan from Eversource to understand how they've addressed the concerns from opponents. Don't stop Northern Pass, START Northern Pass!

0307-1

Northern Pass EIS Website Comment Receipt

Refers to Comment placed on Oct 30, 2015

ID: 8460

Date Entered: Oct 30, 2015

Source: Website

Topics: Viewshed/Scenery, Recreation, Historic/Cultural, Tourism, Cumulative Effects

Name: Carl Martland

Organization: North Country Scenic Byway Council

Title: Chair

Email: Martlan@mit.edu

Mailing Address: 16 Post Road

City: Sugar Hill

State: NH

Zip: 03586

Country: US

Comment: Please see attached file with comments from the North Country Scenic Byways Council concerning the impact of the proposed project on Scenic Byways in Northern New Hampshire.

TO: Mr. Brian Mills, US Department of Energy
 FROM: Carl Martland, Chair, North Country Scenic Byways Council
 RE: Impact of Northern Pass on North Country Scenic Byways
 DATE: October 30, 2015

1. Background on the Scenic Byways of Northern New Hampshire

The North Country Scenic Byways Council (NC SBC) is responsible for developing and maintaining management plans for the scenic and cultural byways in northern New Hampshire. Members of the council represent communities served by the byways, state departments concerned with transportation and tourism, regional planning groups, and non-profit organizations that promote the use of the byways to reach the many attractions of the North Country of New Hampshire. NC SBC is submitting these comments in response to the draft Environmental Impact Statement for the proposed Northern Pass Project that was issued in June 2015 by the US Department of Energy.

Three NH Scenic Byways Would be Affected by the Northern Pass Project

Three of the region's major scenic byways would be adversely affected by the proposed Northern Pass Project. These byways cover all of the major state roads and non-interstate US highways serving the North Country:

1. The Presidential Range Trail includes NH Route 302 from Littleton to Twin Mountain, US Route 3 from Twin Mountain to Lancaster, and NH Route 116 from Whitefield to Jefferson along with routes further south that go through Crawford Notch on NH Route 302 and then head north on NH Route 16 through Pinkham Notch (Figure 1).
2. The Woodland Heritage Trail includes US Route 2 from Gorham to Lancaster, US Route 3 from Lancaster to Groveton, NH Routes 110/110A from Groveton to Milan, and NH Route 16 from Milan to Gorham (Figure 2).
3. The Moose Path Trail extends from Gorham to Colebrook to Pittsburg to the Canadian border along NH Routes 16, 26, 145 and US Route 3 (Figure 3).

The local roads that are accessed from the scenic byways are in many cases even more rural, more scenic, and less touched by 20th century industrialization than the designated scenic byways themselves. Prime examples would include Prospect Mountain Road in Weeks State Park, Lost Nation Road between Groveton and Lancaster, the access roads to Forest Lake State Park in Whitefield and Dalton, and the access roads to Coleman State Park in Stewartstown. The state-designated scenic byways are not only designed to highlight routes for a pleasant afternoon drive; they also provide visitors safe access to historical, cultural and recreational resources throughout the North Country. The byways lead visitors through the historic centers of old mill towns such as Whitefield, Lancaster, and Groveton, to beautiful rural villages such as Stark, and to the remaining 19th century resort hotels in Bretton Woods, Whitefield, and Dixville Notch. It is not only the views from the byways that would be compromised by the proposed project, it is the views along the backroads that visitors and residents use to reach the region's attractions and the views they encounter when they reach their destinations.

Northern Pass recently announced that it could support burial of its proposed transmission lines for an additional 52 miles from where the existing right-of-way crosses Route 302 in Bethlehem to where it crosses Route 3 in Bristol. Because of this significant change, the proposed route would no longer affect the River Heritage Trail or the national White Mountain Byway, nor would it mar the iconic approaches to the White Mountains for visitors driving up Interstate 93. In addition, Northern Pass has proposed changing the tower designs and heights in order to reduce visual impacts in selected locations along the rest of the route. Nevertheless, the new version of the project would still require 40 miles of new right-of-way in Coos County, and only 8 miles of the line would be buried north of Route 302. The lines and towers would be visible for many miles along the region's byways, and they would also have adverse impacts on views from historic town centers, hiking trails, farmlands, lakes, rivers and streams. In short, the project as currently proposed would still interfere with the scenic vistas, recreational opportunities and cultural resources that NSCBC is trying to promote along our scenic byways.

0309-1

Thank you for your comment. Impacts to national, state, and local scenic byways are analyzed in the EIS and in the Visual Impact Assessment Technical Report (see Sections 4.1.1, 4.2.1, 4.3.1, 4.4.1, and 4.5.1 of the EIS, Section 2.4.2.4 and Chapter 4 of the Visual Impact Assessment Technical Report). As analyzed in the Visual Impact Assessment Technical Report, six Key Observation Points (KOPs) are located at scenic route crossings: CL-1 in Clarksville, NH on the Connecticut River National Scenic Byway and Moose Path Trail, BT-1 in Bethlehem, NH on the Presidential Range Tour, CA-1 in Campton, NH on the River Heritage Tour, EA-3 in Easton, NH on the River Heritage Tour, and LI-2 in Lincoln, NH on the White Mountain Trail National Scenic Byway.

0309-1

The Proposed Northern Pass Project Would Cross the Byways in Eight Locations

The draft EIS summarizes a variety of visual and socio-economic impacts of the original proposed route as well as various alternatives for burying some or all of the route. The draft EIS summarizes results for each alternative within three regions, which they call the Northern, Central and Southern Sections. Now that most of the Central Section would be buried along state or federal roads, our concern is primarily with the Northern Section, which extends from the Canadian border in Pittsburg to the southern border of Coos County (i.e. the town line between Whitefield and Bethlehem). For this section, the new route is nearly identical to the original proposed route (referred to as the preferred alternative or Alternative 2 in the draft EIS). The draft EIS also documents two possible routes for burying the lines in the North Country (Alternatives 3 and 4a):

- Alternative 2: the proposed route (which includes burial along 8 miles of state roads plus another 32 miles of new right-of-way).
- Alternative 3: burial in the proposed corridor.
- Alternative 4a: burial in the proposed corridor to the junction with Route 3 in Clarksville, then burial along Route 3 through Coos County and Bethlehem.

Alternative 2 would create a string of towers that are generally 70 to 120 feet high that would be visible from many locations along three of New Hampshire's scenic byways.¹ The overhead lines would cross these byways in eight locations:

1. Presidential Range Trail²
 - a. Route 302 in Bethlehem
 - b. Route 3 N of Whitefield
 - c. Rt. 116 NE of Whitefield
 - d. Rt. 116 again, E of Whitefield
2. Woodland Heritage Trail
 - a. Rt. 2 SE of Lancaster
 - b. Rt. 110 E of Groveton
3. Moose Trail
 - a. Rt. 145 between Colebrook and Pittsburg
 - b. Rt. 26 between in Millsfield between Dixville and Erol

The draft EIS concludes that burial of the transmission lines would have no long-term visual impacts on the size of the viewshed, the impact of new structures on views from within the viewshed, or on views from roads. Therefore, we can focus on the effects of the proposed project (Alternative 2) on our region.

2. Visual Impact of the Towers

If the project is constructed as proposed, then visitors to the North Country would suffer adverse visual impacts as they drive along the scenic byways and as they visit the attractions and wild areas that can be found along the byways. Visitors would have repeated views of massive industrial structures in what they expected to be a rural or wild region little touched by 20th century industrial development. The draft EIS analyzes visual impacts using two methodologies, one that examines the effects on views from specific locations and a more general one that considers average impacts on views over the entire region. This section reviews the results of the location-specific analysis; the results of the broader analysis are considered in Section 3.

The draft EIS uses a well-defined methodology that can be used to document the visual impact of the towers and transmission lines on visitors to the North Country. The methodology is based to a large extent on photo simulations of what the proposed towers would look like from 15 "key observation points" (KOPs) along roads, trails, and recreational sites. Experts in evaluating visual impacts quantified the visual impact of the existing and proposed towers by documenting what they termed the "contrast-dominance rating" for each photo. This rating varied from 0 to 45, depending upon the apparent size of the

¹The lines would also be visible from Route 3 and Route 145 along the Connecticut River National Scenic Byway, which is managed by its own scenic byways council with representatives from both New Hampshire and Vermont.

² The Presidential Range Trail currently follows Route 3 from Whitefield to Lancaster. NSCBC has proposed adjusting the route to include Route 116 from Whitefield to Jefferson. Both routes are scenic.

0309-2

Thank you for your comment. As noted above, impacts to national, state, and local scenic byways are analyzed in the EIS and in the Visual Impact Assessment Technical Report (see Sections 4.1.1, 4.2.1, 4.3.1, 4.4.1, and 4.5.1 of the EIS, Section 2.4.2.4 and Chapter 4 of the Visual Impact Assessment Technical Report). As analyzed in the Visual Impact Assessment Technical Report, six Key Observation Points (KOPs) are located at scenic route crossings: CL-1 in Clarksville, NH on the Connecticut River National Scenic Byway and Moose Path Trail, BT-1 in Bethlehem, NH on the Presidential Range Tour, CA-1 in Campton, NH on the River Heritage Tour, EA-3 in Easton, NH on the River Heritage Tour, and LI-2 in Lincoln, NH on the White Mountain Trail National Scenic Byway.

0309-2

0309-3

Thank you for your comment. The EIS discusses the importance of tourism to New Hampshire, businesses, and the local and regional economy. The EIS (Section 3.1.2) and the Socioeconomic Technical Report describe the methods used to analyze potential impact to tourism for this EIS. As discussed in Section 4.1.2 of the EIS, no authoritative peer-reviewed studies were identified that address impacts to tourism as a result of the construction of transmission lines, and DOE did not attempt to develop such a study. No other resources were identified to allow for quantification of potential impacts. The EIS concludes that "while it is reasonable to conclude that the Project may have some level of impact on tourism within New Hampshire and on individual locations near the Project route, these are not quantifiable." Additionally, Section 4.1.1 of the EIS addresses potential impacts to Visual Resources which may result.

0309-3

0309-4

Thank you for your comment. The method for the viewpoint assessment is described in Section 2.4.6 and Appendix A of the Visual Impact Assessment Technical Report. Six Key Observation Points (KOPs) are located at scenic road crossings.

0309-4

structures and the extent to which the structures contrasted with the surrounding environment. The rating is higher for taller, more massive, closer structures that are located in a less developed, more pristine location. If the contrast-dominance rating is greater than 35, then the visual impact will be severe, which the draft EIS indicates would “likely be considered unreasonably adverse by a casual observer” (Table 1).

The photo simulations cover three situations of special interest to users of the scenic byways:

1. Views of towers at road crossings.
2. Views of a row of towers from a highway.
3. Views of towers from a scenic vantage point.

Table 1 Visual Contrast-Dominance Rating (draft EIS, Table 3-1)

Contrast-Dominance Rating	Numeric Value Range	Description
Severe	36-45	The visual change is very large, and in sensitive settings is likely considered unreasonably adverse by a casual observer.
Strong	27-35	The visual change is large and is likely to be considered adverse by a casual observer, and depending on the sensitivity of the setting it may be considered unreasonable.
Moderate	18-26	The visual change is clearly noticeable to a casual observer, and is likely to be considered adverse.
Weak	9-17	The visual change is noticeable, but so small as to be considered unimportant.
Negligible	0-8	The visual change is likely to go unnoticed by a casual observer.

Views of towers at road-crossings

One of the simulations (KOP BT-1) compares the view of the existing wooden poles with the views of a massive steel tower at the edge of Route 302 in Bethlehem. The photos are taken from a point approximately 500 feet away from where the line crosses the highway. In the existing case, the wooden poles are 579 feet away, and the draft EIS rates the visual impact to be “moderate,” which is defined as “the visual change is clearly noticeable to a casual observer, and is likely to be considered adverse.” In the simulated case, a steel tower that is nearly twice as tall is located closer to the edge of the road, and the visual impact is rated as “severe,” which is defined as “the visual change is very large, and in sensitive settings is likely considered unreasonably adverse by a casual observer.”

The views of steel towers would be similar at the seven other locations where the lines of the proposed Northern Pass Project cross the state’s designated scenic byways. Since we consider any viewpoint along a scenic byway to be a “scenic setting,” we would consider the construction of a steel tower so close to the highway to have an unreasonably adverse effect upon anyone driving along any of the byways hoping to enjoy scenic vistas. For someone driving along a highway at 40 or 50 mph, the fleeting view of a tower next to the roadside may be a minor distraction. However, repeated views of such towers is likely to have a cumulative, negative effect and create an overall impression of industrial intrusion.

Views of a row of towers from a highway

In some locations, such as driving along Route 3 from Whitefield toward Pittsburg, visitors will have repeated views of a row of towers running along a nearby hillside. Under these circumstances, the towers will be intrusive, not merely for a couple of fleeting moments, but for a half-minute or longer along each of several stretches of the road. For anyone seeking the beauty, solitude and rural integrity of the North Country landscape, such intrusions will be highly unwelcome. For someone driving along a scenic byway, the visual impact would be similar to that illustrated in the draft EIS by KOP WD-3 in Woodstock, which shows how someone driving up Interstate 93 would view a row of towers climbing over a hillside clearly visible through the windshield. In the current case, the wooden poles are mostly hidden below the tree line. The nearest visible structure is 2,666 feet away, and the visual impact is “moderate”. In the simulated case, the much taller towers are visible from 1,391 feet away, and the visual impact is “strong”, i.e. “the visual change is large and is likely to be considered adverse by a casual observer, and depending on the sensitivity of the setting it may be considered unreasonable.” The cumulative effect of coming across several such vistas when driving along a scenic byway would be even more unreasonable.

0309-4 cont'd

0309-4
Continued

0309-5

Thank you for your comment. Visual impacts of the Project from roadways are analyzed throughout the EIS (Sections 4.1.1, 4.2.1, 4.3.1, 4.4.1, and 4.5.1). Six Key Observation Points (KOPs) are located at scenic byway crossings. The impact of cumulative or repetitive exposure is not evaluated, but is considered infrequent at most locations. DOE has considered this comment and no change to the EIS was made.

0309-6

Thank you for your comment. The impact of cumulative or repetitive exposure is not evaluated, but is considered infrequent at most locations. DOE has considered this comment and no change to the EIS was made.

0309-5

0309-6

Views of towers from a scenic vantage point

The proposed lines and towers of the Northern Pass Project would not only be visible for many miles along the byways, they would be seen again and again as visitors traveled along local roads to visit nearby attractions, including historic town centers, hiking trails, farm stands, lakes, rivers and streams. Table 2 shows KOPs that illustrate the impacts on typical views that can be seen at many different points along and near the scenic byways. The first KOP documents the impact of a row of towers crossing a valley, as seen from a vantage point high above the valley. This KOP is in Weeks State Park, which is an attraction for travelers on either the Presidential Range Trail or the Woodland Heritage Trail.³ Even from a distance of more than a mile, the visual impact increases from weak to moderate when a row of steel towers is added. The next KOP shows the impact of adding a transition station and a row of steel towers to an area where there currently are no transmission lines. The visual impact goes from zero to strong. The third KOP shows what a hiker or fisherman would see across Little Dummer Pond. Today, three structures are barely visible, but taller steel towers would clearly make a strong visual impact at a distance of a third of a mile across the pond. Similar viewpoints would be seen from hiking trails and logging roads along much of the proposed new right-of-way from Stark to Clarksville. The fourth viewpoint shows the severe visual impact of a row of towers across a field from a location at the side of a road. Similar views can be had from locations up and down the proposed route, including the town roads in Stark, Northumberland, and Lancaster that provide interesting side trips for those traveling along the Woodland Heritage Trail. For these representative vistas, the average impact of the existing situation is “weak,” whereas the average situation for the proposed situation would be “strong”.

Table 2 Impact of Northern Pass on Views from Scenic Vantage Points

Location	View	Number of Structures Visible: Current & Proposed	Distance to Nearest Structure	Existing Visual Impact	Visual Impact of Steel Towers
Lancaster (LA-2)	View from ledge at Weeks State Park down toward lines crossing generally open area below	15 (34 proposed)	5,985 feet	13 Weak	23 Moderate
Clarksville (CL-1)	Current view across fields toward forest and distant hills (no existing ROW)	0 (transition station plus 4 towers proposed)	1,450 feet	0 None	29 Strong
Dummer (DU-1)	View across Little Dummer Pond toward ROW on side of ridge	3 (6 proposed)	1,756 feet	9 Weak	29 Strong
Deerfield (DE-1)	Lines crossing field and then over a small ridge from Nottingham Road	17 (24 proposed)	301 feet (325 proposed)	28 Strong	42 Severe
	Average Impact			13 Weak	31 Strong

Summary and Conclusions from the KOP Analysis

The draft EIS only included simulations for 15 points, but these 15 points represent the entire range of possible conditions, from zero impact if nothing is visible (CL-1, existing conditions) to the severest impact for someone staring at a tall steel lattice tower from less than 40 yards away (LI-4). As illustrated in the above examples, the contrast-dominance ratings for these 15 points could be applied to any similar situations at any point along the proposed route. Complete results of the KOP analysis can be found in Tables A1 and A2 in the Appendix to this comment.

³ Weeks State Park was donated to the State of NH by John Wingate Weeks, whose estate was located on the top of Prospect Mountain. Visitors drive up the mountain to visit his home and to enjoy panoramic views of the North Country from the stone tower that he constructed at the summit. Prospect Mountain Road, located wholly within the park, is another North Country scenic byway whose views would be affected by the proposed project.

0309-7

Thank you for your comment. The commenter accurately summarizes the viewpoint assessment analysis for Alternative 2 in the EIS (see Sections 4.2.1.2 and 4.4.1.2). The simulations from Key Observation Points (KOP) were chosen to represent impacted views from a range of distances and landscape contexts, with some emphasis placed on designated scenic resources.

0309-8

Thank you for your comment. The commenter accurately summarizes the viewpoint assessment analysis for Alternative 2 in the EIS. The impact analysis is presented by geographic section in order to facilitate review, and a summary of project-wide impacts is presented in Sections 2.5.1 and 4.1.1 of the EIS. The results of the KOP analysis are also summarized project-wide in Chapter 5 and the end of Appendix A of the Visual Impact Assessment Technical Report. As described in the Visual Impact Assessment Technical Report (Section 2.4.6), the selection of viewpoints is representative of various landscape conditions, including distances from the Project. However, the impact of the Project at each viewpoint depends on other unique characteristics such as intrinsic visual quality, visual magnitude, immediate and distant landscape character, scenic concern and viewer exposure which makes it difficult to extrapolate to other similar locations.

0309-8

In general, under existing conditions, the average visual impact is strong only when looking nearly straight down the ROW at a row of wooden structures. Distant views of a row of wooden structures are negligible or weak, while views from less than 1000 feet may have only a weak impact so long as the towers are mostly shielded by trees. The only severe impact is for a close-up view of an existing wooden structure.

When an additional row of taller towers is added, the average visual impact increases dramatically. All but three of the selected vistas from KOPs in the draft EIS have a strong or severe visual impact. The visual impact is severe in all seven instances where the nearest structure is less than 750 feet away, whether the view is toward a single nearby tower, a row of towers stretching left to right across the field of vision or a row of towers marching out into the distance. The visual impact can be strong even if only a few towers are visible from a distance of nearly 2,000 feet (DU-1) or if several dozen towers are visible from a distance of more than a mile (LI-5).

Thus, DOE's KOP analysis supports several very important conclusions concerning the visual impact of the proposed Northern Pass Project on people using the North Country Scenic Byways:

- Visual impacts are likely to be "severe" for all locations where towers would be visible up to at least 750 feet from the line. According to DOE's definitions (see Exhibit 1 above), these impacts would be deemed "unreasonably adverse by a casual observer".
- Visual impacts are likely to be "strong" for all locations where towers would be visible from up to at least 1800 feet of the line. Such an impact would be deemed "adverse by a casual observer, and depending upon the sensitivity of the setting it may be considered unreasonable".
- Visual impacts may be moderate or strong even for distances up to two miles from the nearest tower. Even moderate impacts are "likely to be considered adverse" by a casual observer.

In short, the KOP shows that the visual impact of the proposed towers would be "adverse" or "unreasonably adverse" for those people using the scenic byways to explore the North Country of New Hampshire. The strength of the KOP analysis is that it is based upon photographs taken from actual viewpoints that would be of interests to travelers on scenic byways, to hikers or fishermen, or to people considering renting or purchasing property for weekends, vacations, or retirement. The weakness of the KOP analysis is that its results are spread across multiple sections of the draft EIS, and no attempt is made to show how the KOP analysis could apply to different locations.

Average and Aggregate Visual Impacts

The draft EIS used the KOP analysis to document visual impacts at a small number of specific locations. A different methodology was used to estimate the overall visual impact of constructing a new line of towers. This methodology considered the visual impact from roads as well as the overall visual impact for the region:

- The viewshed for the region was defined to be the area within ten miles of the proposed route where a viewer would be able to see some portion of the lines or towers.
- The viewshed for roads was measured as the miles of road from which a traveler would be able to see some portion of the lines or towers.
- The "visual magnitude" was an estimate of the objective impact of structures on a viewer, taking into account the size of the structures, the number of structures, and the distance to the structures. The visual magnitude was estimated on a scale from 0 (none) to 5 (very high). (p. 8-6)
- The "intrinsic visual quality" was an index of "the landscape's inherent potential for attractiveness, stemming from both landform and land cover classification" (p. 8-3). This index ranged from 0 for industrial development on flat land to 5 for such places as a mountain lake or forested mountains.
- The "scenic impact" took into account both the visual magnitude and the intrinsic visual quality, taking into consideration social concerns such as the "level of designation of a scenic resource, the importance of scenery to the dominant activity, and the potential for visual exposure to area residents." This was also an index that ranged from 0 to 5 for each point within the viewshed. (p. 8-5)
- The average visual magnitude and the average scenic impact were calculated for the viewshed of each alternative.

Table S-2 of the Summary of the draft EIS summarizes the visual impact of the proposed project by showing the net change in average scenic impact:

0309-8 cont'd

0309-8
Continued

0309-9

Thank you for your comment. All GIS-based models were re-run for the final EIS to address the commenter's concern. A new calculation, the "aggregate scenic impact," was added to the final EIS and additional aggregate indices were added to the Visual Impact Assessment Technical Report to account for an increase in the size of the affected area. The rating scales used in the landscape assessment characterize a single cell or point, and it is a misinterpretation to apply the same descriptions to the average value. However, the area and average indices used in the Visual Impact Assessment Technical Report are useful to make relative comparisons among alternatives (see Section 5 of the Visual Impact Assessment Technical Report).

0309-9

“The net change in visual resources is measured in comparison with the existing condition, Alternative 1, which includes the existing PSNH transmission line. The existing condition has a visual magnitude of 1.67 (Very Low to Low) and a scenic impact rating of 1.62 (Very Low to Low).” (p. S-18)

According to the Summary of the draft EIS, the visual impact of the project would be minor, as the proposed action would only increase the scenic impact from 1.61 to 1.79, which would still be “Very Low to Low.” However, by showing the average scenic impact, this table fails to show the large increase in the area that would be affected. When the details of the analysis are examined, it becomes clear that the scenic impact would actually be much greater, as there would be an increase of 63% in the size of the viewshed for the entire project (Table 4-1) and an increase of 165% in the size of the viewshed in the Northern Section (Table 4-68).

The draft EIS does not present a unified measure that takes into account both the increase in the size of the viewshed and the increase in the average visual magnitude. However, aggregate measures can be easily be created by multiplying the average visual magnitude by the area of the viewshed or the miles of road that are affected. When aggregate measures are used, the visual impact of the proposed project can clearly be seen to be much greater than what is shown by looking at the minor increases in average impacts. The North Country Scenic Byways Council is naturally most interested in the effects of the proposed lines and rights-of-way on the Northern Section of the route. Various measures of the visual impacts for the Northern Region are presented in Table 3 for the region’s viewshed and Table 4 for the region’s roads. All of these measures come directly from the draft EIS.

Table 3 Landscape Assessment Impacts (from Draft EIS Table 4-68 and pp. 4-93 to 4-96)

	Alternative 1 No Northern Pass	Alternative 2 Proposed Project	Alternative 3 Burial in Proposed Right- of-Way	Alternative 4a Burial Along Route 3
Land Area in Viewshed (sq. miles)	20 sq. mi.	53 sq. mi.	20 sq. mi.	20 sq. mi.
Additional Land Area with High or Very High Visual Magnitude	-	6 sq. mi.	0	0
Average Visual Magnitude within Viewshed	1.25 (very low to low)	1.61 (very low to low)	1.25 (very low to low)	1.25 (very low to low)
Land Area with High or Very High Scenic Impact	0.7 sq. mi.	2 sq. mi.		
Overall Scenic Impact	1.11 (very low to low)	1.32 (very low to low)	1.11 (very low to low)	1.11 (very low to low)

Table 4 Roads-Based Analysis (from Draft EIS Table 4-69, pp. 4-94 to 4-96, and p. 4-117)

	Alternative 1 No Northern Pass	Alternative 2 Proposed Project	Alternative 3 Burial in Proposed Right- of-Way	Alternative 4a Burial Along Route 3
Miles of Roads within Viewshed	21	45	21	21
Miles of Designated Scenic Roads within Viewshed	3.4	9	3.4	3.4
Average Visual Magnitude within viewshed	2.18 (low)	2.49 (low to moderate)	2.18 (low)	2.18 (low)
Additional Overhead Road Crossings	N.A.	41	0	0

Table 5 shows how the aggregate measures of visual impacts can be calculated using data from Tables 3 and 4. The aggregate visual magnitude for the region (Table 5, row 3) is obtained by multiplying the land area of the viewshed (row 1) by the average visual magnitude (row 2). For the existing situation (Alternative 1), the average visual magnitude is 1.11 and the aggregate is $1.11 \times 20 = 22.2$. For the proposed project, the average visual magnitude is 1.61 and the aggregate is 85.3. While the average measure increased only 45% from 1.11 to 1.61, the aggregate measure increased by 284% from 22.2 to 85.3. The right-hand column of Table 3 shows the incremental changes, which are obtained by subtracting the measure for Alternative 1 from the measure for Alternative 2. The incremental change offers another way of looking at the impact of the proposed Northern Pass Project on the North Country: in addition to the existing 20 square miles where the average visual impact today is 1.11, there would be a much larger area where the average visual impact would be 1.91, or nearly twice as bad.

Rows 4-6 of Table 5 show a similar analysis for the visual impact on roads. The length of roadways with views of transmission lines would more than double, from 21 to 45, and the aggregate visual impact would rise from 46 to 112, an increase of 143%.

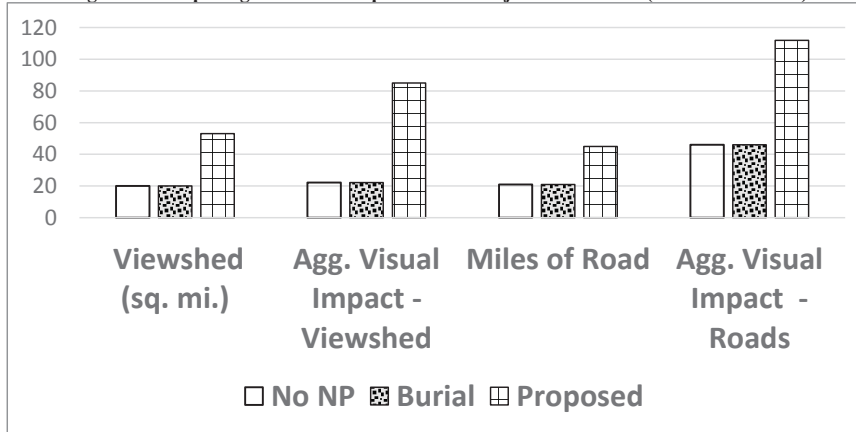
Table 5 Aggregate and Incremental Visual Impacts on Viewsheds and Roadways

		Alternative 1 No Northern Pass	Alternative 2 Proposed Project	Increment
	Viewshed Measures			
1	Land area of Viewshed	20 sq. mi.	53 sq. mi.	33 sq. mi.
2	Average Visual Magnitude	1.11 (very low to low)	1.61 (very low to low)	1.91 (low)
3	Aggregate Visual Magnitude (Sq. mi. of viewshed x average visual magnitude)	$20 * 1.11 = 22.2$	$53 * 1.61 = 85.3$	$85.33 - 22.2 = 63.1$
	Road Measures			
4	Miles of Roads	21	45	24
5	Aggregate Visual Magnitude	$21 * 2.18 = 46$	$45 * 2.49 = 112$	66
6	Average Visual Magnitude	2.18 (low)	2.49 (low to moderate)	2.75 (moderate)

Summary and Conclusions from the Analysis of Average and Aggregate Visual Impacts

Figure 4 shows that the proposed project would more than double the areas exposed to transmission towers and transmission lines; the viewshed would increase 165% from 20 to 53 square miles and the miles of roads exposed to the towers would increase from 21 to 45. The aggregate measures of visual impact would increase by an even greater amount. If the lines were buried, the visual impact would be negligible. Using average measures for the viewshed, as was done in the draft EIS, underestimates the visual impacts, which is why the North Country Scenic Byway Council recommends using aggregate measures.

Figure 4 Comparing the Visual Impacts of the Major Alternatives (Northern Section)



Summary, Conclusions, and Recommendations

The proposed towers will diminish the experience of those who travel along North Country Scenic Byways

The draft EIS documents the visual impacts of the proposed Norther Pass Project on the region traversed by scenic byways in the North Country. The North Country Scenic Byways Council is concerned about the following negative effects of the proposed project on people using scenic byways in the North Country:

1. The visibility of major transmission lines from our scenic byways increases considerably. The draft EIS estimates that the proposed towers would be visible from 9 miles of scenic byways in the Northern Section of the route, whereas the much shorter wooden towers are now visible only from 3.4 miles of scenic byways.
2. Views will be adversely affected in locations with iconic scenic or cultural significance, e.g. Stark Village, Weeks State Park, and the site of the Indian Stream Republic in Pittsburg.
3. The aesthetic approaches to the historic town centers of Bethlehem, Whitefield, Lancaster, and Groveton will be marred by transmission lines and towers.
4. The lines will adversely affect hikers, fishermen, campers and others who would come across power lines or views of power lines as they move off the byways to places like Lost Nation Road, Forest Lake State Park, Coleman State Park, Little Dummer Pond and the trails to the back country.
5. Hikers who travel beside the back country’s lakes and streams and climb to the region’s many remote ledges, hillsides, and mountain tops will be exposed to multiple views of industrial towers in a region noted for its natural beauty and remoteness. Locations that would be adversely affected include the iconic vistas from the Percy Peaks and many miles of the Cohos Trail, which goes through the same valleys that would be used for the new right-of-way through Coos County.
6. Repetitive views of industrial towers will diminish the scenic beauty, cultural integrity and historical interest of the entire region.

The North Country Scenic Byways Council is concerned that these negative visual impacts will diminish the unique scenic and cultural resources of the North Country, which would be contrary to the spirit and mission of New Hampshire’s scenic byways. We believe that there would be fewer people using the trails exposed to the towers, that there would be fewer people canoeing and fishing in lakes and waterways exposed to the towers, that there would be fewer visitors to the attractions and towns that will be hemmed in by towers, and that there will be fewer locations suitable for second homes and recreational development. Tourism is a major industry in the North Country precisely because of the rural character of the region, the pristine wildness of its back country, and the miles upon miles of scenic byways that wend throughout the region.

0309-10

Thank you for your comment. Impacts to national, state, and local scenic byways are analyzed in the EIS and in the Visual Impact Assessment Technical Report (see Sections 4.1.1, 4.2.1, 4.3.1, 4.4.1, and 4.5.1 of the EIS, Section 2.4.2.4 and Chapter 4 of the Visual Impact Assessment Technical Report).

0309-11

Thank you for your comment. Commentor's concerns about locations with iconic scenic and/or cultural significance are noted. Visual Impacts on locations with iconic scenic significance are analyzed in Section 4.2.1 of the EIS. Additionally, DOE is addressing potential adverse effects on resources in locations with iconic scenic and/or cultural significance, in accordance with Section 106 of the National Historic Preservation Act and its implementing regulations. This includes resources in locations such as Stark Village, Weeks State Park, and the Indian Stream Republic in Pittsburg, if they were identified within the area of potential effects ("APE") [36 C.F.R. Section 800.16(d)].

For more information on how DOE is addressing potential adverse effects on these types of resources, see Sections 1.6, 2.5.8, and 3.1.8 of the final EIS. Additionally, if resources in locations with iconic scenic and/or cultural significance such as Stark Village, Weeks State Park, and the Indian Stream Republic in Pittsburg, were identified within the APE: Sections 1.4.1, 1.4.3, 1.4.4, 1.4.6, and 1.4.7 of the Cultural Resources Technical Report contain information on the methodologies that have been, or will be employed for considering potential adverse effects on such resources; Section 3.1.2 of the Cultural Resources Technical Report contains information on potential impacts of the proposed project on such resources; and Appendices B and C contain information on the studies that have been, or will be, conducted as part of the assessment of adverse effects of the proposed project on such resources.

0309-10

0309-11

0309-12

0309-13

0309-12

0309-14

Thank you for your comment. Visual impacts within the Northern Section are analyzed in Section 4.2.1 of the EIS. Impacts to the recreation experience in the Northern Section are analyzed in Section 4.2.3 of the EIS. A Key Observation Point (KOP) simulation was added to the final EIS and Visual Impact Assessment Technical Report at Little Diamond Pond in the Coleman State Park, Stewartstown (KOP SE-3).

0309-13

Thank you for your comment. Impacts to visual and recreation resources in the Northern Section are analyzed in the EIS (Sections 4.2.1 and 4.2.3, respectively) and the Recreation Technical Report and Visual Impact Assessment Technical Report. The Recreation Technical Report and the final EIS were updated to include impacts to the Cohos Trail. Short-term impacts could result from Alternatives 2, 3, 5a, 5b, 5c, and 7 north of Lovering Mountain where the Project would be underground along the trail for 1.8 miles. Under Alternatives 2, 5a, 5b, 5c, and 7 the Cohos Trail would cross under overhead lines at three locations, resulting in indirect impacts. The final EIS and Visual Impact Assessment Technical Report has been updated to include a Key Observation Point (KOP) on the Cohos Trail in Stark (KOP ST-4). See Section 4.2.1 and Appendix E of the final EIS. See Section 4.2.3 of the final EIS for a brief discussion of recreation impacts to this resource, additional information has been added to the Recreation Technical Report. No Key Observation Points (KOPs) were identified in the Percy Peaks, but landscape characteristics and scenic value is captured in the landscape assessment.

0309-14

Thank you for your comment. The EIS analyzes the importance of tourism to New Hampshire, businesses, and the local and regional economy. The EIS concludes that "while it is reasonable to conclude that the Project may have some level of impact to tourism within New Hampshire, and to individual locations proximate to the Project route, these are not quantifiable." Additionally, visual impacts, including those to roadways and scenic byways, are analyzed throughout the EIS and Visual Impact Assessment Technical Report.

The draft EIS ignores the impacts on tourism

The draft EIS briefly considered the impact of the project on tourism, but concluded that the effects could be ignored since they would likely be minor and would in any case be unquantifiable:

“Impacts to tourism appear to be more affected by macroeconomic factors such as the stability of the national economy and gasoline prices more than site-specific changes. While it is reasonable to conclude that the Project may have some level of impact to tourism within New Hampshire, and to individual locations proximate to the Project Route, these are not quantifiable.” (p. S-20; also p. 4-15)

The North Country Scenic Byways Council cannot agree with this assessment. Our byways will be diminished by the project. Our tourist-related economy will be hurt by the project. The scenic beauty and rural integrity of our region will suffer from this project. While it may be difficult to quantify the effects of Northern Pass on tourism, it is clear that Northern Pass as currently proposed will mar a vast portion of the North Country for decades to come. It is up to DOE and its consultants to acknowledge the scope of the visual impacts, to consider aggregate rather than average visual impacts, and to examine how environmental degradation affects recreational opportunities and the tourism industry within an area noted for its natural beauty. Tourism is a major industry in the North Country, and it is the quality of the environment that attracts visitors, bus tours, second-home owners, and retirees from across the US and from overseas.

Burying the lines would avoid negative visual impacts

The draft EIS indicated that burial of the lines is feasible from both a technological and an economic perspective, and Northern Pass confirmed this conclusion by proposing a different technology that can be buried for long distances. If it is possible to bury the lines in roadways around the White Mountains, then it should also be possible to bury the lines down Route 3 (or other roads) in Coos County. Burying the lines would make it possible to obtain the economic benefits of the project without sacrificing the natural beauty and rural landscapes that attract people to the North Country via the region’s scenic byways.

The EIS requires a better assessment of the impact of overhead lines on views, tourism, and property values

The draft EIS fails to produce a clear, complete assessment of the visual impact of transmission lines and towers on the region served by New Hampshire’s scenic byways in Coos County and Bethlehem. Specific problems to be addressed include the following:

1. The overall visual impact cannot be represented by using the average impact over the viewshed, ignoring the fact that the size of the viewshed would more than double. We suggest using an aggregate measure that multiplies the average impact by the size of the viewshed as illustrated above in Table 5 and Figure 4.
2. The analysis of Key Observation Points (KOPs) clearly documents the adverse effects of towers on the views from a representative set of observation points. However, the draft EIS presents detailed site information and the photographic simulations in Volume 2, while scattering the contrast-dominance definitions, ratings and interpretations four different places in Volume 1. We suggest a better, more consolidated presentation and interpretation of the results of the KOP analysis:
 - a. The EIS can and should present the results of the KOP analysis in a single location, using a format similar to that in Tables A1 and A2.
 - b. The EIS can and should indicate that this analysis selected a set of observation points to represent the full range of conditions that might be encountered, from a very distant view of a few towers to a close-up view of a pole or a tower.
 - c. The EIS should show how to use the KOP results to estimate visual impacts from any other locations where the existing towers or the proposed structures would be visible.
3. The draft EIS’s conclusions from the KOP analysis are inconsistent with the conclusions from its analysis of the average visual impacts. The draft EIS indicates that the average visual impact would remain “Very Low to Low”, but the KOP analysis indicates that the actual visual impact would likely be adverse wherever the towers are visible from less than 1800 feet and unreasonably adverse wherever the towers are visible from less than 750 feet. When summarizing visual impacts, the EIS must therefore refer to the results of both analyses.

0309-14 cont'd

0309-14
Continued

0309-15

Thank you for your comment. The EIS analyzes the visual impacts of a number of alternative alignments, including six which would be entirely buried within the Northern Section (Alternatives 3, 4a, 4b, 4c, 6a, 6b). The visual impact of each alternative alignment is presented in comparison form in Section 2.5.1 of the EIS. DOE will decide whether or not to grant the requested Presidential permit for the Project at the international border crossing proposed in the amended Presidential permit application, analyzed in this EIS as Alternative 7 - Proposed Action.

0309-16

Thank you for your comment. All GIS-based models were re-run to address the commenter’s concern. A new calculation, the "aggregate scenic impact," was added to the final EIS and additional aggregate indices were added to the Visual Impact Assessment Technical Report to account for an increase in the size of the affected area. However, the area and average indices used in the Visual Impact Assessment Technical Report are useful to make relative comparisons among alternatives (see Section 5 of the Visual Impact Assessment Technical Report).

0309-15

0309-17

Thank you for your comment. The impact analysis is presented by geographic section in order to facilitate review, and a summary of project-wide impacts is presented in Sections 2.5.1 and 4.1.1 of the EIS. The results of the KOP analysis are also summarized project-wide in Chapter 5 and the end of Appendix A of the Visual Impact Assessment Technical Report. As described in the Visual Impact Assessment Technical Report (Section 2.4.6), the selection of viewpoints is representative of various landscape conditions, including distances from the Project. However, the impact of the Project at each viewpoint depends on other unique characteristics such as intrinsic visual quality, visual magnitude, immediate and distant landscape character, scenic concern and viewer exposure which makes it difficult to extrapolate to other similar locations.

0309-16

0309-17

0309-18

0309-18

Thank you for your comment. The rating scales used in the landscape assessment characterize a single cell or point, and it is a misinterpretation to apply the same descriptions to the average value. However, the three indices (viewshed area,

average visual impact, and aggregate visual impact) used in the visual impact assessment are useful to make relative comparisons among alternatives. The aggregate calculations, including the "aggregate scenic impact" in the final EIS and additional aggregate indices in the Visual Impact Assessment Technical Report were added in response to comments to account for an increase in the size of the affected area. The Key Observation Point (KOP) analysis provides another approach to evaluating the visual impact. The two approaches reinforce each other, one providing a broad overview and the other providing a detailed view of representative viewpoints. Chapter 5 in the Visual Impact Assessment Technical Report includes both analyses.

- 4. The EIS cannot ignore the visual impacts of the towers on tourism. The KOP analysis indicates that views of the towers from within 1800 feet will be considered to be adverse or unreasonably adverse by the casual observer. Tourists traveling New Hampshire’s scenic byways are much more than “casual observers,” as they come to northern New Hampshire precisely because there is so much to be seen. Those who consider spending their weekends, vacations or retirement in New Hampshire will be much less willing to rent or purchase property where the views are “adverse or unreasonably adverse.”

In conclusion, the North Country Byways Council believes that additional analysis is required in order to produce a credible Environmental Impact Statement for the proposed Northern Pass Project.

0309-19

0309-19

Thank you for your comment. The EIS discusses the importance of tourism to New Hampshire, businesses, and the local and regional economy. The EIS (Section 3.1.2) and the Socioeconomic Technical Report describe the methods used to analyze potential impact to tourism for this EIS. As discussed in Section 4.1.2 of the EIS, no authoritative peer-reviewed studies were identified that address impacts to tourism as a result of the construction of transmission lines, and DOE did not attempt to develop such a study. No other resources were identified to allow for quantification of potential impacts. The EIS concludes that "while it is reasonable to conclude that the Project may have some level of impact on tourism within New Hampshire and on individual locations near the Project route, these are not quantifiable." Additionally, Section 4.1.1 of the EIS addresses potential impacts to Visual Resources which may result.

Appendix
**Consolidation of the Results of the Draft EIS's Analysis
of the Impact of Transmission Lines on Key Observation Points⁴**

Table A1 Visual Impact of Existing Situation

Location	View	Number of Structures Visible	Distance to Nearest Structure (feet)	Visual Impact
CL-1	View across fields toward forest and distant hills (no existing ROW)	0	-	0
Franconia (FR-2)	View from summit of Mt. Lafayette	6	34,443	7 Negligible
Dummer (DU-1)	View across Little Dummer Pond toward ROW on side of ridge	3	1,756	9 Weak
Lincoln (LI-2)	Driving north along Interstate 93 where it enters Franconia Notch State Park	5	10,491	10 Weak
Lancaster (LA-2)	View from ledge at Weeks State Park down toward lines crossing generally open area below	15	5,985	13 Weak
Campton (CA-1)	View to north at Exit 28, where existing ROW climbs Sunset Hill	4	758	16 Weak
Woodstock (WD-3)	Driving north along Interstate 93 just north of Exit 31 where towers climb across a ridge almost directly in front of viewer	6	2,665	21 Moderate
Concord (CO-1)	View of three rows of lines next to a shopping center	6	737	22 Moderate
Bethlehem (BT-1)	View across small pond where existing ROW crosses Route 302	2	579	24 Moderate
Concord (CO-4)	View from boat ramp across Turtleton Pond toward lines extending along shore	10	1,058	25 Moderate
Lincoln (LI-5)	View from Appalachian Trail near summit of S. Kinsman toward Bog Pond	25	9,320	25 Moderate
Deerfield (DE-1)	Lines crossing field and then over a small ridge from Nottingham Road	17	301	28 Strong
Woodstock (WD-4)	View along ROW where it crosses the Gordon Pond Trail	5	507	28 Strong
Easton (EA-3)	View from where ROW crosses Route 116 looking east toward Kinsman Ridge	7	129	32 Strong
Lincoln (LI-4)	Where the ROW crosses the Appalachian Trail at its intersection with the Reel Brook Trail, looking at the nearest tower	1	105	36 Severe
Average				18 Weak/ Moderate

⁴ Source of data: details of KOP from Volume 2 of the draft EIS; contrast dominance ratings and qualitative interpretations from Sections 4.2.1, 4.3.1 and 4.4.1 of the draft IES.

Table A2 Visual Impact of Proposed Situation

Location	View	Number of Structures Visible	Distance to Nearest Structure (feet)	Visual Impact
Franconia (FR-2)	View from summit of Mt. Lafayette	16	35,412	11 Weak
Lincoln (LI-2)	Driving north along Interstate 93 where it enters Franconia Notch State Park	8	10,155	17 Weak
Lancaster (LA-2)	View from ledge at Weeks State Park down toward lines crossing generally open area below	34	5,981	23 Moderate
Lincoln (LI-5)	View from Appalachian Trail near summit of S. Kinsman toward Bog Pond	38	9,411	27 Strong
Dummer (DU-1)	View across Little Dummer Pond toward ROW on side of ridge	6	1,756	29 Strong
CL-1	View of new transition station at transition between towers and burial, across fields toward forest and distant hills	5	1,450	29 Strong
Woodstock (WD-3)	Driving north along Interstate 93 just north of Exit 31 where towers climb across a ridge almost directly in front of viewer	11	1,391	32 Strong
Concord (CO-4)	View from boat ramp across Turtletown Pond toward lines extending along shore	13	1,058	33 Strong
Concord (CO-1)	View of three rows of lines next to a shopping center	7	749	36 Severe
Campton (CA-1)	View to north at Exit 28, where existing ROW climbs Sunset Hill	12	649	37 Severe
Bethlehem (BT-1)	View across small pond where existing ROW crosses Route 302	3	509	40 Severe
Deerfield (DE-1)	Lines crossing field and then over a small ridge from Nottingham Road	24	325	42 Severe
Woodstock (WD-4)	View along ROW where it crosses the Gordon Pond Trail	10	502	41 Severe
Easton (EA-3)	View from where ROW crosses Route 116 looking east toward Kinsman Ridge	25	126	43 Severe
Lincoln (LI-4)	Where the ROW crosses the Appalachian Trail at its intersection with the Reel Brook Trail, looking at the nearest tower	1	117	44 Severe
Average				32 Strong

Northern Pass EIS Website Comment Receipt

0312-1

Thank you for your comment.

Refers to Comment placed on Oct 30, 2015

ID: 8461**Date Entered:** Oct 30, 2015**Source:** Website**Topics:** Alternatives**Name:** nick jenkins**Organization:** Sunny Acres Farm of Peaked Hill**Title:** farmer**Email:** 009ntj@gmail.com**Mailing Address:** 75 Old Stage Rd**City:** bristol**State:** NH**Zip:** 03222**Country:** US

Comment: Please bury the northern pass or do not allow it. It will go thru my front yard that already have lower lines northern pass will add taller ones too. So that would mean full coverage of power lines out the front door. Plus more noise!!!! The barn was built in 1790 and the house 1810. What ever happened to New Hampshire Land Of Scenic Splendor????!!!!!! Please bury or do not allow it. Thanks. Nick Jenkins, Mary Worthen, 75 Old Stage Road, Bristol, NH Plus plenty more of the Worthen clan don't want it. Please come check the place out yourself. Thanks again. Respectfully, Nick

0312-1

Northern Pass EIS Website Comment Receipt

0313-1

Thank you for your comment.

Refers to Comment placed on Oct 30, 2015

ID: 8462**Date Entered:** Oct 30, 2015**Source:** Website**Topics:** Alternatives, Noise**Name:** nick jenkins**Organization:** Sunny Acres Farm of Peaked Hill**Title:** Farmer**Email:** 009ntj@gmail.com**Mailing Address:** 75 Old Stage Rd**City:** Bristol**State:** NH**Zip:** 03222**Country:** US

Comment: Please bury or don't put in the northen pass. We already have lower power lines now more taller ones all going thru the front yard. Plus more the buzzing and snapping noise that will come with it. House built in 1810 the barn 1790. What ever happened to New Hampshire Land Of Scenic Splendor?!!!! Please come and check out the place yourself. Nick Jenkins and Mary Worthen 75 Old Stage Road, Bristol, NH 03222 Thanks. Respectfully, Nick

0313-1

Northern Pass EIS Website Comment Receipt

Refers to Comment placed on Oct 31, 2015

ID: 8463

Date Entered: Oct 31, 2015

Source: Website

Topics: Viewshed/Scenery, Recreation, Private Property/Land Use, Tourism, Quality of Life, Environmental Justice

Organization:

Comment: My wife and I have had a cottage on the First Connecticut Lake since 1991. We love the beauty and grandeur of the North Country.

In 2010 the Northern Pass project, to transmit electricity via high power lines from Quebec into the New England grid, was unveiled. The position of the vast majority of people in the North Country, which I agree with, is that for the project to receive local support the transmission lines should be buried. This has been repeatedly rejected as an option by the officials at Northern Pass saying that that option was not financially feasible. After many years of North Country opposition they agreed to bury 8 miles of line in Pittsburg and then with still more opposition they have recently conceded that they can afford to bury a segment of line in the White Mountain Forrest as well. However, most of the lines that run though Coos County will still be high power lines.

Recently the federal Department of Energy recommended that Clean Power Link (a 154 mile transmission line from Quebec to the New England grid – all underground or underwater) be granted a presidential permit.

If Clean Power Link can bury all of their lines why can't Northern Pass? Obviously they would rather not pay the added expense and they don't seem to care much if the appearance of the North Country is marred.

My second observation is that with Clean Power Link so close to final approval why do we even need to entertain the thought that another high voltage line is necessary?

I believe that the citizens of New Hampshire should be given the same respect as the citizens of Vermont. The lines will be buried there and there has been little Vermont opposition to the project. We deserve the same courtesy if Northern Pass is to be approved.

Thank you,

Richard Oas
2094 Elm St.
Manchester

0314-1

Thank you for your comment. The EIS analyzes several full-burial alternatives in detail (Alternatives 3, 4a, 4b, and 4c). The potential environmental impacts of all twelve alternatives, as well as technical constraints and costs, are discussed throughout the EIS.

The purpose of, and need for, DOE's action is to determine whether or not to grant the requested Presidential permit for the Project, which is a proposed transmission line crossing the international border. As discussed in Section 1.4 of the EIS, Northern Pass set forth a range of project objectives and benefits in its permit application. DOE and the cooperating agencies reviewed this documentation and determined that the project objectives include addressing three primary needs concerning New England's electricity supply: diverse, low-carbon, non-intermittent electricity. Section 2.4 of the EIS discusses alternatives considered but eliminated from further analysis. DOE determined that other transmission projects, power generation alternatives, and energy conservation do not meet the purpose and need for DOE's action. The EIS analyzes in detail the potential environmental impacts of a No Action Alternative and eleven action alternatives. Under the No Action Alternative, it is assumed that existing energy sources, including distributed generation and alternative energy generation, would continue to supply the ISO-NE region and that energy efficiency measures would continue. Section 3.1.2.5 of the EIS discusses the existing condition of Electricity System Infrastructure which would be anticipated to persist under the No Action Alternative.

0314-1

Northern Pass EIS Website Comment Receipt

0318-1

Thank you for your comment.

Refers to Comment placed on Nov 5, 2015

ID: 8467

Date Entered: Nov 5, 2015

Source: Website

Topics: Economic

Name: Orzeck

Organization: do the math

Country: US

Comment: NP costs stayed at \$1.4B with the burial of 52 miles. They stated 400 less towers saves \$80M. This equates to \$200k/tower. Wouldn't going underground the whole way and saving \$200k/tower for the balance of ~600 towers be a savings of \$120M, by their own figures?

0318-1

Northern Pass EIS Website Comment Receipt

Refers to Comment placed on Nov 5, 2015

ID: 8468

Date Entered: Nov 5, 2015

Source: Website

Topics: Viewshed/Scenery

Name: Orzeck

Organization:

Country: US

Comment: According to 3.3.2

There are two attributes that contribute to scenic sensitivity. The first is scenic concern, which is based on the interaction between the level of government designating the outdoor recreation areas and the dominate type of experience users of these areas are seeking.

So, for the Coos Trail there is zero concern, because the GOVERNMENT isn't concerned?

The second attribute is potential viewer exposure, represented by population density, as shown in Figure 11 These two attributes are combined to create the map of potential scenic sensitivity in Figure 12

Potential viewer exposure is NOT totally dependent on population density. If it was the Appalachian Trail would be rated 0, since nobody lives on it?

0319-1

Thank you for your comment. The methods of the visual impact analysis are described in Section 2.4 of the Visual Impact Assessment Technical Report.

0319-1

Northern Pass EIS Website Comment Receipt

0320-1

Thank you for your comment.

Refers to Comment placed on Nov 8, 2015

ID: 8472

Date Entered: Nov 8, 2015

Source: Website

Topics: Purpose and Need, Alternatives

Organization:

Comment: I am strongly opposed to the Northern Pass project as proposed. I would like to see it fully buried for the following reasons:

1. Wildlife impact
2. Forest fragmentation
3. Visual impacts

I further do not believe it is a need project. Northern Pass has not demonstrated the need to my satisfaction. The project only benefits Hydro Quebec and Eversource. It is not a necessary for the ongoing reliability of the electrical grid.

Thank you for the opportunity to comment,

Doug Mayer
Randolph NH

0320-1

Northern Pass EIS Website Comment Receipt

Refers to Comment placed on Nov 10, 2015

ID: 8473

Date Entered: Nov 10, 2015

Source: Website

Topics: Purpose and Need, Cumulative Effects

Name: Orzeck

Organization:

Country: US

Comment: Because of this activity: "Baker is pushing the Massachusetts Legislature to pass a law that would initiate a new long-term contract bidding process, one that could bring considerably more hydro-power into Massachusetts from Canada."

I urge the DOE to not only consider the single line NPT is currently trying to get by you, but to consider what "significantly more" really means. You aren't approving one wire, you are essentially giving away New Hampshire to host MANY wires. And if you support their request for Public Utility status, then with the power of eminent domain they will continue to widen the ROW for many years to come to host those many wires.

How can this NOT have a negative effect?

Also if NPT wins the RFP bid, then the Eversource CUSTOMERS will be funding the line. If we will be paying for it, then what does it matter to Eversource how much more COMPLETE BURIAL will cost in the long run?

Mark Orzeck
Westport, MA and Stark, NH

0321-1

Thank you for your comment. DOE's purpose and need statement reflects the decision to be made by DOE. The purpose of, and need for, DOE's action is to determine whether or not to grant the requested Presidential permit for the Project at the international border crossing proposed in the amended Presidential permit application (latest amendment submitted August 2015). The New Hampshire Public Utilities Commission identifies and regulates public utilities in the state, DOE has no role in this process. The Project does not propose or rely upon the use of eminent domain to establish a project corridor.

0321-1

Northern Pass EIS Website Comment Receipt

0322-1

Thank you for your comment.

Refers to Comment placed on Nov 12, 2015

ID: 8474**Date Entered:** Nov 12, 2015**Source:** Website**Topics:** Alternatives**Name:** Dick Hanson**Organization:****Email:** rhanson14@yahoo.com**Mailing Address:** 84 Branch Turnpike #105**City:** Concord**State:** NH**Zip:** 03301**Country:** US**Comment:** The Northern Pass should only be allowed if it is completely buried. Towers take away the scenic beauty of New Hampshire

0322-1

Northern Pass EIS Website Comment Receipt

0323-1

Thank you for your comment.

Refers to Comment placed on Nov 12, 2015

ID: 8475

Date Entered: Nov 12, 2015

Source: Website

Topics: Design Criteria / Mitigation Measures

Organization:

Comment: This version of The Northern Pass design is still unacceptable. All transmission lines should be buried. A similar project just approved in Vermont calls for burying lines for the entire length of the project. This should be true for this project as well.

0323-1

Northern Pass EIS Website Comment Receipt

0324-1

Thank you for your comment.

Refers to Comment placed on Nov 12, 2015

ID: 8476**Date Entered:** Nov 12, 2015**Source:** Website**Topics:** Alternatives**Name:** Peter Devine**Organization:****Email:** foxrunpress@gmail.com**Mailing Address:** 147 Tomahawk Trail**City:** Bridgewater**State:** NH**Zip:** 03222**Country:** US

Comment: I feel strongly that, unless the ENTIRE project is buried underground, any benefits of Northern Pass will be far outweighed by the hideous scarring of our scenery, which is New Hampshire's most valuable resource. So, either bury it, or kill it! Thank you.

0324-1

Northern Pass EIS Website Comment Receipt

0325-1

Thank you for your comment.

Refers to Comment placed on Nov 12, 2015

ID: 8478**Date Entered:** Nov 12, 2015**Source:** Website**Topics:****Name:** Patricia Bahr**Organization:****Email:** PATBAHR533@AOL.COM**Mailing Address:** PO BOX 2104**City:** CAMPTON**State:** NH**Zip:** 03223**Country:** US

Comment: Although my immediate neighborhood is now in the area where the lines are proposed to be buried, I am not in favor of relying on a foreign country as an energy resource. This entire project has been full of misinformation, untruths and still proposes using outdated technology. The health effects, environmental disturbances, impact on New Hampshire's #1 industry - tourism, are still huge issues along with the fact that New Hampshire would just be a through-way to deliver power where it is needed, in neighboring states. Most of the job openings are highly technical and likely not to be filled by New Hampshire residents. IF this project were to be approved, it must be 100% buried, in the state highway ROW and there should be significant lease payments made to the State of NH to reduce all NH taxpayers' property tax rates. It should be required that a large percentage of the jobs be filled by NH residents, with training provided as needed. The inevitable decommissioning costs and management must never fall on State of NH or US Federal government as that would just be passed on to taxpayers.

0325-1

Northern Pass EIS Website Comment Receipt

0326-1

Thank you for your comment.

Refers to Comment placed on Nov 12, 2015

ID: 8479

Date Entered: Nov 12, 2015

Source: Website

Topics:

Organization:

Comment: The proposed route will pass my mother's home and will be so close that it will most likely be claimed in imminent domain. Please do not allow for this to go through. It is only going to provide a number of jobs during its building and then only a few for it's maintenance. It will ruin the landscape, true, but it will also ruin the livelihoods of people like my mother who has worked her whole life making barely over minimum wage to buy her home. New Hampshire does not need this energy. We have dams that are already built and it would be more beneficial for the State and the US Government to explore modern technology and incentives in making them more efficient. I say NO to northern pass.

Easton, NH resident

0326-1

Northern Pass EIS Website Comment Receipt

0327-1

Thank you for your comment.

Refers to Comment placed on Nov 12, 2015

ID: 8480

Date Entered: Nov 12, 2015

Source: Website

Topics: Vegetation

Name: Brian O'Donnell

Organization:

Title: Civil engineer

Email: bod8965@yahoo.com

Mailing Address: 132 south college avenue unit 2

City: Fort collins

State: CO

Comment: I like the idea of power and recognize it, but would rather salvage the grace and beauty of our state. I am a Civil engineer and recognize the need for energy but love my state to much to sacrifice.

0327-1

Northern Pass EIS Website Comment Receipt

0328-1

Thank you for your comment.

Refers to Comment placed on Nov 12, 2015

ID: 8481

Date Entered: Nov 12, 2015

Source: Website

Topics: Vegetation

Name: Brian O'Donnell

Organization:

Title: Civil engineer

Email: bod8965@yahoo.com

Mailing Address: 132 south college avenue unit 2

City: Fort collins

State: CO

Comment: I like the idea of power and recognize it, but would rather salvage the grace and beauty of our state. I am a Civil engineer and recognize the need for energy but love my state to much to sacrifice.

0328-1

Northern Pass EIS Website Comment Receipt

0329-1

Thank you for your comment.

Refers to Comment placed on Nov 13, 2015

ID: 8482

Date Entered: Nov 13, 2015

Source: Website

Topics: Wildlife, Viewshed/Scenery, Economic, Tourism, Quality of Life, Forest Service Lands, Environmental Justice

Organization: North Country Lodge and Cabins

Comment: I am against this project unless it is buried from start to finish. I have lived in Pittsburg, NH for 27 years and own a lodging establishment. These above ground towers will be an eyesore for myself, my family and our guests who in fact come here to get away from scenes like that. Northern Pass has the funds to bury the whole project but there bottom lone seems to be more important, they will profit while we loose something you cannot put a price tag on.

0329-1

0330-1
Thank you for your comment.

From: John Chiarella <John@lakesunapeelandscaping.com>
Sent: Thursday, November 12, 2015 2:35 PM
To: draftEIScomments@northernpasseis.us
Subject: Northern Pass continues to trouble me

With the new route, tower changes, and added buried lines, Northern Pass is now a better version of Bad for New Hampshire. I see no reason to impact a state that relies on tourism, and to unduly burden a population of residents who will bear the economic impact of diminished property values, and other impacts, in an effort that merely complicates our current utility structure for the benefit of one particular corporation. All of the supposed benefits for the state can be attained in much better and more positives ways by the upgrading or re-purposing of current infrastructure, which could be further updated to lessen what is the current impact that these structures have on our state. As a Selectman I always tried to think of all unintended consequences, and what the eventual outcome for whatever we undertook would be in 100 years, and how it would be of relevance and value to what our future needs for infrastructure most probably will be. This project does not meet the test for value on any level.

John Chiarella
Lake Sunapee Landscaping & Property Management
416 Nichols Hill Road
Springfield, NH 03284
john@lslpm.com
www.lakesunapeelandscaping.com
603-359-7959

0330-1

0331-1

Thank you for your comment.

From: My Info <tfortina66@yahoo.com>
Sent: Thursday, November 12, 2015 10:59 AM
To: info@northernpasseis.us
Subject: Re: DOE Northern Pass Transmission Line Project Supplement to the Draft EIS Release

The people of NH do not want this. It only benefits one electric company. Eversource formally known as PSNH. People of PSNH are still paying for Seabrook power plant. Why should the public be forced to accept another problem which will impact the state's wild life.

0331-1

On Nov 12, 2015 12:27 PM, Northern Pass EIS <info@northernpasseis.us> wrote:



Department of Energy

Washington, DC 20585

November 2015

Dear Sir/Madam:

The U.S. Department of Energy (DOE) has prepared a *Supplement to the Draft Northern Pass Transmission Line Project Environmental Impact Statement* (DOE/EIS-0463-S1) pursuant to the National Environmental Policy Act (NEPA) of 1969 as amended (42 U.S.C. 4321 *et seq.*), the Council on Environmental Quality (CEQ) NEPA regulations (40 CFR §§1500-1508), and the DOE NEPA implementing procedures (10 CFR §1021).

On August 31, 2015, the DOE received an amendment to the July 31, 2013, Presidential permit application for the Northern Pass Transmission Line Project proposed by Northern Pass, LLC which made changes to the proposed project. Specifically, the August 2015 amendment proposes to bury an additional 52 miles (84 km) of the transmission line, shift the international border crossing location by less than 100 feet (30 m), construct new transition stations (one in Bridgewater, NH, and one in Bethlehem, NH, to transition the line between overhead and underground), change the project size from 1,200 megawatts (MW) to 1,000 MW, and incorporate other design changes (e.g., change in converter technology and type of cable).

DOE invites public and agency comment on the Draft EIS and the Supplement to the Draft EIS. These documents are available online at <http://www.northernpasseis.us/>.

The public comment period to receive comments on the Draft EIS and the Supplement to the Draft EIS is extended to close 45 days after the U.S. Environmental Protection Agency publishes a notice of its availability in the *Federal Register*.

DOE will conduct public hearings on the dates identified below to receive comments on the Draft EIS and the Supplement to the Draft EIS in the following locations: Tuesday, December 15, 2015 in Whitefield, NH; Wednesday, December 16, 2015 in Concord, NH; and Thursday, December 17, 2015 in Plymouth, NH.

Hearing information will be announced in the *Federal Register* and in local media, and will be posted on the project website, <http://www.northernpasseis.us/>. The Draft EIS and the Supplement to the Draft EIS are available on this website and DOE's NEPA website at <http://energy.gov/nepa/environmental-impact-statements-eis>.

Printed hard copies and CD copies of the Supplement to the Draft EIS will be sent to those who requested to receive the Draft EIS in those formats. Printed hard copies and CD copies are also available for public review at locations specified here: http://media.northernpasseis.us/media/DraftEIS_Hard_Copy_Locations.pdf.

Comments on the Draft EIS and the Supplement to the Draft EIS can be submitted verbally during public hearings or in writing to Mr. Brian Mills at: Office of Electricity Delivery and Energy Reliability (OE-20), U.S. Department of Energy, 1000 Independence Avenue, SW, Washington, DC 20585; via e-mail to draftEIScomments@northernpasseis.us; or on the project website at <http://www.northernpasseis.us/>. Please mark envelopes and electronic mail subject lines as "Northern Pass Draft EIS Comments." Written comments must be received no later than 45 days after the notice of availability is published in the *Federal Register*. Comments submitted after that date will be considered to the extent practicable.

Sincerely,



Brian Mills
National Electricity Delivery Division,
Office of Electricity Delivery and Energy Reliability
U.S. Department of Energy

www.northernpasseis.us

Share this email:



[Manage](#) your preferences | [Opt out](#) using TrueRemove™
Got this as a forward? [Sign up](#) to receive our future emails.
View this email [online](#).

Northern Pass Transmission Line Project
P.O. Box 2729
Frisco, CO 80443-9901

This email was sent to fortina66@yahoo.com.
To continue receiving our emails, add us to your address book.

0332-1

Thank you for your comment.

From: Rick & Chris Weissbrod <rcw1946@myfairpoint.net>
Sent: Thursday, November 12, 2015 11:17 AM
To: draftEIScomments@northernpasseis.us
Subject: Northern Pass impact

To whom it may concern,

The negative impacts of the proposed northern pass project are many... involving negative impact on property values, tourist related businesses, environmental alteration, and increased maintenance cost being a few. The developer persists in lobbying and marketing efforts, costing millions instead of just burying the lines in entirety. NH does not need this power and yet is being asked to accept the impact of these overhead lines. Bury the line in its entirety or forget it.

Regards,
Rick Weissbrod

0332-1

0333-1

Thank you for your comment.

From: Sherry Pattillo <skymdwfarm@aol.com>
Sent: Thursday, November 12, 2015 11:00 AM
To: info@northernpasseis.us
Subject: Re: DOE Northern Pass Transmission Line Project Supplement to the Draft EIS Release

BURY NORTHERN PASS.!

Sherry Avery Pattillo
 Sky Meadow Farm

On Nov 12, 2015, at 12:27 PM, Northern Pass EIS <info@northernpasseis.us> wrote:

0333-1



Department of Energy

Washington, DC 20585

November 2015

Dear Sir/Madam:

The U.S. Department of Energy (DOE) has prepared a *Supplement to the Draft Northern Pass Transmission Line Project Environmental Impact Statement* (DOE/EIS-0463-S1) pursuant to the National Environmental Policy Act (NEPA) of 1969 as amended (42 U.S.C. 4321 *et seq.*), the Council on Environmental Quality (CEQ) NEPA regulations (40 CFR §§1500-1508), and the DOE NEPA implementing procedures (10 CFR §1021).

On August 31, 2015, the DOE received an amendment to the July 31, 2013, Presidential permit application for the Northern Pass Transmission Line Project proposed by Northern Pass, LLC which made changes to the proposed project. Specifically, the August 2015 amendment proposes to bury an additional 52 miles (84 km) of the transmission line, shift the international border crossing location by less than 100 feet (30 m), construct new transition stations (one in Bridgewater, NH, and one in Bethlehem, NH, to transition the line between overhead and underground), change the project size from 1,200 megawatts (MW) to 1,000 MW, and incorporate other design changes (e.g., change in converter technology and type of cable).

DOE invites public and agency comment on the Draft EIS and the Supplement to the Draft EIS. These documents are available online at <http://www.northernpasseis.us/>.

The public comment period to receive comments on the Draft EIS and the Supplement to the Draft EIS is extended to close 45 days after the U.S. Environmental Protection Agency publishes a notice of its availability in the *Federal Register*.

DOE will conduct public hearings on the dates identified below to receive comments on the Draft EIS and the Supplement to the Draft EIS in the following locations: Tuesday, December 15, 2015 in Whitefield, NH; Wednesday, December 16, 2015 in Concord, NH; and Thursday, December 17, 2015 in Plymouth, NH.

Hearing information will be announced in the *Federal Register* and in local media, and will be posted on the project website, <http://www.northermpasseis.us/>. The Draft EIS and the Supplement to the Draft EIS are available on this website and DOE's NEPA website at <http://energy.gov/nepa/environmental-impact-statements-eis>.

Printed hard copies and CD copies of the Supplement to the Draft EIS will be sent to those who requested to receive the Draft EIS in those formats. Printed hard copies and CD copies are also available for public review at locations specified here: http://media.northermpasseis.us/media/DraftEIS_Hard_Copy_Locations.pdf.

Comments on the Draft EIS and the Supplement to the Draft EIS can be submitted verbally during public hearings or in writing to Mr. Brian Mills at: Office of Electricity Delivery and Energy Reliability (OE-20), U.S. Department of Energy, 1000 Independence Avenue, SW, Washington, DC 20585; via e-mail to draftEIScomments@northermpasseis.us; or on the project website at <http://www.northermpasseis.us/>. Please mark envelopes and electronic mail subject lines as "Northern Pass Draft EIS Comments." Written comments must be received no later than 45 days after the notice of availability is published in the *Federal Register*. Comments submitted after that date will be considered to the extent practicable.

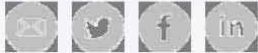
Sincerely,



Brian Mills
National Electricity Delivery Division,
Office of Electricity Delivery and Energy Reliability
U.S. Department of Energy

www.northermpasseis.us

Share this email:



[Manage](#) your preferences | [Opt out](#) using TrueRemove™
Got this as a forward? [Sign up](#) to receive our future emails.
View this email [online](#).

Northern Pass Transmission Line Project
P.O. Box 2729
Frisco, CO 80443-9901

This email was sent to skymdwfarm@aol.com.
To continue receiving our emails, add us to your address book.

Northern Pass EIS Website Comment Receipt

0334-1

Thank you for your comment.

Refers to Comment placed on Nov 13, 2015

ID: 8494

Date Entered: Nov 13, 2015

Source: Website

Topics:

Organization:

Comment: no....no...NO...

0334-1

Northern Pass EIS Website Comment Receipt

0335-1

Thank you for your comment.

Refers to Comment placed on Nov 13, 2015

ID: 8495

Date Entered: Nov 13, 2015

Source: Website

Topics:

Name: William Merrow

Organization:

Email: billmerrow@live.com

Mailing Address: 2394 2nd NH tpk

City: Deering

State: NH

Zip: 03244

Country: US

Comment: Bury the Damn thing, it might take these robber barons longer to make a profit but it will not destroy our state to benefit other states

0335-1

Northern Pass EIS Website Comment Receipt

0336-1

Thank you for your comment.

Refers to Comment placed on Nov 14, 2015

ID: 8497

Date Entered: Nov 14, 2015

Source: Website

Topics: Purpose and Need, Alternatives, Health and Safety, Vegetation, Wildlife, Viewshed/Scenery

Organization:

Comment: The Northern Pass project is not wanted in NH. People have been talking about the viewshed/scenery, wildlife, vegetation and the health and safety for 5 years. No one seems to be listening. Now The Northern Pass is "trying" to appease the people with alternative routes. That is not working either. There is no purpose for The Northern Pass in NH. We do not need the electricity. NH should not sacrifice our state for those who live south of our border. Overhead electric lines are obsolete. If The Northern Pass is going to pursue this project, all 192 miles of the project should be buried. Burial is the only alternative for NH. Let Eversource figure out the money that it would cost to underground the project. They have the money. This is not "The Northern Pass." It is The New Hampshire Pass. Please stop this project or make Eversource bury the entire project from Pittsburgh to Deerfield.

0336-1

Northern Pass EIS Website Comment Receipt

0337-1

Thank you for your comment.

Refers to Comment placed on Nov 14, 2015

ID: 8498**Date Entered:** Nov 14, 2015**Source:** Website**Topics:** Alternatives**Name:** Denise Eareckson**Organization:****Title:** Ms.**Email:** denise.eareckson@outlook.com**Mailing Address:** 23 Lombard Street**City:** Colebrook**State:** NH**Zip:** 03576**Country:** US

Comment: The stubborn refusal to bury the lines--ALL OF THEM--while spending millions on marketing and land purchases, is a waste of everyone's time and money, New Hampshire landowners/residents and Northeast Utilities investors alike. The money that (supposedly) would have been saved by overhead lines is surely insignificant by now after all the expense required for NU to fight against burial. This refusal to "give in" to pressure to bury the lines is probably more emotion-based now than economics-based.

Surrender, Northeast Utilities--you may not be able to save your pride, but you might be able to save your project, while we in Coos County could save our tourist economy. BURY THE NORTHERN PASS--ALL OF IT.

0337-1

Northern Pass EIS Website Comment Receipt

0338-1

Thank you for your comment.

Refers to Comment placed on Nov 14, 2015

ID: 8501

Date Entered: Nov 14, 2015

Source: Website

Topics:

Organization:

Comment: /Users/leeramaz/Desktop/JOHN H .pdf

Please Read.
Thanks,
Homer May at www.nhnorth.us

0338-1

Northern Pass EIS Website Comment Receipt

0339-1

Thank you for your comment.

Refers to Comment placed on Nov 14, 2015

ID: 8502**Date Entered:** Nov 14, 2015**Source:** Website**Topics:** Alternatives**Name:** Joe Drinon**Organization:****Email:** jdrinon@comcast.net**Mailing Address:** 4 Bow Center rd, unit D1**City:** Bow**State:** NH**Zip:** 03304**Country:** US

Comment: My preferred alternative is to bury the whole line. Northern Pass is a merchant project. In other words it is for profit and not a "reliability" project. Therefore we should make them spend what ever it takes to do it correctly and BURY it. The profits go to an out of State company and to the stockholders. BURY IT!!!!!!
Joe Drinon

0339-1

Northern Pass EIS Website Comment Receipt

0340-1

Thank you for your comment.

Refers to Comment placed on Nov 14, 2015

ID: 8503**Date Entered:** Nov 14, 2015**Source:** Website**Topics:****Name:** Anne Emerson**Organization:** Ms.**Title:** Ms.**Email:** efurnitr@comcast.net**Mailing Address:** 418 Shaker Road**City:** Canterbury**State:** NH**Zip:** 03224**Country:** US

Comment: I oppose Northern Pass for many reasons, mostly environmental. But for this comment I will just say that NP is a backward looking project when what we all need is thinking and planning ahead to do things in a completely different way. Our whole energy system needs to become local, with a new grid system and a complete change in the way we live. If we don't start NOW we'll find ourselves with a life no longer liveable on this Planet. Please start thinking outside the box and listen to the wants and needs of all the people. The profits of Hydro Quebec and Eversource above all other concerns are just a continuation of the status quo. Please consider this and show us that you are listening and understanding what we're saying.

0340-1

Northern Pass EIS Website Comment Receipt

0341-1

Thank you for your comment.

Refers to Comment placed on Nov 14, 2015**ID:** 8505**Date Entered:** Nov 14, 2015**Source:** Website**Topics:** Health and Safety, Private Property/Land Use**Name:** Corinne Pullen**Organization:** Windswept Farm, LLC**Title:** Owner**Email:** corinne.pullen@yahoo.com**Mailing Address:** 63 Old Schoolhouse Rd**City:** Canterbury**State:** NH**Zip:** 03224**Country:** US

Comment: The Northern Pass Transmission lines should ALL be buried if they are to be. We should not be using foreign derived energy which would destroy our views and property values causing health concerns.

0341-1

Northern Pass EIS Website Comment Receipt

0342-1

Thank you for your comment.

Refers to Comment placed on Nov 15, 2015

ID: 8506

Date Entered: Nov 15, 2015

Source: Website

Topics: Alternatives

Name: Sue Strasen

Organization:

Email: suestrasen@yahoo.com

Mailing Address: 46 Mason Road

City: Mont Vernon

State: NH

Zip: 03057

Country: US

Comment: All Northern Pass Lines need to be buried. No reason to have these towers in NH. Or pull from the VT line coming down through Lake Champlain.

0342-1

Northern Pass EIS Website Comment Receipt

0343-1

No comment was provided.

Refers to Comment placed on Nov 15, 2015

ID: 8509

Date Entered: Nov 15, 2015

Source: Website

Topics: Viewshed/Scenery, Water / Wetlands, Soils

Name: Carmen Duran

Organization:

Email: currads@yahoo.es

Mailing Address: P.O.BOX 283

City: Porstmouth

State: NH

Zip: 03802

Country: US

Comment:

| 0343-1

Northern Pass EIS Website Comment Receipt

0344-1

No comment was provided.

Refers to Comment placed on Nov 15, 2015

ID: 8510

Date Entered: Nov 15, 2015

Source: Website

Topics: Viewshed/Scenery, Water / Wetlands, Soils

Name: Carmen Duran

Organization:

Email: currads@yahoo.es

Mailing Address: P.O.BOX 283

City: Porstmouth

State: NH

Zip: 03802

Country: US

Comment:

| 0344-1

Northern Pass EIS Website Comment Receipt

0345-1

No comment was provided.

Refers to Comment placed on Nov 15, 2015

ID: 8511

Date Entered: Nov 15, 2015

Source: Website

Topics: Viewshed/Scenery, Water / Wetlands, Soils

Name: Carmen Duran

Organization:

Email: currads@yahoo.es

Mailing Address: P.O.BOX 283

City: Porstmouth

State: NH

Zip: 03802

Country: US

Comment:

| 0345-1

Northern Pass EIS Website Comment Receipt

0346-1

Thank you for your comment.

Refers to Comment placed on Nov 15, 2015

ID: 8513**Date Entered:** Nov 15, 2015**Source:** Website**Topics:** Viewshed/Scenery, Economic, Tourism, Quality of Life**Name:** Diana Curington**Organization:****Email:** c.curington@comcast.net**Mailing Address:** 540 Greenside Ave**City:** Portsmouth**State:** NH**Zip:** 03801**Country:** US

Comment: Northern Pass is a poor choice for our energy source. It despoils New Hampshire's greatest asset, our world-class scenic beauty. Our mountains, trees and vistas bring in millions of tourists every year, with millions of dollars fattening our \$ bottom line. We can't afford to trash our treasury by gashing our landscape with "War of the Worlds" structures looming over our splendid fall foliage season! That makes no sense! Our quality of life is worth fighting for-- That's the New Hampshire Way!

Diana Curington

0346-1

Northern Pass EIS Website Comment Receipt

0347-1
Thank you for your comment.

Refers to Comment placed on Nov 16, 2015

ID: 8514

Date Entered: Nov 16, 2015

Source: Website

Topics:

Organization:

Country: US

Comment:

| 0347-1

Northern Pass EIS Website Comment Receipt

0348-1
Thank you for your comment.

Refers to Comment placed on Nov 16, 2015

ID: 8515

Date Entered: Nov 16, 2015

Source: Website

Topics:

Organization:

Comment:

| 0348-1

Northern Pass EIS Website Comment Receipt

0349-1

Thank you for your comment.

Refers to Comment placed on Nov 16, 2015

ID: 8517**Date Entered:** Nov 16, 2015**Source:** Website**Topics:****Name:** VICTOR DEMEROTO**Organization:****Mailing Address:** 46 TREMONT ST.**City:** BOSCAWEN**State:** NH**Zip:** 03303**Country:** US

Comment: BURY THE LINE OR STOP THE NORTHERN PASS PROJECT
DO NOT SHEDULE OUR RESPONSE DEADLINES FO THE WEEK BEFOR CHRISTMAS!!!!
THAT IS UNFAIR AND UNREASONABLE

0349-1

From: [Mills, Brian](#)
To: [Travis Beck](#)
Subject: FW: Northern Pass DEIS
Date: Monday, November 16, 2015 7:00:24 AM

0350-1
Thank you for your comment.

comment

-----Original Message-----

From: Mary Bearor [<mailto:mcb802@aol.com>]
Sent: Saturday, November 14, 2015 10:18 AM
To: Mills, Brian <Brian.Mills@hq.doe.gov>
Subject: Northern Pass DEIS

I've been wondering lo these past 6 years, since this project reared it's ugly head...was "the fix" in..? It appears so.

Your office, which if I understand correctly, is tasked with protecting the environment, is allowing...nay, facilitating! this Big Money project to realize it's full profits, with no accountability for the environmental impact to northern New Hampshire. I guess I can only be grateful that the US Military fulfills it's mandate in a more conscientious manner than does the DOE.

RECONSIDER! Allow the residents of northern New Hampshire AT LEAST THE APPEARANCE of a hearing!

Mary Caprio Bearor

Sent from my iPad

0350-1

Northern Pass EIS Website Comment Receipt

0351-1

Thank you for your comment.

Refers to Comment placed on Nov 18, 2015

ID: 8527

Date Entered: Nov 18, 2015

Source: Website

Topics: Other

Organization:

Comment: I often don't feel compelled to publicly express my opinion. However, as a single mom who works in the healthcare field caring for the elderly I see (and have experienced firsthand) families struggling to make ends meet. New Hampshire has just about the highest energy costs in America. People shouldn't have to choose between paying for medical care or heating their homes; affording birthday and Christmas presents for their children or keeping their electricity on. It's time New Hampshire did something to help reduce the high cost of energy which has become such a burden on so many families. I believe Northern Pass is that solution. It will bring clean and reliable energy to our state, lower our energy bills, and help make some of those difficult budget decisions being made every day by good, hardworking, and honest people who may be struggling a little bit easier.

0351-1

Northern Pass EIS Website Comment Receipt

0352-1

Thank you for your comment.

Refers to Comment placed on Nov 19, 2015

ID: 8528

Date Entered: Nov 19, 2015

Source: Website

Topics: Other

Organization:

Comment: As the temperature drops, New Hampshire families reach for their thermostat to heat their homes. They are simultaneously cranking up the size of their energy bill , which results in less money families can spend on daily necessities. Less money they can allocate to enjoy the holidays or spend enjoying all that our beautiful state has to offer during the winter months, such as traveling up north to ski, snowmobile, or just relax at one of our many winter resorts.

Northern Pass will bring clean, low cost energy to our state all year round and help reduce energy costs for New Hampshire, allowing us to keep more of our hard earned money to spend elsewhere. Unfortunately this project has met opposition from activists who live in the northern part of our state who ironically would benefit the most from the project. I am a proud mother of four who loves to travel to the North Country with my children. We enjoy skiing, hiking, and visiting the various attractions and would love to spend more time there, especially during the winter months. I don't believe for a minute that a new power line is going to diminish our experience.

Northern Pass is burying lines in and around the White Mountain National Forest and lowering pole heights in other places. Forcing them to bury 100% of the line and add another billion dollars in construction costs makes no sense, since the vast majority of the line will now be underground or next to another power line in an existing right of way.

0352-1

Northern Pass EIS Website Comment Receipt

0353-1

Thank you for your comment.

Refers to Comment placed on Nov 20, 2015

ID: 8533

Date Entered: Nov 20, 2015

Source: Website

Topics: Health and Safety, Viewshed/Scenery, Recreation, Private Property/Land Use, Taxes, Historic/Cultural, Economic, Tourism, Quality of Life, Forest Service Lands

Organization: none --self

Comment: I oppose Alternative 7 as not enough of it is buried.

0353-1

Northern Pass EIS Website Comment Receipt

0354-1

Thank you for your comment.

Refers to Comment placed on Nov 20, 2015

ID: 8534**Date Entered:** Nov 20, 2015**Source:** Website**Topics:** Taxes, Economic, Tourism, Quality of Life, Air Quality**Name:** David Atkinson**Organization:** Citizen**Email:** david.atkinson.nh@gmail.com**Mailing Address:** 4 fletcher st**City:** Lancaster**State:** NH**Zip:** 03584**Country:** US

Comment: My comments are quite simple. I think that there is a very vocal minority of the residents of coos and other effected counties that have tried to monopolize the conversation as it relates to northern pass. I strongly believe that there is a net public "good" for the environment, for the residents of NH and Coos. The jobs (even temporary, are badly needed, the tax revenue will help replace that lost when the mills closed . The project owners have already done some good with assistance in cell service, the jobs creation fund, and the announced coos loop upgrades etc.

The addition of the power (clean power) will be essential to take the place of recently shuttered nuclear and coal fired plants in New England.

I know that many supporters in coos are afraid to show their support due to the fear from the orange minority

0354-1

0355-1
Thank you for your comment.

From: Eric Jones <legacyforest@gmail.com>
Sent: Sunday, November 15, 2015 8:31 AM
To: draftEIScomments@northernpasseis.us
Subject: Northern Pass Draft EIS Comments

Alternative 4a = complete burial / route 3 in the north & Interstate 93 in the rest / least environmental impacts / most tax dollars to towns and state / decrease in wholesale electricity costs of \$18 million within New Hampshire / reduce CO2 emissions by 7 percent annually across the region.

4a All The Way

--
Eric Jones
(941) 475-1039 (Winter)
(603) 989-5199 (Summer)

0355-1

Northern Pass EIS Website Comment Receipt

0356-1

Thank you for your comment.

Refers to Comment placed on Nov 22, 2015

ID: 8538**Date Entered:** Nov 22, 2015**Source:** Website**Topics:** Cumulative Effects, Design Criteria / Mitigation Measures**Name:** David Lloyd**Organization:** AMC hiker**Email:** davalloyd@yahoo.com**Country:** US

Comment: Importing hydropower from Canada is an environmentally and economically sound proposition, which I wholeheartedly support.

However, this can and should be done in an sound environmental and social manner, ie NOT recommended Alternative 2, but YES to alternatives 4a or 4b.

Congratulations on running such an open process. Let's make sure public choice is reflected in the final decision.

0356-1

Northern Pass EIS Website Comment Receipt

0357-1

Thank you for your comment.

Refers to Comment placed on Nov 24, 2015

ID: 8540**Date Entered:** Nov 24, 2015**Source:** Website**Topics:** Purpose and Need, Alternatives, Health and Safety, Private Property/Land Use, Taxes, Economic, Quality of Life, Other**Name:** Joseph Hollins**Organization:****Email:** J.Hollins@comcast.net**Mailing Address:** 2 Thomas Drive**City:** Salem**State:** NH**Zip:** 03079**Country:** US

Comment: Imagine this: lower electricity rates for residents and businesses not only in New Hampshire ,but throughout New England. \$3.8 Billion worth of community and economic benefits for the state of New Hampshire while also generating much needed employment opportunities for residents. As a new homeowner and tax payer, I am in support of Northern Pass' Forward NH Plan. Moving forward with this updated plan, we'll be providing significant new benefits to New Hampshire residents while also addressing the problem of pending closures of power plants, which is ultimately stretching our region's electrical capacity. While educating myself about the Forward NH Plan, I was very impressed with the Northern Pass' web site as it provided me with updated information about the plan, its benefits along with testimonials from businesses such as BAE Systems and Globe Manufacturing. This updated material reassured me that my support for this desperately needed project is a good choice for me.

It is truly unfortunate that while I researched both the supporting and opposing sides of the Northern Pass Project that I found many conflicting messages and outdated material from organizations that claim to be in opposition of the new Forward NH Plan. With this being said, I'd like to thank the Northern Pass Project for their open communications to our New Hampshire communities.

0357-1

Joseph Hollins
2 Thomas Drive
Salem, NH

Northern Pass EIS Website Comment Receipt

Refers to Comment placed on Nov 24, 2015

ID: 8541

Date Entered: Nov 24, 2015

Source: Website

Topics: Alternatives

Organization:

Comment: Northern Pass is out of line with any concerns of the residents of NH. The power is intended to be used by Southern New England.

The State of Connecticut requires that all new high power transmission lines be buried. There are apparently good reasons to bury lines; health, wildlife, property values, etc. There is absolutely no reason that the arguments for underground lines are valid in CT and not valid in NH!!!!!!!!!!!!!!

The responsibility to study the cost of underground lines has not been adhered to. There has been no study in Campton and I doubt there has been elsewhere. The company claims that the cost of the study is financially prohibitive, however the resultant health concerns surrounding above ground lines is not even addressed. What is the cost to NH residents in health care and property values??????????

The entire route of the lines should be underground just the same as is required in Connecticut.

I am 100% committed to fighting above ground lines on any portion of the route and especially where the lines cross my property. If Southern New England needs more power let them pay the cost of underground lines. There is no valid argument to burden the residents of NH with the negative aspects of above ground lines.

0358-1

Thank you for your comment. The commenter's concern with potential health effects of overhead transmission lines is noted. Section 4.1.4.2 in the EIS addresses impacts related to electric and magnetic fields. Additional discussion is provided in Appendix B of the Electric and Magnetic Fields Technical Report (included as Appendix B of the Public Health and Safety Technical Report).

Section 4.1.2 of the EIS addresses the anticipated impacts of the Project on adjacent properties, property values, and current/future tax assessments/payments. An exhaustive literature evaluation was undertaken to identify peer-reviewed studies which specifically assessed the potential impact of transmissions lines on adjacent real estate values. This information is presented in the Socioeconomic Technical Resource Report for the final EIS and in the EIS (Section 4.1.2). As a result of comments on the methodology and assumptions provided on the draft EIS, adjustments to the original analysis have now been updated in the final EIS. As these details are far too complex to be summarized within this response, the commenter is referred to both the Socioeconomic Technical Resource Report for the final EIS, and Section 4.1.2 of the final EIS.

0358-1

0359-1

Thank you for your comment.

From: o <bk1492@aol.com>
Sent: Friday, November 20, 2015 1:13 PM
To: INFO@NORTHERNPASSEIS.US; draftEIScomments@northernpasseis.us;
brian.mills@hq.doe.gov; megan.conklin@hq.doe.gov
Cc: info@pewtrusts.org; info@earthjustice.org; center@biologicaldiversity.org;
info@wildearthguardians.org
Subject: Fwd: public COMMENT on federal register

what i am particularly interested in is not having any public lands destroyed by rich corporate profiteers. they use our land without compunction and by paying nothing to use it. we are left with trying to save open space that then become their personel destroy zone. this transmisison line should be going over private land that is bought and paid for by the utility. WE NEED TO STOP LETTING THESE UTILITIES AND PROFITEERS DESTROY OUR PROTECTED LAND. WE NEED TO REVERE AND PROTECT AND PRESERVE NATURE. WE HAVE SO LITTLE OF IT LEFT. WE NEED TO STOP LETTING THESE RICH MEN DESTORY AND DESTROY AND DESTROY. WE DONT NEED TO LET THEM USE OUR NATIONAL LAND, WHICH IS OWNED BY 325 MILLION PEOPLE. WE DONT NEED TO LET THGESE RICH CORPORATIONS BRIBE OUR FAT CAT BUREAUCRATS SO THAT THEY FIND FOR THE RICH CORPORATIONS EVEY SINGEL TIME WITH NOTING EVER PROTECTED. I AM SICK OF SEEING THE DSTRUCTION BY PROFITEERS ALLOWED TO USE OUR NATIONAL LANDS.. CLIVE BUNDY USED AMERICAN LANDS FOR HIS DAMN CATTLE FOR 20 YEARS AND HAS NOT PAID ONE CENT AND THIS US GOVT IS LETTING HM GET AWAY WITH IT. THAT IS AN EXAMPLE. THROW THEM ALL OFF OUR NATIONAL LAND. IT BELONGS TO ALL OF US, NOT JUST SOME OF US. THIS COMMENT IS FOR THE PUBLIC RECORD. PLEASE RECEIPT. B KER
BK1492
@AOL.COM

0359-1

Federal Register Volume 80, Number 224 (Friday, November 20, 2015)]
[Notices]
[Pages 72716-72717]
From the Federal Register Online via the Government Publishing Office [www.gpo.gov]
[FR Doc No: 2015-29688]

DEPARTMENT OF ENERGY

[OE Docket No. PP-371]

Notice of Public Hearings for the Draft Northern Pass
Transmission Line Project Environmental Impact Statement and the
Supplement to the Draft EIS

AGENCY: Department of Energy.

ACTION: Notice of public hearings.

SUMMARY: The U.S. Department of Energy (DOE) announces public hearings to receive comments on the Draft EIS (DOE/EIS-0463) and the Supplement to the Draft EIS (DOE/EIS-0463 S1). The Draft EIS and the Supplement to the Draft EIS evaluate the potential environmental impacts of DOE's proposed Federal action of issuing a Presidential permit to Northern Pass LLC (the Applicant) to construct, operate, maintain, and connect a new electric transmission line across the U.S./Canada border in northern New Hampshire.

DATES: The public review period to receive comments on the Draft EIS and the Supplement to the Draft EIS closes on January 4, 2016. See the Public Participation section for more information about submitting comments.

DOE will conduct public hearings to receive oral and written comments on the draft EIS and the Supplement to the Draft EIS at the following locations commencing at the times identified:

Whitefield: Tuesday December 15, 2015, 1:00 p.m. and 6:00 p.m., Mountain View Grand Resort and Spa, Presidential Room, 101 Mountain View Road, Whitefield, NH 03598.

Concord: Wednesday December 16, 2015, 6:00 p.m., Grappone Conference Center, Granite Ballroom, 70 Constitution Avenue, Concord, NH 03301.

Plymouth: Thursday December 17, 2015, 6:00 p.m., Plymouth State University, Ice Arena Welcome Center, 129 NH Route 175A, Holderness, NH 03245.

ADDRESSES: Requests to pre-register to provide oral comments at a public hearing should be addressed to the Northern Pass EIS Team at this email address: info@northernpasseis.us.

Comments on the draft EIS and the Supplement to the Draft EIS can be submitted verbally during public hearings or in writing to Mr. Brian Mills at: Office of Electricity Delivery and Energy Reliability (OE-20), U.S. Department of Energy, 1000 Independence Avenue SW., Washington, DC 20585; via email to draftEIScomments@northernpasseis.us; by facsimile to (202) 586-8008; or through the project Web site at <http://www.northernpasseis.us/>.

FOR FURTHER INFORMATION CONTACT: Mr. Brian Mills at the addresses above, or at 202-586-8267.

SUPPLEMENTARY INFORMATION:

Public Participation

Comments: DOE invites interested Members of Congress, state and local governments, other Federal agencies, American Indian tribal governments, organizations, and members of the public to provide comments on the Draft EIS and the Supplement to the Draft EIS.

The public comment period on the Draft EIS started on July 31, 2015, with the publication in the Federal Register by the U.S.

Environmental Protection Agency of its Notice of Availability of the Draft EIS, and the public comment period on the Supplement began on November 20, 2015 with publication in the Federal Register by the U.S. Environmental Protection Agency of its Notice of Availability of the Supplement to the Draft EIS.

The public review period to receive comments on the Draft EIS and the Supplement to the Draft EIS closes on January 4, 2016. Please mark envelopes and electronic mail subject lines as ``NP Draft EIS Comments." Written comments should be submitted by January 4, 2016. Written and oral comments will be given equal weight and all comments received or postmarked by that date will be considered by DOE in preparing the Final EIS. Comments submitted (e.g., postmarked) after that date will be considered to the extent practicable.

Public Hearings: When requesting to pre-register to provide oral comments at a public hearing (see the DATES section for times and locations), please include your full name and email address, and specify the location you request to speak at. For the Whitefield, NH meeting, please indicate which meeting time you wish to speak at. Please state in the subject line, ``NP Draft EIS Public Hearing Speaker Request." Please submit your request by December 7, 2015; requests received by that date will be given priority in the speaking order. However, requests to speak may also be made at the hearing. The speaking order will be as follows: (1) Elected Officials; (2) Pre-registered speakers (order determined on a first-come, first-served basis); (3) Speakers registering at the meeting. Pre-registered speakers who have requested to speak at a specific time will be accommodated as possible.

[[Page 72717]]

Availability of the Draft EIS and the Supplement to the Draft EIS

The documents are available online at <http://www.northernpasseis.us/>. Copies of the draft EIS and the Supplement to the Draft EIS are also available at a number of public libraries and town halls (a list of locations is found here:

http://media.northernpasseis.us/media/DraftEIS_Hard_Copy_Locations.pdf.)

Printed copies of the documents may be obtained by contacting Mr. Mills at the above address.

Issued in Washington, DC, on November 13, 2015.

Meghan Conklin,

Deputy Assistant Secretary, National Electricity Delivery, Office of Electricity Delivery and Energy Reliability.

[FR Doc. 2015-29688 Filed 11-19-15; 8:45 am]

BILLING CODE 6450-01-P

From: debb1e2000@aol.com
Sent: Friday, November 20, 2015 1:04 PM
To: info@northernpasseis.us
Subject: Re: DOE Northern Pass Transmission Line Project Draft EIS Notice of Public Hearing

How does one make MORE comments without driving over an hour in winter weather??? Thank you for your attention to this matter.

Deb Freedman

-----Original Message-----

From: Northern Pass EIS <info@northernpasseis.us>
 To: debb1e2000 <debb1e2000@aol.com>
 Sent: Fri, Nov 20, 2015 2:01 pm
 Subject: DOE Northern Pass Transmission Line Project Draft EIS Notice of Public Hearing



U.S. Department of Energy
The Northern Pass Transmission Line Project
Draft Environmental Impact Statement and Supplement
Notice of Public Hearing

The U.S. Department of Energy (DOE) announces public hearings to receive comments on the Draft EIS (DOE/EIS-0463) and the Supplement to the Draft EIS (DOE/EIS-0463-S1). The Draft EIS and the Supplement to the Draft EIS evaluate the potential environmental impacts of DOE's proposed Federal action of issuing a Presidential permit to Northern Pass LLC (the Applicant) to construct, operate, maintain, and connect a new electric transmission line across the U.S./Canada border in northern New Hampshire.

The public comment period on the Draft EIS started on July 31, 2015, with the publication in the Federal Register by the U.S. Environmental Protection Agency of its Notice of Availability of the Draft EIS, and the public comment period on the Supplement began on November 20, 2015 with publication in the Federal Register by the U.S. Environmental Protection Agency of its Notice of Availability of the Supplement to the Draft EIS. The public review period to receive comments on the Draft EIS and the Supplement to the Draft EIS closes on January 4, 2016.

DOE invites interested Members of Congress, state and local governments, other Federal agencies, American Indian tribal governments, organizations, and members of the public to provide comments on the Draft EIS and the Supplement to the Draft EIS. DOE will conduct public hearings to receive oral and written comments on the Draft EIS and the Supplement to the Draft EIS at the following locations commencing at the times identified:

Whitefield: Tuesday, December 15, 2015, 1:00 p.m. and 6:00 p.m.
 Mountain View Grand Resort and Spa
 Presidential Room
 101 Mountain View Road
 Whitefield, NH 03598

0360-1

0360-1

Thank you for your comment. Four public hearings were held on the draft EIS: Monday, March 7, 2016 in Colebrook, NH; Wednesday, March 9, 2016 in Waterville Valley, NH; Thursday, March 10, 2016 in Concord, NH; and Friday, March 11, 2016 in Whitefield, NH. While comments were accepted at these public hearings, comments submitted via mail, email, and website submission were also accepted. A variety of methods were employed to publicize project information and public meetings, including the Federal Register, local newspapers, postal mailing addresses, email addresses, and the project EIS website. Extensive information about the EIS process has been made available through the project EIS website (<http://www.northernpasseis.us/>). Project documents, including the draft EIS, supplement to the draft EIS, and Resource Technical Reports were available in several formats, including digitally via the project EIS website, and hard copy by request and at public libraries. Printed hard copies and CD copies of the draft EIS and supplement to the draft EIS were sent to those who requested to receive documents in those formats. Printed hard copies and CD copies were made available for public review at 30 public libraries (http://media.northernpasseis.us/media/DraftEIS_Hard_Copy_Locations.pdf).

Concord: Wednesday, December 16, 2015, 6:00 p.m.
 Grappone Conference Center
 Granite Ballroom
 70 Constitution Avenue
 Concord, NH 03301

Plymouth: Thursday December 17, 2015, 6:00 p.m.
 Plymouth State University
 Ice Arena Welcome Center
 129 NH Route 175A
 Holderness, NH 03245

Please note that, in order to better accommodate the public interest in these hearings, two hearing sessions will be held in Whitefield on December 15, 2015. The format of all hearings, including the afternoon session in Whitefield, will be identical. A court reporter will be present to record comments for the record; interested individuals need only submit their oral comments once.

Requests to pre-register to provide oral comments at a public hearing should be addressed to the Northern Pass EIS Team at this email address: info@northernpasseis.us. When requesting to pre-register to provide oral comments at a public hearing, please include your full name and email address, and specify the location you request to speak at. For the Whitefield, NH meeting, please indicate which meeting time you wish to speak at. Please state in the subject line, "NP Draft EIS Public Hearing Speaker Request." Please submit your request by December 7, 2015; requests received by that date will be given priority in the speaking order. However, requests to speak may also be made at the hearing. The speaking order will be as follows: (1) Elected Officials; (2) Pre-registered speakers (order determined on a first-come, first-served basis); (3) Speakers registering at the meeting. Pre-registered speakers who have requested to speak at a specific time will be accommodated as possible. Note: if you requested to speak at the previously-scheduled public hearings in October 2015, please re-submit your request.

Each commenter will be allotted three (3) minutes. Individuals who have already spoken may have the opportunity to speak again when all other participants have made their first comments.

If assistance is needed to participate in any of the DOE hearings (e.g., qualified interpreter, computer-aided real-time transcription), please submit a request for auxiliary aids and services to DOE by December 4, 2015 by contacting Brian Mills as described below or e-mailing info@northernpasseis.us.

In addition to comments on the Draft EIS and Supplement to the Draft EIS, DOE is seeking public input with respect to the cultural and historic property information presented in this Draft EIS in accordance with its cultural and historic property review under Section 106 of the National Historic Preservation Act.

Comments on the Draft EIS, Supplement to the Draft EIS, and Section 106 can be submitted verbally during public hearings; on the project website (<http://www.northernpasseis.us/comment/>); in writing to Mr. Brian Mills at: Office of Electricity Delivery and Energy Reliability (OE-20), U.S. Department of Energy, 1000 Independence Avenue, SW, Washington, DC 20585; via e-mail to draftEIScomments@northernpasseis.us or Section106comments@northernpasseis.us; or by facsimile to (202) 586-8008. Please mark envelopes and electronic mail subject lines as "NP Draft EIS Comments" or "NP Section 106 Comments." Written comments should be submitted by January 4, 2016. Written and oral comments will be given equal weight and all comments received or postmarked by that date will be considered by DOE in preparing the Final EIS. Comments submitted (e.g., postmarked) after that date will be considered to the extent practicable.

The documents are available online at <http://www.northernpasseis.us/>. Copies of the Draft EIS and the Supplement to the Draft EIS are also available at a number of public libraries and town halls (a list of locations is found here: http://media.northernpasseis.us/media/DraftEIS_Hard_Copy_Locations.pdf). Printed copies of the documents may be obtained by contacting Mr. Mills at the above address.

For further information contact Mr. Brian Mills at the addresses above, or at (202) 586-8267.

Share this email:



[Manage](#) your preferences | [Opt out](#) using TrueRemove™
Got this as a forward? [Sign up](#) to receive our future emails.
View this email [online](#).

Northern Pass Transmission Line Project
P.O. Box 2729
Frisco, CO 80443-9901

This email was sent to debb1e2000@aol.com.
To continue receiving our emails, add us to your address book.

Northern Pass EIS Website Comment Receipt

0361-1

Thank you for your comment.

Refers to Comment placed on Nov 25, 2015

ID: 8545**Date Entered:** Nov 25, 2015**Source:** Website**Topics:** Purpose and Need**Name:** TERRORISM. Mosedale**Organization:** PSU**Email:** kenmosedale@roadrunner.com**Mailing Address:** Box 186**City:** Franconia**State:** NH**Zip:** 03580**Country:** US

Comment: Northern Pass is ECONOMIC TERRORISM..... pure and simple....NE Utilities, the owner of Eversource, part owner of Northern Pass will receive about \$250MILLION every year for return of capital,m 12.56% of cost of line.

This payment does NOT INCLUDE the lease payment for the old PSNH ROW, now owned by Eversource. In return for this money, that will go to NE stockholders, Northern Pass will destroy the North Country landscape, destroy many live hoods and destroy property values. That is Terrorism.

0361-1

From: Ron Willoughby <ronw@myfairpoint.net>
Sent: Sunday, November 22, 2015 7:41 AM
To: draftEIScomments@northernpasseis.us
Subject: NOrthern Pass

November 22,2015

Brian,

I urge you to reject Northern Pass unless it is 100% buried . I don't know what more proof you could possibly need to convince you of the fact that it IS economically feasible to bury the whole thing. It is being done with other transmission projects in New England, and it can be done with NP.

Most every town north of Plymouth has come out against it in the above ground format. In spite of NP attempts to establish a route through the North Country by paying landowners instant fortunes, they still do not have a complete route.

They also tried bribes to various organizations in the state. They promised all sorts of things, if only the groups would get on board. Many of them rejected the bribes, even though they needed the money badly.

The sentiment in northern NH (where the lines would be) is overwhelmingly negative. This has been shown over and over at every hearing that has been held in spite of NP trying to rally labor unions to show support for it by issuing false hopes and promises.

Public officials from the Governor, our US Senators and Representatives on down to town administrators have have publicly spoken out against it. It is not right that MA and CT can restrict the development of "clean" energy projects in their states, while defiling our landscape with cancer-causing lines that ruin the value of our land.

If you approve this line (and surely, with a 1200' ROW the future plans are to add more lines in that space) then there is no justice, and the whole public comment thing is nothing more than a charade. It will give a whole new meaning to "justice" is blind.

Ronald Willoughby
 2281 Lime Kiln Road
 North Haverhill, NH 03774

0362-1

Thank you for your comment. The EIS analyzes several full-burial alternatives in detail (Alternatives 3, 4a, 4b, and 4c). Additionally, neither the existing or proposed project corridor would exceed 200 feet in width.

0362-1

Northern Pass EIS Website Comment Receipt

0363-1

Thank you for your comment.

Refers to Comment placed on Nov 29, 2015

ID: 8548

Date Entered: Nov 29, 2015

Source: Website

Topics:

Name: Wendy Thibault

Organization:

Email: thibaultwendy@yahoo.com

State: NH

Zip: 03307

Country: US

Comment: Pass the. Northern pass!

| 0363-1

Northern Pass EIS Website Comment Receipt

0364-1

Thank you for your comment.

Refers to Comment placed on Nov 30, 2015

ID: 8549

Date Entered: Nov 30, 2015

Source: Website

Topics: Alternatives

Organization: Retired

Comment: Had Seabrook II been built as original plan, sadly this environmental interruption in our beautiful North Country would not be needed, no thanks to NH's two Governors of that time.

0364-1

Northern Pass EIS Website Comment Receipt

0365-1

Thank you for your comment.

Refers to Comment placed on Dec 1, 2015

ID: 8550

Date Entered: Dec 1, 2015

Source: Website

Topics: Purpose and Need

Organization: Self

Comment: Do it !

Northern Pass addresses two of the biggest problems facing our energy hungry country today. The Project brings truly clean energy to the heart of New England on a state of the art power distribution network. It can't help but displace less clean energy currently being distributed on an aging, overburdened, and less efficient transmission system.

0365-1

Northern Pass EIS Website Comment Receipt

Refers to Comment placed on Dec 1, 2015

ID: 8551

Date Entered: Dec 1, 2015

Source: Website

Topics:

Name: Lisy Meyers

Organization:

Email: billisy44@gmail.com

Mailing Address: 194 Kimball Lane

City: No. Haverhill

State: NH

Country: US

Comment: Northern Pass is planning to put Milepost 100 closer to the town of North Haverhill. Why aren't you staying in the right-of-way for NHPS ? The area of affected wildlife and environment is over 9,000 acres. It's unacceptable to tear up this much land. The project needs to go underground or back off completely.

0366-1

Thank you for your comment. Alternative 7 would utilize approximately 92 miles of the existing PSNH corridor as an overhead transmission line. The width of corridor needed to accommodate the proposed transmission line is detailed under each alternative in each geographic area, as are the resulting visual impacts and vegetation losses (see Sections 4.1.12, 4.2.12, 4.3.12, 4.4.12, 4.5.12, and 4.6.12 of the EIS). The width of the new transmission corridor in the Northern Section would be 120 feet for overhead transmission lines and 40 feet for underground cables (see Section 2.3.2.5 of the EIS). Additional information is provided in Section 3 of the Vegetation Resources Technical Report.

0366-1

Northern Pass EIS Website Comment Receipt

0372-1

Thank you for your comment.

Refers to Comment placed on Dec 3, 2015

ID: 8559

Date Entered: Dec 3, 2015

Source: Website

Topics: Purpose and Need, Alternatives, Wildlife, Viewshed/Scenery, Soils, Private Property/Land Use, Historic/Cultural, Tourism, Noise, Forest Service Lands, Design Criteria / Mitigation Measures, Environmental Justice

Organization:

Comment: Every other state that is pursuing this kind of project, they are able to do the whole project under ground not just one section. I feel as if we should be granted the same. I would rather not see higher poles than what we already have. Underground would make everyone happier even the ones that don't want the project at all. If it's barely visible then it's a win win. NH is a tourist attraction all together. Let's keep it that way.

0372-1

Northern Pass EIS Website Comment Receipt

0373-1

Thank you for your comment.

Refers to Comment placed on Dec 3, 2015

ID: 8560

Date Entered: Dec 3, 2015

Source: Website

Topics: Other

Organization:

Comment: Please continue to promote the Northern Pass.
We will need the energy it produces.
Please go ahead with building the Northern Pass.
Sooner the better.
Thank you

0373-1

Northern Pass EIS Website Comment Receipt

0374-1

Thank you for your comment.

Refers to Comment placed on Dec 3, 2015

ID: 8561**Date Entered:** Dec 3, 2015**Source:** Website**Topics:** Purpose and Need, Wildlife, Recreation, Taxes, Economic, Quality of Life**Name:** Carol Blanchette**Organization:****Email:** caroldblanchette@yahoo.com**Mailing Address:** 6 Pleasant St.**City:** Lancaster**State:** NH**Country:** US

Comment: We are in dire need of the proposed powerline. It is environmentally safe,(hydro power is a clean form of power). It will provide trails for recreation and wildlife. It will create jobs and help the economy increasing the tax base.. Without this powerline the quality of life could be affected as electricity could become unavailable as we know it now with the closing of other power plants.

0374-1

Northern Pass EIS Website Comment Receipt

0375-1

Thank you for your comment.

Refers to Comment placed on Dec 3, 2015

ID: 8562

Date Entered: Dec 3, 2015

Source: Website

Topics: Purpose and Need, Economic, Quality of Life

Organization:

Comment: My electric bill is sky high and the cost of Gas for heat has risen beyond reason. This is needed to address this issue. I am retired and my neighbor is semiretired and both of us are struggling to get by. My pension from the state is going down as of Jan 2016 and i do not know what i will do. Having gas and electric come down would really help a lot of people like us who are on fixed income. I hate having to decide if i should pay bills or get food. It is not fair,

0375-1

Northern Pass EIS Website Comment Receipt

0376-1
Thank you for your comment.

Refers to Comment placed on Dec 4, 2015

ID: 8563

Date Entered: Dec 4, 2015

Source: Website

Topics:

Organization: none

Comment:

| 0376-1

Northern Pass EIS Website Comment Receipt

0377-1

Thank you for your comment.

Refers to Comment placed on Dec 4, 2015

ID: 8564

Date Entered: Dec 4, 2015

Source: Website

Topics: Economic

Organization:

Comment: We need multiple sources for electricity in New Hampshire and the clean hydro from Quebec is ideally suited for this purpose. The high costs of energy must be addressed and to create more economic opportunities with lower more reliable energy sources.

0377-1

Northern Pass EIS Website Comment Receipt

0378-1

Thank you for your comment.

Refers to Comment placed on Dec 4, 2015

ID: 8565

Date Entered: Dec 4, 2015

Source: Website

Topics: Economic

Organization:

Comment: We need to get this project moving. NH is becoming one of the most unaffordable states to live in because of absurdly high energy costs. Let's do something to help the 'little people' for a change.

0378-1

Northern Pass EIS Website Comment Receipt

0379-1

Thank you for your comment.

Refers to Comment placed on Dec 4, 2015

ID: 8566**Date Entered:** Dec 4, 2015**Source:** Website**Topics:****Name:** raymond lovell**Organization:** local farmer oxbow garge owner**Title:** owner**Email:** raylovell807@yahoo.com**Mailing Address:** 5071 rt 102**City:** maidstone**State:** VT**Zip:** 05905**Country:** US

Comment: we need jobs in this area the electric power will make it cheaper to operate in this area of the country the start offs from this will be great. the other that was built in 1985 and goes through Vermont most people don't even know that is there these kind of things fit in in just a few years .and all the fighting about this coming through this area will seem not so important. I live in maidstone Vermont and have seen jobs leaving this area for the last 30 years so all young people have to leave for work iam behind thit 100 percent .please let it be built.

0379-1

Northern Pass EIS Website Comment Receipt

0381-1

Thank you for your comment.

Refers to Comment placed on Dec 4, 2015

ID: 8569

Date Entered: Dec 4, 2015

Source: Website

Topics: Other

Organization:

Comment: Northern Pass does a marvelous job balancing the need to bring more affordable energy to our state while simultaneously preserving the beautiful landscape of our North Country. The recent changes made to the Northern Pass project buries an additional 60 miles of power line and keeps the majority of the route in existing right of ways where lines already exist.

That's right, there are already power lines up north. If you listen to those opposing the project you might be left with the image that there are no power lines what-so-ever beyond the notch, but they are there. I've seen them, I've snowmobiled under them, and I've hunted all around them. I've even owned property up north which was thankfully powered by them.

Unfortunately there has been a lot of misinformation about this project and our elected officials have been hearing from a small, but vocal, group of individuals opposing this effort. I hope more people will learn more about the positive benefits Northern Pass will have on our state and on each of us individually as ratepayers and take the time to write your own letter or contact your elected official to let them know you support the project.

0381-1

Northern Pass EIS Website Comment Receipt

0382-1

Thank you for your comment.

Refers to Comment placed on Dec 4, 2015

ID: 8571**Date Entered:** Dec 4, 2015**Source:** Website**Topics:** Environmental Justice**Name:** GLENN KEELING**Organization:****Email:** bigroyal11@aim.com**Mailing Address:** 169 Lamplighter MHP**City:** NORTH CONWAY**State:** NH**Zip:** 03860**Country:** US**Comment:** Once the damage has been done, there is no undoing it. Short and trutfull.

| 0382-1

Northern Pass EIS Website Comment Receipt

0383-1

Thank you for your comment.

Refers to Comment placed on Dec 4, 2015

ID: 8572

Date Entered: Dec 4, 2015

Source: Website

Topics: Other

Name: Orzeck

Organization: Thanks for the deadline extension

Country: US

Comment: Thank you for extending the deadlines past the Holidays...

| 0383-1

0384-1
Thank you for your comment.

-----Original Message-----

From: nfrench@together.net [mailto:nfrench@together.net]

Sent: Friday, August 21, 2015 5:55 PM

To: FS-r9 whitemtn Info

Subject: WWW Mail: Northern Pass Draft EIS

I live only feet from where part of the 8 miles of Clarksville/Stewartstown line burial is proposed. I have a well downhill a few feet from their planned dig, so I read the sections on water resources, groundwater, etc. WMNF needs to scream loudly about what they say on wetlands.

| 0384-1

0389-1
Thank you for your comment.

Subject: FW: public COMMENT on federal register
Date: Monday, November 30, 2015 8:54:03 AM

From: o [mailto:bk1492@aol.com]
Sent: Friday, November 20, 2015 3:13 PM
To:
Cc:
Subject: Fwd: public COMMENT on federal register

what i am particularly interested in is not having any public lands destroyed by rich corporate profiteers. they use our land without compunction and by paying nothing to use it. we are left with trying to save open space that then become their personal destroy zone. this transmission line should be going over private land that is bought and paid for by the utility. WE NEED TO STOP LETTING THESE UTILITIES AND PROFITEERS DESTROY OUR PROTECTED LAND. WE NEED TO REVERE AND PROTECT AND PRESERVE NATURE. WE HAVE SO LITTLE OF IT LEFT. WE NEED TO STOP LETTING THESE RICH MEN DESTROY AND DESTROY AND DESTROY. WE DONT NEED TO LET THEM USE OUR NATIONAL LAND, WHICH IS OWNED BY 325 MILLION PEOPLE. WE DONT NEED TO LET THGESE RICH CORPORATIONS BRIBE OUR FAT CAT BUREAUCRATS SO THAT THEY FIND FOR THE RICH CORPORATIONS EVERY SINGLE TIME WITH NOTHING EVER PROTECTED. I AM SICK OF SEEING THE DSTRUCTION BY PROFITEERS ALLOWED TO USE OUR NATIONAL LANDS., CLIVE BUNDY USED AMERICAN LANDS FOR HIS DAMN CATTLE FOR 20 YEARS AND HAS NOT PAID ONE CENT AND THIS US GOVT IS LETTING HM GET AWAY WITH IT. THAT IS AN EXAMPLE. THROW THEM ALL OFF OUR NATIONAL LAND. IT BELONGS TO ALL OF US, NOT JUST SOME OF US. THIS COMMENT IS FOR THE PUBLIC RECORD. PLEASE RECEIPT. B KER
BK1492
@AOL.COM

0389-1

Federal Register Volume 80, Number 224 (Friday, November 20, 2015)]
[Notices]
[Pages 72716-72717]
From the Federal Register Online via the Government Publishing Office [www.gpo.gov]
[FR Doc No: 2015-29688]

DEPARTMENT OF ENERGY

[OE Docket No. PP-371]

Notice of Public Hearings for the Draft Northern Pass

Transmission Line Project Environmental Impact Statement and the Supplement to the Draft EIS

AGENCY: Department of Energy.

ACTION: Notice of public hearings.

SUMMARY: The U.S. Department of Energy (DOE) announces public hearings to receive comments on the Draft EIS (DOE/EIS-0463) and the Supplement to the Draft EIS (DOE/EIS-0463 S1). The Draft EIS and the Supplement to the Draft EIS evaluate the potential environmental impacts of DOE's proposed Federal action of issuing a Presidential permit to Northern Pass LLC (the Applicant) to construct, operate, maintain, and connect a new electric transmission line across the U.S./Canada border in northern New Hampshire.

DATES: The public review period to receive comments on the Draft EIS and the Supplement to the Draft EIS closes on January 4, 2016. See the Public Participation section for more information about submitting comments.

DOE will conduct public hearings to receive oral and written comments on the draft EIS and the Supplement to the Draft EIS at the following locations commencing at the times identified:

Whitefield: Tuesday December 15, 2015, 1:00 p.m. and 6:00 p.m., Mountain View Grand Resort and Spa, Presidential Room, 101 Mountain View Road, Whitefield, NH 03598.

Concord: Wednesday December 16, 2015, 6:00 p.m., Grappone Conference Center, Granite Ballroom, 70 Constitution Avenue, Concord, NH 03301.

Plymouth: Thursday December 17, 2015, 6:00 p.m., Plymouth State University, Ice Arena Welcome Center, 129 NH Route 175A, Holderness, NH 03245.

ADDRESSES: Requests to pre-register to provide oral comments at a public hearing should be addressed to the Northern Pass EIS Team at this email address: info@northernpasseis.us.

Comments on the draft EIS and the Supplement to the Draft EIS can be submitted verbally during public hearings or in writing to Mr. Brian Mills at: Office of Electricity Delivery and Energy Reliability (OE-20), U.S. Department of Energy, 1000 Independence Avenue SW., Washington, DC 20585; via email to draftEIScomments@northernpasseis.us; by facsimile to (202) 586-8008; or through the project Web site at <http://www.northernpasseis.us/>.

FOR FURTHER INFORMATION CONTACT: Mr. Brian Mills at the addresses above, or at 202-586-8267.

SUPPLEMENTARY INFORMATION:

Public Participation

Comments: DOE invites interested Members of Congress, state and local governments, other Federal agencies, American Indian tribal governments, organizations, and members of the public to provide comments on the Draft EIS and the Supplement to the Draft EIS.

The public comment period on the Draft EIS started on July 31, 2015, with the publication in the Federal Register by the U.S. Environmental Protection Agency of its Notice of Availability of the Draft EIS, and the public comment period on the Supplement began on November 20, 2015 with publication in the Federal Register by the U.S. Environmental Protection Agency of its Notice of Availability of the Supplement to the Draft EIS.

The public review period to receive comments on the Draft EIS and the Supplement to the Draft EIS closes on January 4, 2016. Please mark envelopes and electronic mail subject lines as ``NP Draft EIS Comments." Written comments should be submitted by January 4, 2016. Written and oral comments will be given equal weight and all comments received or postmarked by that date will be considered by DOE in preparing the Final EIS. Comments submitted (e.g., postmarked) after that date will be considered to the extent practicable.

Public Hearings: When requesting to pre-register to provide oral comments at a public hearing (see the DATES section for times and locations), please include your full name and email address, and specify the location you request to speak at. For the Whitefield, NH meeting, please indicate which meeting time you wish to speak at. Please state in the subject line, ``NP Draft EIS Public Hearing Speaker Request." Please submit your request by December 7, 2015; requests received by that date will be given priority in the speaking order. However, requests to speak may also be made at the hearing. The speaking order will be as follows: (1) Elected Officials; (2) Pre-registered speakers (order determined on a first-come, first-served basis); (3) Speakers registering at the meeting. Pre-registered speakers who have requested to speak at a specific time will be accommodated as possible.

[[Page 72717]]

Availability of the Draft EIS and the Supplement to the Draft EIS

The documents are available online at <http://www.northernpasseis.us/>. Copies of the draft EIS and the Supplement to the Draft EIS are also available at a number of public libraries and town halls (a list of locations is found here:

http://media.northernpasseis.us/media/DraftEIS_Hard_Copy_Locations.pdf.)

Printed copies of the documents may be obtained by contacting Mr. Mills at the above address.

Issued in Washington, DC, on November 13, 2015.
Meghan Conklin,

Deputy Assistant Secretary, National Electricity Delivery, Office of
Electricity Delivery and Energy Reliability.
[FR Doc. 2015-29688 Filed 11-19-15; 8:45 am]
BILLING CODE 6450-01-P

Northern Pass EIS Website Comment Receipt

0390-1

Thank you for your comment.

Refers to Comment placed on Dec 7, 2015

ID: 8583**Date Entered:** Dec 7, 2015**Source:** Website**Topics:** Health and Safety, Vegetation, Wildlife, Viewshed/Scenery, Water / Wetlands, Soils, Recreation, Private Property/Land Use, Historic/Cultural, Traffic, Tourism, Air Quality, Cumulative Effects, Noise, Forest Service Lands, Environmental Justice**Name:** Meryll Goldman**Organization:****Title:** Mrs.**Email:** diffdrmr@msn.com**Mailing Address:** 1781 Fowler River Road**City:** Alexandria**State:** NH**Country:** US**Comment:** I just have one thing to say...NO NORTHERN PASS!

| 0390-1

Northern Pass EIS Website Comment Receipt

0391-1

Thank you for your comment.

Refers to Comment placed on Dec 9, 2015

ID: 8584**Date Entered:** Dec 9, 2015**Source:** Website**Topics:** Wildlife, Water / Wetlands, Recreation, Private Property/Land Use, Tourism, Quality of Life, Forest Service Lands, Environmental Justice**Name:** Eric Stevenson**Organization:****Email:** estevenson@metrocast.net**State:** NH**Zip:** 03253**Country:** US

Comment: I am writing to voice my opposition to the proposed Northern Pass project. This projects threatens our way of life here in New Hampshire as it will surely have a negative impact on our unspoiled, natural landscape. There are certain places that should just be off-limits to development. We do not need this project and deserve better.

0391-1

Northern Pass EIS Website Comment Receipt

0392-1

Thank you for your comment.

Refers to Comment placed on Dec 9, 2015

ID: 8585

Date Entered: Dec 9, 2015

Source: Website

Topics: Recreation

Organization:

Comment: My husband and I have enjoyed visiting New Hampshire on many occasions to enjoy hiking in the mountains and along streams. We live in New York State and enjoy vacationing in New Hampshire. Please do not spoil the view by building through the forests.

0392-1

Northern Pass EIS Website Comment Receipt

0394-1

Thank you for your comment.

Refers to Comment placed on Dec 10, 2015

ID: 8587**Date Entered:** Dec 10, 2015**Source:** Website**Topics:** Alternatives**Name:** Fred DeCicco**Organization:****Email:** frednh92051@gmail.com**Mailing Address:** 28 Terrace Rd**City:** Thornton**State:** NH**Zip:** 03285-6426**Country:** US

Comment: people live and visit NH for its natural beauty. Giant high voltage transmission lines will destroy this. There are also health concerns with high voltage lines running close to homes and businesses. The only way we can even consider this project is if the entire route is buried and the construction areas are restored.

Thank you

Fred C DeCicco

28 Terrace Rd

Thornton NH 03285

0394-1

Northern Pass EIS Website Comment Receipt

0395-1

Thank you for your comment.

Refers to Comment placed on Dec 10, 2015

ID: 8588

Date Entered: Dec 10, 2015

Source: Website

Topics: Environmental Justice

Name: Tim D'Angelo

Organization:

Country: US

Comment: The United States should not profit or benefit from the dispossession of native peoples from their historical territories. The Quebec government forcefully removed members of the Cree Nation to create the infrastructure that provides the hydro-power for what could be the Northern Pass.

0395-1

Northern Pass EIS Website Comment Receipt

0396-1

Thank you for your comment.

Refers to Comment placed on Dec 10, 2015

ID: 8589

Date Entered: Dec 10, 2015

Source: Website

Topics: Environmental Justice

Organization:

Comment: The United States should not profit or benefit from the dispossession of native peoples from their historical territories. The Quebec government forcefully removed members of the Cree Nation to create the infrastructure that provides the hydro-power for what could be the Northern Pass.

0396-1

Northern Pass EIS Website Comment Receipt

0397-1

Thank you for your comment.

Refers to Comment placed on Dec 10, 2015

ID: 8590

Date Entered: Dec 10, 2015

Source: Website

Topics: Quality of Life

Organization:

Comment: This Northern Pass is unnecessary and will destroy our environment and Eco system. I am outraged as a landowner that these massive towers will pass by my house. What gives you the right to destroy NH or the quality of my life, including the value of my home that I worked so hard to obtain. We don't need this Northern Pass and never will. Vermont made them bury the whole transmission line. Bury the entire line or do not do it at all. If this happens pass happens I'm selling my house and moving out of this state. Do you care about us at all?? Are you getting paid under the table???? These towers which are massive will destroy the beauty of NH and our animals, water and life. As a nurse for 35 years, I have spent saving lives. No way should we have to bear having this pass that is unnecessary. The sad fact is that many people don't know this pass is coming past the lower communities where people are struggling to keep their homes. How despicable that you allow this to happen to NH and the people who own houses that are are taxed to death. I have tons of wildlife on my land in Chichester and this will destroy them and every little stream. It's takes morales, ethics and integrity to stand up to these giant companies and say NO. Try listening to the people in NH or putting yourselves in our shoes. NO NORTHERN PASS!!!!

0397-1

Northern Pass EIS Website Comment Receipt

0399-1

Thank you for your comment.

Refers to Comment placed on Dec 10, 2015

ID: 8591

Date Entered: Dec 10, 2015

Source: Website

Topics:

Organization:

Comment: The Northern Pass is in favor of corporations rather than maintaining the cultural heritage of our state.

0399-1

Northern Pass EIS Website Comment Receipt

0400-1

Thank you for your comment.

Refers to Comment placed on Dec 10, 2015

ID: 8592**Date Entered:** Dec 10, 2015**Source:** Website**Topics:** Tourism**Name:** C M Kipreotis**Organization:****Email:** mmkotis94@yahoo.com**Country:** US

Comment: NO. either improve on existing paths or NOT. NO to the northern pass project. NO. Simple. Clear. NO.

check on one? SERIOUSLY??? It effects many of the above for my family AND neighbors - quality of life, health, safety, animal wildlife, vegetation, tourism, an endless list. I DO NOT live in NH to see big business take over - not my lifestyle, not my views. GO to another state!!!!!!

0400-1

Northern Pass EIS Website Comment Receipt

0401-1

Thank you for your comment.

Refers to Comment placed on Dec 10, 2015

ID: 8593

Date Entered: Dec 10, 2015

Source: Website

Topics: Vegetation, Wildlife, Viewshed/Scenery, Water / Wetlands, Quality of Life

Organization:

Comment: If we who live here wanted to have this cancer in our midst we would live somewhere else. Many of us chose to live here because of the environmental beauty and serenity. For you to shove this eyesore into the North County is like driving a stake into our heart. You will kill this area.

0401-1

Northern Pass EIS Website Comment Receipt

0402-1

Thank you for your comment.

Refers to Comment placed on Dec 10, 2015

ID: 8594

Date Entered: Dec 10, 2015

Source: Website

Topics:

Organization: Self

Comment: I write to voice my opposition to the proposed Northern Pass project. This projects threatens our way of life in New Hampshire and will have a negative impact on our unspoiled, natural landscapes. These areas in New Hampshire should just be off-limits to the Northern Pass development as it will destroy our way of life and the legacy we leave our children. We do not need this project and we all deserve better..

0402-1

Northern Pass EIS Website Comment Receipt

0403-1

Thank you for your comment.

Refers to Comment placed on Dec 10, 2015

ID: 8595

Date Entered: Dec 10, 2015

Source: Website

Topics:

Organization:

Country: US

Comment:

| 0403-1

Northern Pass EIS Website Comment Receipt

0404-1

Thank you for your comment.

Refers to Comment placed on Dec 10, 2015

ID: 8596**Date Entered:** Dec 10, 2015**Source:** Website**Topics:****Name:** Laura Woodside**Organization:****Title:** Mrs.**Email:** laurawoodside4@gmail.com**Mailing Address:** 7531 S.W. 137 Street**City:** Palmetto Bay, Miami**State:** FL**Zip:** 33158**Country:** US

Comment: ;Northern Pass is bad for N.H. It will have negative environmental impact and also poses risks. Whitefield and New Hampshire do not need or want this - it will not benefit us or New Hampshire. I own property and a home in Whitefield, N.H. and spend part of the summer there.

0404-1

0405-1
Thank you for your comment.

From: Harry George <hgiii@hotmail.com>
Sent: Wednesday, December 09, 2015 3:34 PM
To: draftEIScomments@northernpasseis.us
Subject: Northern Pass
Attachments: ATT00001

To Whom It May Concern,

I am writing to express my objections to the construction and placement of overhead power lines and associated support towers associated with the proposed Northern Pass.

In June of 2015 I had the opportunity to visit and backpack the White Mountain area (Presidential Traverse). What a wonderful experience and absolutely stunning natural scenery! While I understand and appreciate that the proposed route now includes approximately 52 miles of buried transmission facilities in and around the White Mountain region, that still leaves 132 miles of overhead transmission lines and towers, which will irreparably mar the scenic landscape of the area and the beautiful state of New Hampshire.

I strongly encourage you to require that the entire transmission line be put underground, or use an existing, alternate route. Please understand that I am not against construction of new generating facilities or transmission facilities and infrastructure. Rather, I simply encourage that such new facilities be constructed with environmental considerations in mind, including, not negatively impacting the natural view-shed. The preservation efforts of the past have made the wonderful state of New Hampshire the attractive place it is today; please don't destroy that. Think long-term, preservation, and future generations, versus short-term financial benefits. Once gone, it will be gone forever.

Sincerely,
Harry George III
301 Upper College Terrace
Frederick, MD 21701
C: 312-543-8648

0405-1

0406-1

Thank you for your comment.

From: paulaweeman@comcast.net
Sent: Wednesday, December 09, 2015 4:55 PM
To: draftEIScomments@northernpasseis.us
Subject: Northern Pass

Brian Mills, Senior Planning Advisor
Office of Electricity Delivery and Energy Reliability (OE-20)
US Department of Energy

Dear Sir,

I am writing to you as a life long resident of New Hampshire.

I have grave concerns about the Northern Pass Project.

I have tried to stay informed since this came to public knowledge. Although I have no expert opinion from an environmental or forest perspective. I do feel that I am an expert lifelong resident of NH by choice.

We love this state and work hard to keep it in its natural beauty.

Any day, any season we are proud that thousands of people of all ages are outdoors enjoying what is most natural.

I plead with you not to interfere with the aesthetics, natural beauty and amazing environment of NH

We do not want the projected towers that would violate and alter what we have.

Please do not allow the projected destruction of not just 192 miles but the far reaching impact this would have.

Thank you for receiving this opinion.

Sincerely

Paula A. Weeman
3 Old Dover Road
Concord, NH 03301

0406-1

Northern Pass EIS Website Comment Receipt

0407-1

Thank you for your comment.

Refers to Comment placed on Dec 12, 2015

ID: 8601**Date Entered:** Dec 12, 2015**Source:** Website**Topics:** Forest Service Lands**Name:** Ellen Gagnon**Organization:****Email:** epq27@aol.com**Mailing Address:** Christmas mountain condos**City:** Bartlett**State:** NH**Country:** US

Comment: I am submitting a comment related to the northern pass application (draft and supplemental EIS) in New Hampshire and although my preference would be that it not be approved at all, I offer the following as input if that option does not exist.

As an avid hiker and owner of a second home in nh, I respectfully request that the entire transmission line be buried. The idea that the beauty, solitude and economic value of the white mountains and other areas of no will be spoiled by these outrageously large towers is unthinkable. Once constructed we can never go back and that would be a travesty for the state of nh and the thousands of us who go to the mountains to find peace and relief from the everyday stresses in life.
Thank you

0407-1

Northern Pass EIS Website Comment Receipt

0408-1

Thank you for your comment.

Refers to Comment placed on Dec 12, 2015

ID: 8602**Date Entered:** Dec 12, 2015**Source:** Website**Topics:** Purpose and Need**Name:** Gretchen Hesler**Organization:****Email:** uncas2@yahoo.com**Mailing Address:** P.O. Box 481**City:** Franconia**State:** NH**Zip:** 03580**Country:** US

Comment: The project hold absolutely no benefit for the North Country or NH as a whole. As a business owner and resident of the North Country, we have seen paper mills, manufacturing and other industry relocate our of our area. We have one industry that has been a constant....tourism! We all survive either directly or indirectly on tourism. Our land is not only breathtakingly beautiful, but incredibly unique. We have tourists from all over the world that come to stay/recreate in our untouched region. There is so much to lose. NH residents have spoken and our hope is that the government will listen. Corporations will always figure out a way to make a profit. The North Country is hanging in there, but will be truly devastated if the project goes through as planned and we lose our greatest resource.

0408-1

Northern Pass EIS Website Comment Receipt

0409-1

Thank you for your comment.

Refers to Comment placed on Dec 12, 2015

ID: 8603

Date Entered: Dec 12, 2015

Source: Website

Topics: Vegetation, Wildlife, Viewshed/Scenery, Recreation, Private Property/Land Use, Economic, Tourism, Quality of Life, Forest Service Lands, Environmental Justice

Organization:

Comment: I have been lucky enough to grow up in Northern NH since I was six. It is the place I call my home. Northern New Hampshire's supreme and unwavering beauty of it's nature and people captivates me every time I come back. I am at college now, but every break I look forward to being in the mountains again, mountains untouched by man-made structures, like Northern Pass. Northern Pass would be more debilitating for the north country than any of us can predict now. Northern NH holds some of the most hard-working people I've ever meant, and most of these people rely on the scenery and tourism for business. Bringing Northern Pass through the north country would be a direct stab to the economy and communities up north. I'm not sure how a company can do something with such obvious, known detrimental effects. I ask you to question what you're doing and how it can be done another way. Why should people of the North Country suffer for something that will never benefit them longterm? I ask you to reconsider. I ask you to really question what is more important, or at least how it can be done another way.

0409-1

Northern Pass EIS Website Comment Receipt

0410-1

Thank you for your comment.

Refers to Comment placed on Dec 13, 2015

ID: 8604

Date Entered: Dec 13, 2015

Source: Website

Topics: Purpose and Need, Environmental Justice

Organization:

Comment: I have read with some interest about Northern Pass. I am having a difficult time trying to sort out the reasons why I should support the project and am reluctant to endorse. I am very concerned about the environmental impact on our beautiful state. I am not totally convinced of the overall need for this but can see some of the reasons. The City of Franklin would certainly benefit economically which is great for them and very needed, but I do not see how the other towns will be affected in a positive way. I also would want to be assured that the project benefits those states that border Canada (ME, NH, VT) and not be prioritized to the other NE states since the project is going through NH. I would be even more concerned if the project goes through "my back yard". Lastly, I am not convinced short-term employment is beneficial for economic vitality beyond those couple of years. That said, I am really concerned about our energy consumption of oil and gas. Projects to significantly reduce that dependence is a good one and worthy of very serious considerations (and one which I generally support) but needs to consider the trade off for all of the factors outlined in the reports. Although cautious and perhaps a bit wary at this point, I will continue to look at all factors to make a final decision.
Thank you.

0410-1

Northern Pass EIS Website Comment Receipt

0412-1

Thank you for your comment.

Refers to Comment placed on Dec 15, 2015

ID: 8607

Date Entered: Dec 15, 2015

Source: Website

Topics: Health and Safety

Organization: Property owner

Comment: It is wrong to put high power lines near people and animals!The risks are well known.
Stop this now!

| 0412-1

Northern Pass EIS Website Comment Receipt

0413-1

Thank you for your comment.

Refers to Comment placed on Dec 15, 2015

ID: 8608

Date Entered: Dec 15, 2015

Source: Website

Topics: Health and Safety

Organization: Property owner

Comment: It is wrong to put high power lines near people and animals!The risks are well known.
Stop this now!

0413-1

Northern Pass EIS Website Comment Receipt

0414-1

Thank you for your comment.

Refers to Comment placed on Dec 15, 2015

ID: 8609**Date Entered:** Dec 15, 2015**Source:** Website**Topics:** Other**Name:** Laura Crockford**Organization:** Mrs.**Title:** Mrs.**Email:** smile_lrg1@yahoo.com**Mailing Address:** 112 Ayers Road**City:** Canterbury**State:** NH**Zip:** 03224**Country:** US

Comment: I am a concerned citizen of Canterbury, NH. I would like the Northern Pass Lines buried. It is more expensive in the short-term, yes, but well worth it to preserve the beauty of the land and to protect and conserve as much land as possible while minimizing potential health effects.

0414-1

Northern Pass EIS Website Comment Receipt

0415-1

Thank you for your comment.

Refers to Comment placed on Dec 16, 2015

ID: 8611**Date Entered:** Dec 16, 2015**Source:** Website**Topics:** Viewshed/Scenery, Economic, Tourism**Name:** Frederick W Martin**Organization:****Mailing Address:** 50 Village Ave**City:** Dedham**State:** MA**Zip:** 02026**Country:** US

Comment: This is a comment on the draft EIS Supplement of November 2015, by a landowner and seasonal resident in Coos County NH. . Alternative 7 as proposed in the supplement is inadequate, and therefore the DOE should choose the "No Build" option.

The tall towers of the above-ground portion of alternative 7 are a visual and scenic detriment to the tourist industry, which is the main economic support of northern New Hampshire. As mentioned in my comment #8367 or #150830, this is a \$4 billion business and the DOE should at least poll the inhabitants and businesses with a questionnaire, rather than saying the impact is "not quantifiable".

The no-build alternative may also force Northern Pass to consider a different entry point into the US, as advocated by the Society for Protection of NH Forests, whereby the entry point would be along the I-91 corridor into Vermont, and the Interstate highway corridor would be used all the way to Concord NH Such a route avoids unwanted crossing of private lands, and probably adds a rental fee for use of the fight-of-way of benefit to NH taxpayers.

This comment is intended for the Viewshed/Scenery, Economic, and Tourism categories, not the Soils category.

0415-1

Northern Pass EIS Website Comment Receipt

0416-1

Thank you for your comment.

Refers to Comment placed on Dec 18, 2015

ID: 8613

Date Entered: Dec 18, 2015

Source: Website

Topics: Viewshed/Scenery, Economic, Tourism

Organization:

Comment: PLEASE DO NOT RUIN OUR VIEWS AND TOURISM OVER THIS NORTHERN PASS PROJECT. PUT ALL THE CABLES UNDERGROUND AND PRESERVE OUR NH ECONOMY. PEOPLE WILL NOT WANT TO COME HERE AS MUCH IF OUR SCENERY IS RUINED. ALSO IT WILL FEEL DIFFERENT TO LIVE HERE. IT WILL BECOME MORE "BIG CITY" AND WE DO NOT WANT THAT FEELING. IF WE WANTED THAT WE WOULD MOVE TO BOSTON. PLEASE DON'T DO THIS. PUT EVERYTHING UNDERGROUND.

0416-1

0417-1
Thank you for your comment.

From: Eric Taylor <ericmt70@comcast.net>
Sent: Thursday, December 17, 2015 3:42 PM
To: PUC@PUC.nh.gov
Cc: Brian.Mills@hq.doe.gov; Info@northernpasseis.us; peter.roth@doj.nh.gov
Subject: Northern Pass

Northern Pass is a once-in-a-lifetime opportunity for NH workers and small businesses. The public relations battle has gone on long enough. Please end the delays and let the regulators decide this project on its merits.

Thank You,
Eric Taylor
ericmt70@comcast.net
South Weymouth

0417-1

0418-1
Thank you for your comment.

-----Original Message-----

From: Eric Taylor [<mailto:ericmt70@comcast.net>]

Sent: Thursday, December 17, 2015 5:42 PM

To: PUC@PUC.nh.gov

Cc: Mills, Brian <Brian.Mills@hq.doe.gov>; Info@northermpasseis.us; peter.roth@doj.nh.gov

Subject: Northern Pass

Northern Pass is a once-in-a-lifetime opportunity for NH workers and small businesses. The public relations battle has gone on long enough. Please end the delays and let the regulators decide this project on its merits.

Thank You,
Eric Taylor
ericmt70@comcast.net
South Weymouth

0418-1

0419-1

Thank you for your comment.

From: George Pettee <gpettee@verizon.net>
Sent: Sunday, December 13, 2015 12:05 PM
To: draftEIScomments@northernpasseis.us
Subject: Bury 100% Northern Pass Transmission Line

Brian Miller
Senior Planning Advisor
Office of Electricity Delivery and Energy
Reliability (QE-20)
US Dept. of Energy
1000 Independence Ave. SW
Washington, DC 20585

And

To Whom it may concern:

I would like to register my opinion in favor of complete burial of the entire length of the proposed new "Northern Pass" transmission lines.

I think paying more up front to preserve the natural beauty of our state, makes sense for multiple reasons. Burying the line is certainly more esthetic and conducive to perpetuating the desirable recreational and tourist aspect of the state(s). It will probably reduce maintenance costs of the new lines over time as well.

George Pettee / Pamela Tucker

Gilford, NH

0419-1

0420-1
Thank you for your comment.

From: Jackie Arzouian <arzouian@gmail.com>
Sent: Sunday, December 13, 2015 6:19 AM
To: draftEIScomments@northernpasseis.us
Subject: Northern Pass Proposed Route

I cannot believe this is still going on. When big money and big lobbyist are involved citizens are not heard or completely ignored.

WE DON'T WANT TOWERS in NH! Bury it! Plenty of precedence on this.

Jacqueline Arzouian

0420-1

0421-1
Thank you for your comment.

From: jessica pratt <jhandep@yahoo.com>
Sent: Saturday, December 12, 2015 10:27 AM
To: draftEIScomments@northernpasseis.us
Subject: We have spoken. Listen.

My name is Jessica Pratt. I am from 89 Vista View Dorchester, NH 03266.

I am opposed to the Northern Pass, as is our entire town. We, and the surrounding towns, listened to the speakers and read the literature. We voted. We all voted against the Northern Pass.

If our votes are ignored, then our rights are being ignored. Stomped on. History repeats itself. Again. As with the Native Americans. Greed and Big money override the rights of the People.

We, supposedly, live in a democracy. At least, that is what my 12 year old is learning. Those in positions of power are supposed to represent the People.

The People have spoken. Listen.

We do NOT want the Northern Pass in our State.

0421-1

0422-1

Thank you for your comment.

From: Kevin Field <member@local104.org>
Sent: Friday, December 18, 2015 6:56 AM
To: PUC@PUC.nh.gov
Cc: Brian.Mills@hq.doe.gov; Info@northernpasseis.us; peter.roth@doj.nh.gov
Subject: Northern Pass Hearings

I understand that the next round of Northern Pass hearings may be pushed back again. Whether you support or oppose the project, I hope you agree that it's time to move on with approval/ denial. Please let the process play out. New Hampshire workers have been in limbo for years.

Thank you very much.

Kevin Field
Center Barnstead

0422-1

0423-1
Thank you for your comment.

From: Larry Therrien <quitatime@aol.com>
Sent: Wednesday, December 16, 2015 2:03 PM
To: PUC@PUC.nh.gov
Cc: Brian.Mills@hq.doe.gov; info@northernpasseis.us; peter.roth@doj.nh.gov
Subject: Please stop the delays!

The debate over the Northern Pass has raged on for years with both sides making some great points. But the time has come to let the regulatory process play out. Please avoid any unnecessary delays and let the regulatory process take it's course.

Thank you.

Larry Therrien
Webster

0423-1

Northern Pass EIS Website Comment Receipt

0426-1

Thank you for your comment.

Refers to Comment placed on Dec 23, 2015

ID: 8628**Date Entered:** Dec 23, 2015**Source:** Website**Topics:****Name:** Lisy Meyers**Organization:****Email:** billisy44@gmail.com**Mailing Address:** 194 Kimball Lane**City:** North Haverhill**State:** NH**Country:** US

Comment: There is no purpose or need for bisecting the state of NH for antiquated overhead electrical lines. The cost to the environment, wildlife, property, and tourism is immense and irreversible. The HVDC project in NH must be stopped.

0426-1

Northern Pass EIS Website Comment Receipt

0428-1

Thank you for your comment.

Refers to Comment placed on Dec 28, 2015

ID: 8631**Date Entered:** Dec 28, 2015**Source:** Website**Topics:** Purpose and Need, Alternatives, Viewshed/Scenery, Economic, Tourism, Quality of Life

Organization:

Comment: Oversized transmission lines are not the answer to our energy needs. Private industry and government should be focused on community scale energy and energy conservation, not expansion. Eyesore Energy is only interested in profits for their shareholders and has no concern about the effect on property values, tourism, and the defacing of New Hampshire's landscape. I live in Vermont but have vacationed in New Hampshire to enjoy the beautiful, unspoiled mountain scenery. I have seen the results of a transmission project here in VT that has spoiled views with extra high towers and ruined the value of the land all the way along it's path. If new transmission lines are needed, they should not be taller than normal towers and should be lower than the tree line so that they are not so visible. The true solution is reducing our energy use so that existing infrastructure meets our needs.

0428-1

0429-1

Thank you for your comment.

12-11-15



stjude.org

Dear Brian Mills:

If studies have been done and it would not contaminate our soils and waters to bury the complete Northern Pass transmission lines then I feel they must be buried and, as a NH citizen, I would accept nothing less.

Those benefiting from the Northern Pass will have to make a larger investment to bury the lines but their profits will more than make up for it.

Nancy A. Johnson
46 Dockham Shore Rd.
Gilford, NH 03249
603-293-7914

0429-1

14 December 15

Brian Mills
Senior Planning Advisor
Office of Electricity Delivery and Energy
Washington, DC

Dear Mr. Mills:

Please record our strong opposition to any Northern Pass proposal for overhead transmission lines.

We are longterm rural New Hampshire residents, avid outdoors people and, as healthcare providers, well aware of the economic challenges in the northern half of our state. We believe that both the environmental and social welfare of New Hampshire are best served by burying the line.

We appreciate the complexity and difficulty of the decision process and the human efforts involved in it. Thank you for your hard work.

Sincerely,



Alex Medlicott, MD



Kristi Medill, CRNA

132 Indian Pond Road
Piermont, NH
03779.

0430-1

Thank you for your comment.

0430-1

Northern Pass EIS Website Comment Receipt

Refers to Comment placed on Dec 31, 2015

ID: 8639

Date Entered: Dec 31, 2015

Source: Website

Topics: Other

Name: Theresa Calder

Organization:

Email: tcald@metrocast.net

Mailing Address: Terry

City: Alton Bay

State: NH

Zip: 03810

Country: US

Comment: As a realtor, I know full well the impact power lines and visible towers have on property values. In the past I personally handled one property almost did not close because the lender would not lend the full amount due to the proximity of the house to power lines, the seller had to do a private mortgage for 50K to cover what the lender wouldn't, because the property value was diminished in value because of the unsightly and potentially hazardous to live by power lines.

People move to and live in New Hampshire, for rural , country living. They want to see trees, sky , fields and ponds, they will not pay as much for properties if they are encumbered by views of power lines or towers. It impinges on the senses, takes away from the setting. How are you going to compensate the people whose properties will be devalued by these structures??? How many of these home owners even realize this. If the lines are not buried the complete route I am totally against it. It changes the character of the state in a negative way.

Sincerely, Terry Calder

Farms & Barns RE

0431-1

Thank you for your comment. Section 4.1.2 of the EIS addresses the anticipated impacts of the Project on adjacent properties, property values, and current/future tax assessments/payments. An exhaustive literature evaluation was undertaken to identify peer-reviewed studies which specifically assessed the potential impact of transmissions lines on adjacent real estate values. This information is presented in the Socioeconomic Technical Resource Report for the final EIS and in the EIS (Section 4.1.2). As a result of comments on the methodology and assumptions provided on the draft EIS, adjustments to the original analysis have now been updated in the final EIS. As these details are far too complex to be summarized within this response, the commenter is referred to both the Socioeconomic Technical Resource Report for the final EIS, and Section 4.1.2 of the final EIS.

0431-1

Northern Pass EIS Website Comment Receipt

0432-1

Thank you for your comment.

Refers to Comment placed on Dec 31, 2015

ID: 8640**Date Entered:** Dec 31, 2015**Source:** Website**Topics:** Alternatives**Name:** Lotrlne Mcphillips**Organization:****Email:** lwhite303@gmail.com**Mailing Address:** 38 Granville way**City:** Basking ridge**State:** NJ**Zip:** 07920**Country:** US

Comment: I think that all the lines should be buried
It is not fair to assume that the scenery to the south of Bethlehem is any less scenic than the countryside to the south

Bury all the lines or forget the project

0432-1

0433-1
Thank you for your comment.

From: Lois <lhuis@comcast.net>
Sent: Thursday, November 12, 2015 4:16 PM
To: draftEIScomments@northernpasseis.us
Subject: Northern Pass Draft EIS Comments

The proposed Northern Pass above ground transmission lines and towers are Totally unacceptable. To desecrate our land based on a method of transmission that is no longer necessary, for energy that will be needed in the future in New England is setting us back and will just be something for future generations to clean up. New energy sources are under investigation in hundreds of universities and businesses. What will be available when New England really needs the extra power? Hydro-Quebec is showing profits in the billions of dollars annually. But clearly they do not have the concern nor incentive to preserve the New England landscape by burying the entire length of the line. Let us not enrich the already rich in Canada, to the detriment of New England citizens.

Lois Rodenhuis
1 Mill St., #3019
Dover, NH 03820
US

0433-1

0434-1

Thank you for your comment.

From: DOUG AND DALE <chyna@metrocast.net>
Sent: Thursday, November 12, 2015 1:57 PM
To: info@northernpasseis.us
Subject: Re: DOE Northern Pass Transmission Line Project Supplement to the Draft EIS Release

The Northern Pass will be the greatest thing we have in New England, and being in partnership with the great Canada. This is such a great thing that will be praised for another 100 years

| 0434-1

From: [Northern Pass EIS](#)
Sent: Thursday, November 12, 2015 9:27 AM
To: chyna@metrocast.net
Subject: DOE Northern Pass Transmission Line Project Supplement to the Draft EIS Release



Department of Energy

Washington, DC 20585

November 2015

Dear Sir/Madam:

The U.S. Department of Energy (DOE) has prepared a *Supplement to the Draft Northern Pass Transmission Line Project Environmental Impact Statement* (DOE/EIS-0463-S1) pursuant to the National Environmental Policy Act (NEPA) of 1969 as amended (42 U.S.C. 4321 *et seq.*), the Council on Environmental Quality (CEQ) NEPA regulations (40 CFR §§1500-1508), and the DOE NEPA implementing procedures (10 CFR §1021).

On August 31, 2015, the DOE received an amendment to the July 31, 2013, Presidential permit application for the Northern Pass Transmission Line Project proposed by Northern Pass, LLC which made changes to the proposed project. Specifically, the August 2015 amendment proposes to bury an additional 52 miles (84 km) of the transmission line, shift the international border crossing location by less than 100 feet (30 m), construct new transition stations (one in Bridgewater, NH, and one in Bethlehem, NH, to transition the line between overhead and underground), change the project size from 1,200 megawatts (MW) to 1,000 MW, and incorporate other design changes (e.g., change in converter technology and type of cable).

DOE invites public and agency comment on the Draft EIS and the Supplement to the Draft EIS. These documents are available online at <http://www.northernpasseis.us/>.

The public comment period to receive comments on the Draft EIS and the Supplement to the Draft EIS is extended to close 45 days after the U.S. Environmental Protection Agency publishes a notice of its availability in the *Federal Register*.

DOE will conduct public hearings on the dates identified below to receive comments on the Draft EIS and the Supplement to the Draft EIS in the following locations: Tuesday, December 15, 2015 in Whitefield, NH; Wednesday, December 16, 2015 in Concord, NH; and Thursday, December 17, 2015 in Plymouth, NH.

Hearing information will be announced in the *Federal Register* and in local media, and will be posted on the project website, <http://www.northermpasseis.us/>. The Draft EIS and the Supplement to the Draft EIS are available on this website and DOE's NEPA website at <http://energy.gov/nepa/environmental-impact-statements-eis>.

Printed hard copies and CD copies of the Supplement to the Draft EIS will be sent to those who requested to receive the Draft EIS in those formats. Printed hard copies and CD copies are also available for public review at locations specified here: http://media.northermpasseis.us/media/DraftEIS_Hard_Copy_Locations.pdf.

Comments on the Draft EIS and the Supplement to the Draft EIS can be submitted verbally during public hearings or in writing to Mr. Brian Mills at: Office of Electricity Delivery and Energy Reliability (OE-20), U.S. Department of Energy, 1000 Independence Avenue, SW, Washington, DC 20585; via e-mail to draftEIScomments@northermpasseis.us; or on the project website at <http://www.northermpasseis.us/>. Please mark envelopes and electronic mail subject lines as "Northern Pass Draft EIS Comments." Written comments must be received no later than 45 days after the notice of availability is published in the *Federal Register*. Comments submitted after that date will be considered to the extent practicable.

Sincerely,



Brian Mills
National Electricity Delivery Division,
Office of Electricity Delivery and Energy Reliability
U.S. Department of Energy

www.northermpasseis.us

Share this email:



[Manage](#) your preferences | [Opt out](#) using TrueRemove™
Got this as a forward? [Sign up](#) to receive our future emails.
View this email [online](#).

Northern Pass Transmission Line Project
P.O. Box 2729
Frisco, CO 80443-9901

This email was sent to chyna@metrocast.net.
To continue receiving our emails, add us to your address book.

0435-1

Thank you for your comment.

From: Beth Taylor <beth@graniteinv.com>
Sent: Thursday, November 12, 2015 11:27 AM
To: draftEIScomments@northernpasseis.us
Subject: Stop Northern Pass

Do not ruin our state for the residents or for the tourists, upon whom we rely for much of our income. Stop pandering to the demands PSNH, or Eversource (of aggravation). Either bury those lines or forbid the project! How would you like it running beside your house??

Beth Taylor | Client Service Associate | Granite Investment Advisors | 603.410.6132 | www.GraniteInv.com

[Recent Granite interviews](#): CNBC, Fox Business News, Bloomberg Radio, Reuters, Marketwatch, WSJ

This e-mail transmission may contain information that is proprietary, privileged and/or confidential and is intended exclusively for the person(s) to whom it is addressed. Any use, copying, retention or disclosure by any person other than the intended recipient or the intended recipient's designees is strictly prohibited. If you have received this message in error, please notify the sender immediately by return e-mail and delete all copies. E-mails (including attachments) may be retained, monitored, and/or reviewed by Granite Investment Advisors without further notice. E-mail may be produced at the request of regulators. The Company accepts no liability for any errors or omissions arising as a result of transmission.

You should carefully consider the investment objectives, potential risks, management fees, and charges and expenses of the Fund before investing. The Fund's prospectus contains this and other information about the Fund, and should be read carefully before investing. You may obtain a current copy of the Fund's prospectus by calling [1-888-442-9893](tel:1-888-442-9893). Past performance of the strategy/separately managed account is not indicative of future performance of the fund.

Distributed by Unified Financial Securities, Inc., 2960 North Meridian Street, Suite 300, Indianapolis, IN 46208. (Member FINRA)

0435-1

From: denisecarignan@twc.com
Sent: Thursday, November 12, 2015 3:13 PM
To: draftEIScomments@northernpasseis.us

Dear Sir, Please reconsider the towers on the property on Mountain River Road, condo area, several families live here and will be impacted by large towers. I had a look at the proposal and I want sure if they will be buried at this location off of 175 in Thorton. Although I would rather see solar power explored if this is going to happen I hope the lines will be buried in Thornton NH ? I am worried about long term results of power so close to people and wondering if cancer can result from this. Can you please assure me that they are buried at this location THANK YOU Ms Denise Carignan

0436-1

Thank you for your comment. Section 4.1.4.2 in the EIS addresses the potential for magnetic fields to cause cancer. Additional discussion is provided in Appendix B of the Electric and Magnetic Fields Technical Report (included as Appendix B of the Public Health and Safety Technical Report).

0436-1

From: Dan <ddonlon@comcast.net>
Sent: Friday, November 13, 2015 6:02 AM
To: info@northernpasseis.us
Subject: Re: DOE Northern Pass Transmission Line Project Supplement to the Draft EIS Release

Northern Pass, in regards to the proposed transition station in Bridgewater, are we in Bristol on Newfound Lake on West Shore Drive going to see this new station? We already see the dozen or more wind mill towers in Rumney so what more are they going to do to ruin this very pristine environment? Thank you, Dan & Sue Donlon, Bristol, NH

Sent from my iPad

On Nov 12, 2015, at 12:27 PM, Northern Pass EIS <info@northernpasseis.us> wrote:



Department of Energy

Washington, DC 20585

November 2015

Dear Sir/Madam:

The U.S. Department of Energy (DOE) has prepared a *Supplement to the Draft Northern Pass Transmission Line Project Environmental Impact Statement* (DOE/EIS-0463-S1) pursuant to the National Environmental Policy Act (NEPA) of 1969 as amended (42 U.S.C. 4321 *et seq.*), the Council on Environmental Quality (CEQ) NEPA regulations (40 CFR §§1500-1508), and the DOE NEPA implementing procedures (10 CFR §1021).

On August 31, 2015, the DOE received an amendment to the July 31, 2013, Presidential permit application for the Northern Pass Transmission Line Project proposed by Northern Pass, LLC which made changes to the proposed project. Specifically, the August 2015 amendment proposes to bury an additional 52 miles (84 km) of the transmission line, shift the international border crossing location by less than 100 feet (30 m), construct new transition stations (one in Bridgewater, NH, and one in Bethlehem, NH, to transition the line between overhead and underground), change the project size from 1,200 megawatts (MW) to 1,000 MW, and incorporate other design changes (e.g., change in converter technology and type of cable).

DOE invites public and agency comment on the Draft EIS and the Supplement to the Draft EIS. These documents are available online at <http://www.northernpasseis.us/>.

The public comment period to receive comments on the Draft EIS and the Supplement to the Draft EIS is extended to close 45 days after the U.S. Environmental Protection Agency publishes a notice of its availability in the *Federal Register*.

0437-1

Thank you for your comment. The rationale for Northern Pass' selection of Bridgewater as the location for a transition station is outside the scope of this EIS. Potential environmental impacts of this facility are analyzed in the EIS. The final EIS and Visual Impact Assessment Technical Report have been updated to fully incorporate an analysis of Alternative 7 - Proposed Action. The visibility analysis for Alternative 7 used the new design information, including structure locations and heights. Seven new Key Observation Point (KOP) simulations have been added and evaluated to ensure that a range of representative conditions is presented along the corridor for all alternatives. Transition stations are visible in KOP CL-1 (for Alternative 2) and BT-1 (for Alternative 7). All 73 simulations have also been updated in the final EIS to reflect all the alternatives. The two primary methods are intended to be independent and to provide different approaches. The GIS landscape assessment presents an overall view, while the Key Observation Point (KOP) simulations represent a "worst-case" view for a range of landscape conditions. As such, these two approaches are not intended to be "integrated". The final EIS and the Visual Impact Assessment Technical Report have the same organization. The KOP analysis is presented in Appendix E to the EIS and Appendices A and B of the Visual Impact Assessment Technical Report.

0437-1

DOE will conduct public hearings on the dates identified below to receive comments on the Draft EIS and the Supplement to the Draft EIS in the following locations: Tuesday, December 15, 2015 in Whitefield, NH; Wednesday, December 16, 2015 in Concord, NH; and Thursday, December 17, 2015 in Plymouth, NH.

Hearing information will be announced in the *Federal Register* and in local media, and will be posted on the project website, <http://www.northermpasseis.us/>. The Draft EIS and the Supplement to the Draft EIS are available on this website and DOE's NEPA website at <http://energy.gov/nepa/environmental-impact-statements-eis>.

Printed hard copies and CD copies of the Supplement to the Draft EIS will be sent to those who requested to receive the Draft EIS in those formats. Printed hard copies and CD copies are also available for public review at locations specified here: http://media.northermpasseis.us/media/DraftEIS_Hard_Copy_Locations.pdf.

Comments on the Draft EIS and the Supplement to the Draft EIS can be submitted verbally during public hearings or in writing to Mr. Brian Mills at: Office of Electricity Delivery and Energy Reliability (OE-20), U.S. Department of Energy, 1000 Independence Avenue, SW, Washington, DC 20585; via e-mail to draftEIScomments@northermpasseis.us; or on the project website at <http://www.northermpasseis.us/>. Please mark envelopes and electronic mail subject lines as "Northern Pass Draft EIS Comments." Written comments must be received no later than 45 days after the notice of availability is published in the *Federal Register*. Comments submitted after that date will be considered to the extent practicable.

Sincerely,



Brian Mills
National Electricity Delivery Division,
Office of Electricity Delivery and Energy Reliability
U.S. Department of Energy

www.northermpasseis.us

Share this email:



[Manage](#) your preferences | [Opt out](#) using TrueRemove™
Got this as a forward? [Sign up](#) to receive our future emails.
View this email [online](#).

Northern Pass Transmission Line Project
P.O. Box 2729
Frisco, CO 80443-9901

This email was sent to ddonlon@comcast.net.
To continue receiving our emails, add us to your address book.

TIM SAPPINGTON, AIA

TIM SAPPINGTON ARCHITECT

56 Boothman Lane • Randolph, New Hampshire 03593
603-466-5780 • sappingtondesign@ne.rr.com

12/10/15

Mr. Brian Mills
Senior Planning Advisor
Office of Electricity Delivery and Energy
Reliability (OE-20)
US Department of Energy
1000 Independence Avenue SW
Washington, DC 20585

Re: The Northern Pass Project, New Hampshire

Dear Mr. Mills:

I am an architect and landscape painter who has lived and worked full time in northern NH since moving up from Washington, DC in 1981. A very large part of our economy in the northern part of the state is heavily dependent on tourism; according to the last official report of which I am aware there are at least 10 million visitors to the White Mountains and Lakes region per year. While in the latest iteration of the proposed route, I understand Hydro Quebec has agreed to bury the utility line of the Northern Pass project in the White Mountain region, there are still millions of acres of beautiful scenery north of the mountains in the North Woods and along the Connecticut River including Lancaster and neighboring Jefferson (which has the most spectacular views of the Presidential Range from the west) and Errol on the Androscoggin River to the north. A little further south are the picturesque communities of Dalton, Whitefield and Bethlehem. The underground section of the line doesn't start until just before it leaves Bethlehem beginning in the towns of Sugar Hill and Landaff at the extreme west side of the White Mountains. South of the mountains the line re-emerges in the village of Bristol, a venerable community noted for its academy, and continuing south through such villages as Canterbury, the historic site of a Shaker community.

I feel this project (if the lines with their 155 ft. high towers were not to be completely buried) would have a devastating effect on large portions of the western and central parts of New Hampshire, where scenery is such an important heritage. I further understand the project is intended primarily to serve the states to the south. I appreciate their need for adequate power, but I would like to see those states first fully committed to alternative energy. New Hampshire has several commercial wind farms including one with 33 turbines in Dummer in which I served as an architect. Connecticut, for instance, has *no* wind farms save for one with just two turbines (out of six turbines planned) in Colebrook, CT which just came on line and in which my wife and I are invested.

While they may have made some concessions, I hope we can induce Hydro Quebec and Ever Source Power to act with the full sensitivity this project requires.

Sincerely yours,

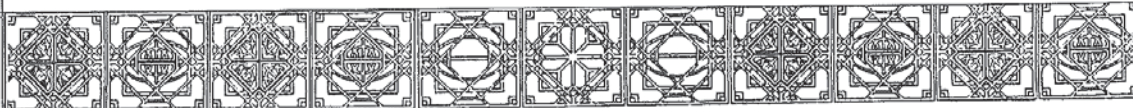
Tim Sappington
Tim Sappington AIA

Councilor, State Council of Historic Resources

0438-1

Thank you for your comment. The EIS evaluates several alternatives that include burial of the Project and/or specific segments of the Project. Each of these alternatives is evaluated and compared within the Socioeconomic section of the EIS (see Section 4.1.2). The EIS additionally analyzes the importance of tourism to New Hampshire, businesses, and the local and regional economy. The EIS (Section 3.1.2) and the Socioeconomic Technical Report describe the methods used to analyze potential impact to tourism for this EIS. As discussed in Section 4.1.2 of the EIS, no authoritative peer-reviewed studies were identified that address impacts to tourism as a result of the construction of transmission lines, and DOE did not attempt to develop such a study. No other resources were identified to allow for quantification of potential impacts. The EIS concludes that "while it is reasonable to conclude that the Project may have some level of impact on tourism within New Hampshire and on individual locations near the Project route, these are not quantifiable." Additionally, Section 4.1.1 addressed potential impacts to Visual Resources which may result.

0438-1



0440-1

Thank you for your comment.

Sandra L. Steigerwald
P.O. Box 1768
Port Angeles, WA 98362

December 19, 2015

Senior Planning Advisor
Office of Electricity Delivery and Energy
Reliability (OE-20)
U.S. Dept. of Energy
1000 Independence Ave. SW
Washington, DC 20585

Dear Mr. Mills:

New Hampshire is the state where I was born and raised. It is a small state and I am concerned about the impact that Northern Pass power line towers would have on the natural beauty, tourism and real estate values of New Hampshire. As a resident of Washington State I have seen first hand the scars of huge power lines as they march over mountains, skirt soccer fields and tower over residential areas.

Putting the cable lines underground would have the positive effects of providing necessary power, avoiding a negative economic impact and preserving the wonderful natural beauty of New Hampshire. Please support putting cables underground for the total distance of the power lines through New Hampshire.

Sincerely yours,



Sandra L. Steigerwald

0440-1

William & Anne-Marie Nichols
63 East St.
Littleton, NH 03561-4803

November 24, 2015

0441-1
Thank you for your comment.

SUBJECT; Northern Pass Draft EIS Comments

Mr. Brian Mills
Office of Electricity Delivery and Energy Reliability (OE-20)
U.S. Department of Energy
1000 Independence Ave., SW
Washington, DC 20585

November 24, 2015

Dear Mr. Mills;

It is beyond our understanding that a private company could consider creating a visual scar almost the entire length of our State of New Hampshire with an above ground route of high voltage transmission lines for their and their's only financial gain.

The *Draft*, NORTHERN PASS TRANSMISSION LINE PROJECT ENVIRONMENTAL IMPACT STATEMENT SUPPLEMENT, dated November 2015 clearly offers an alternative to the above ground route in number 4a and is the only alternative we find acceptable with a complete burial under public ways.

Please consider our desire in your decision.

We are yours truly,



William Nichols & Anne-Marie Nichols

0441-1

Northern Pass EIS Website Comment Receipt

Refers to Comment placed on Jan 29, 2016

ID: 8687

Date Entered: Jan 29, 2016

Source: Website

Topics: Wildlife, Water / Wetlands, Quality of Life, Other

Organization:

Comment: It seems to me based on the draft plan I have read on the Northern pass that only those who stand to benefit from building of this pass are the power companies. It seems the losers if this plan going through will be as follows; order doesn't denote the order of importance: animals losing more of their living environment, the view that would be destroyed for any poles above ground (keep in mind many states make their income based on travelers coming for visits of the view), underground cables (how does this impact the ground soil & water over time), looking at telephone polls isn't much of a view, there are always promises made to the customers that if this will be built that it will reduce the cost for the consumer which has never occurred (example sea rook impact on water, soil and air should the Northern Pass be installed.

If it's so needed, then let's install this in another area. Would you like this located in you're back yard?

0442-1

Thank you for your comment. Several sections in the EIS describe the requirements for and evaluate the impacts of installation of transmission towers and burial of the transmission line (e.g., Sections 2.3.2.5 and 4.1.14; see specific alternatives in each geographic area). Evaluation of specific depths and the resulting impacts and mitigation at specific locations would be addressed during subsequent federal and state permitting processes, as applicable. Updated analyses regarding potential impacts to drinking water supply can be found in Sections 2 and 3 of the Water Resources Technical Report. Potential impacts to drinking water sources from blasting impacts include potential spills or leaks to groundwater wells and are summarized in Section 4.1.13 in the final EIS, with more details provided thereafter under each alternative in each geographic section. The Applicant has committed to preparing a blasting plan to identify appropriate procedures and best management practices (BMPs) to protect groundwater and public and private water supply wells. Appendix H of the final EIS has been revised to reflect these changes. Should the project be approved, specific standards and methods required by the New Hampshire Department of Environmental Services would be established during the subsequent state permitting process.

0442-1

Northern Pass EIS Website Comment Receipt

0443-1

Thank you for your comment.

Refers to Comment placed on Feb 1, 2016

ID: 8689**Date Entered:** Feb 1, 2016**Source:** Website**Topics:** Alternatives, Health and Safety, Viewshed/Scenery, Economic, Traffic, National Security**Name:** Grant Ruggles**Organization:****Email:** grant.ruggles@gmail.com**Mailing Address:** POB 231**City:** Franconia**State:** NH**Zip:** 03580**Country:** US

Comment: I am writing to register my opposition to the lasted proposal submitted by Eversource for their Northern Pass Project. Opposition points have to do with 1) the fact that they are only proposing a partial burial of a small percentage of the line which would still create visual impacts along the majority of the route and 2) that burial of the line would be highly disruptive to the people and economies of the towns it is slated to be buried under and 3) overhead transmission lines are an outmoded technology that is increasingly vulnerable to environmental damage as the climate continues to deteriorate. It is my opinion is that they should either bury the entire line along their existing R.O.W. or abandon the project to make way for newer technologies to address the need. Thank You,
Grant Ruggles

0443-1

Northern Pass EIS Website Comment Receipt

0444-1

Thank you for your comment.

Refers to Comment placed on Feb 4, 2016

ID: 8692

Date Entered: Feb 4, 2016

Source: Website

Topics: Purpose and Need

Name: Chuck Lundberg

Organization: NH RESIDENT

Email: clundberg99@gmail.com

Mailing Address: 99 Ruonala Rd

City: Milford

State: NH

Zip: 03055

Country: US

Comment: Yes We Need Northern Pass. This generation needs to stand tall and suck it up so can leave something productive for the next generation. There is minimal environmental impact and its a better way to produce energy. YES TO NORTHERN PASS

0444-1

Northern Pass EIS Website Comment Receipt

0445-1

Thank you for your comment.

Refers to Comment placed on Feb 6, 2016

ID: 8695

Date Entered: Feb 6, 2016

Source: Website

Topics: Recreation

Organization:

Comment: We need to allow for the process to continue so we can expand our dependence of natural resources!

| 0445-1

Northern Pass EIS Website Comment Receipt

0446-1

Thank you for your comment.

Refers to Comment placed on Feb 6, 2016

ID: 8696

Date Entered: Feb 6, 2016

Source: Website

Topics:

Organization: CMW

Comment: Eversource is replacing American workers with foreigners so on that point I am opposing northern pass whereas before I was a supporter

0446-1

Northern Pass EIS Website Comment Receipt

0447-1

Thank you for your comment.

Refers to Comment placed on Feb 13, 2016

ID: 8698**Date Entered:** Feb 13, 2016**Source:** Website**Topics:** Alternatives**Name:** Ken Mosedale**Organization:** landowner**Email:** kenmosedale@roadrunner.com**Mailing Address:** Box 186**City:** Franconia**State:** NH**Zip:** 03580**Country:** US

Comment: Northern Pass is all about money. Economic gain is driving this Northern Pass project. Eversource, a public company based in Hartford, CT, formerly Northeast Utilities, formerly PSNH, owns Northern Pass. Annually, Eversource has almost \$8 Billion in revenue and almost \$1 Billion in profits. Their stock is traded on the NYSE. The owners of this company want Northern Pass to be built because HydroQuebec, a company owned by the Province of Quebec, will pay about \$250,000,000 a year, (\$250Million) to use the Northern Pass constructed utility infrastructure. Once this project is built Hydro Quebec will also pay a lease fee for the use of the Right of Way. HydroQuebec also paid the \$34,000,000, (\$34Million) for property that Northern Pass purchased in Coos County for the new section of the ROW. Lots of money flowing to Eversource,

A bit confusing, but the economics are very clear.....Millions of dollars will be transferred from HydroQuebec to Northern Pass. HydroQuebec needs to sell its surplus power, Eversource needs the Cash Flow and the added profits.

In order to get all this money from HydroQuebec, Northern Pass will build tall ugly metal towers in many parts of the North Country and parts of southern NH. These towers will change the landscape. The proposed plan also includes a 53 mile of section of buried lines in State highways 116, 112 and Route 3, from Bethlehem to Bristol. This part of the proposed plan will hinder highway traffic and impact many businesses, homes and people living along those roads. Imagine the mess on Main St

0447-1

Plymouth. This Northern Pass project will have a very negative impact on every part of the State where it is now proposed. The tourist economy will suffer, property values will be decreased, people's lives and jobs will be impacted and the natural beauty of NH will be changed, forever.

None of this has to happen. HydroQuebec can fund underground utility construction. Eversource can follow the recommendation of the Environmental Impact Statement, option 4a, and bury the lines along the Route 3 and the I-93 ROW. The NHDOT has recommended I-93 as "ENERGY INFRASTRUCTURE CORRIDOR ON TRANSPORTATION RIGHTS OF WAY" The Interstate 93 highway has a wide medium strip of land that could accept the underground utility lines and in Franconia Notch the lines could be buried next to the existing bike path. No tall towers, no decrease in property values, no destruction of beautiful views, no negative impact to tourism, and no harm done to people along the existing Eversource ROW.

Why does Eversource refuse to even discuss the I-93 option? Maybe they will lose income if they do not use their ROW? Why is using only part of their existing ROW so important to them?? Hopefully, the North Country will hear more from the NHDOT about the feasibility of using the I-93 corridor.

If Eversource moved to bury this project, everyone would win, including Eversource. It may be the only way this proposed Northern Pass project is approved. The financial gain of one company should not be a reason to terrorize the countryside and the residents on the North Country.

Northern Pass EIS Website Comment Receipt

0448-1

Thank you for your comment.

Refers to Comment placed on Feb 14, 2016

ID: 8699

Date Entered: Feb 14, 2016

Source: Website

Topics:

Name: Chuck Lundberg

Organization:

Email: clundberg99@gmail.com

City: Milford

State: NH

Country: US

Comment: We Need The northern pass and the people who are against it do not fully understand the benefits vs. the very minimal impact it will have on our landscape and environment. Its not about us, its too late for us, its about the generations to follow we need sustainable energy that will allow the future to survive. We are not ruining the landscape we will be long gone and to the next generation and those to follow they will not mind the way it looks they will be thankful we made the right choice.

0448-1

Northern Pass EIS Website Comment Receipt

0449-1

Thank you for your comment.

Refers to Comment placed on Feb 14, 2016

ID: 8700

Date Entered: Feb 14, 2016

Source: Website

Topics: Purpose and Need

Organization: private citizen

Comment:

| 0449-1

Northern Pass EIS Website Comment Receipt

0450-1

Thank you for your comment.

Refers to Comment placed on Feb 15, 2016

ID: 8701

Date Entered: Feb 15, 2016

Source: Website

Topics: Purpose and Need

Organization: private citizen

Comment: We need to get the Northern Pass going forward and approved!

| 0450-1

Northern Pass EIS Website Comment Receipt

0451-1

Thank you for your comment.

Refers to Comment placed on Feb 19, 2016

ID: 8703

Date Entered: Feb 19, 2016

Source: Website

Topics: Purpose and Need, Alternatives, Health and Safety, Vegetation

Organization:

Comment: BURY THE LINES. BURY THE LINES. BURY THE LINES. . The land being accessed for their LONG TERM PROFIT does not belong to them and the less expensive choice for this project DOES NOT MAKE IT RIGHT. Gas LINES are routinely BURIED and operate efficiently. If the Benefits are truly FOR THE PEOPLE, cost is Not the long term priority. BURY THE LINES ALL THE WAY !!!!

0451-1

Northern Pass EIS Website Comment Receipt

0452-1

Thank you for your comment.

Refers to Comment placed on Feb 26, 2016

ID: 8706**Date Entered:** Feb 26, 2016**Source:** Website**Topics:** Alternatives**Name:** Christopher Booth**Organization:****Email:** christopherbooth03224@yahoo.com**Mailing Address:** PO Box 32**City:** Concord**State:** NH**Zip:** 03302**Country:** US

Comment: There is nothing wrong with building a powerline, we certainly need to double the number of power lines we have, but it has to be 100% underground. Switzerland put all their powerlines underground decades ago and power failures are non-existent there. One tree took out most of the North East one year, and above ground power lines are just not worth the risk. As an alternative, a superconductor alternative should be included as an option. Even if it is not chosen, it is essential to include. Before the end of this century we can expect all of our high capacity power lines to be replaced with superconductor power lines.

0452-1

Northern Pass EIS Website Comment Receipt

0453-1

Thank you for your comment.

Refers to Comment placed on Feb 26, 2016

ID: 8707**Date Entered:** Feb 26, 2016**Source:** Website

Topics: Purpose and Need, Alternatives, Health and Safety, Vegetation, Wildlife, Viewshed/Scenery, Water / Wetlands, Soils, Recreation, Private Property/Land Use, Taxes, Historic/Cultural, Economic, Traffic, National Security, Tourism, Quality of Life, Air Quality, Cumulative Effects, Noise, Forest Service Lands, NEPA Process, Design Criteria / Mitigation Measures, Environmental Justice

Name: Charles Kinney**Organization:** 72 yr. resident**Email:** jinkc6@yahoo.com**Mailing Address:** Box 174**City:** Center Ossipee**State:** NH**Zip:** 03814**Country:** US

Comment: Clearly, everything about this project is corporate driven. Buying cheap energy and making money is the focus. Money that will not stay in NH. Though it might provide jobs, that would only be short term. I fail to understand why, in today's stagnant economy, promoting and financing alternative sources locally, (wind, solar, biomass) that would provide job opportunities for much longer. The environmental impact and the possibility of using eminent domain is, also, counter to New Hampshire's heritage. Another aspect that gets little attention is conservation. No one wants to give but it will become necessary. Big business has become top heavy in this country and it is high time we prune a few high branches

0453-1

Northern Pass EIS Website Comment Receipt

0454-1

Thank you for your comment.

Refers to Comment placed on Feb 29, 2016

ID: 8709**Date Entered:** Feb 29, 2016**Source:** Website**Topics:** Quality of Life**Name:** Elizabeth Gillette**Organization:****Email:** egillette62@yahoo.com**Mailing Address:** P O Box 22**Mailing Address:** 2 Thissell Road**City:** Ossipee**State:** NH**Zip:** 03864**Country:** US**Comment:** Dear Sirs and Madams:

I am a New Hampshire resident, and I am totally opposed to surface location of this "Northern Pass" transmission line/ vehicle on any publicly owned land as well as its location on any privately owned land insofar as the transmission line/vehicle would be visible from any publicly owned land. In short, if the utility company wishes to create a transmission line/vehicle within New Hampshire I am in favor of their burying the entire structure so that none of it is visible and that this subterranean structure be located only on private land. No public land should be used for any Northern Pass construction.

I understand such transmission line/vehicle already exists within the State of Vermont whereby power could be transmitted from north to south. I strongly support using this existing transmission corridor rather creating an entirely new one within New Hampshire.

Sincerely,

Elizabeth Gillette

0454-1

Northern Pass EIS Website Comment Receipt

0455-1

Thank you for your comment.

Refers to Comment placed on Mar 2, 2016

ID: 8710

Date Entered: Mar 2, 2016

Source: Website

Topics: Purpose and Need, Recreation, Tourism, Quality of Life, Design Criteria / Mitigation Measures

Name: Nancy and William DeCoursey

Organization:

Title: N.H. taxpayers and citizens

Email: nwdecoursey@ne.rr.com

Mailing Address: 1403 Presidential Hwy

City: Jefferson

State: NH

Zip: 03583

Country: US

Comment: The only way we would support construction of the Northern Pass would be if the ENTIRE line is buried out of sight. And covered up leaving the land as it was before construction.

0455-1

Northern Pass EIS Website Comment Receipt

Refers to Comment placed on Mar 3, 2016

ID: 8711

Date Entered: Mar 3, 2016

Source: Website

Topics: Health and Safety, Water / Wetlands, Private Property/Land Use, Economic, Quality of Life

Name: Nancy Dodge

Organization: private property owner

Title: Ms.

Email: nfrench@together.net

Mailing Address: 157 Creampoke Rd.

City: Stewartstown

State: NH

Zip: 03576

Country: US

Comment: I am a walking-disabled low-income senior. I live in my home of 30 years, on a portion of Creampoke Rd. in Stewartstown where they want to bury part of the Northern Pass line. This is not a deeded road. It is a road right-of-way with abutters on both sides owning to the center of the road, both above and below ground. My well is a few feet, and downhill, from where they want to dig/blast/bury the line. I have read the EIS, and know that my water supply is likely to be contaminated, disrupted, or destroyed. I am not physically or financially able to be driven out of my home by someone taking my water and private property for private, foreign, financial gain.

0456-1

Thank you for your comment. Potential impacts to drinking water sources from blasting impacts include potential spills or leaks to groundwater wells and are summarized in Section 4.1.13 in the EIS, with more details provided thereafter under each alternative in each geographic section. With the use of Applicant-Proposed Impact Avoidance and Minimization Measures (APMs), impacts to water resources from construction activities would be avoided or minimized (see Appendix H of the EIS). Updated analyses on potential impacts to drinking water supply can be found Sections 2 and 3 in the Water Resources Technical Report. Should the project be approved, more specific analyses or requirements are within the purview of subsequent state permitting processes and are beyond the scope of this document.

0456-1

Northern Pass EIS Website Comment Receipt

0457-1

Thank you for your comment.

Refers to Comment placed on Mar 4, 2016

ID: 8712

Date Entered: Mar 4, 2016

Source: Website

Topics:

Name: allie aaron

Organization:

Email: allieaaron21@gmail.com

Mailing Address: 314 streeter pond drive

City: sugar hill

State: NH

Zip: 03586

Country: US

Comment: NO NORTHERN PASS... WE DONT WANT IT ... KEEP IT OUT OF US !!!

| 0457-1

Northern Pass EIS Website Comment Receipt

0458-1

Thank you for your comment.

Refers to Comment placed on Mar 4, 2016

ID: 8713**Date Entered:** Mar 4, 2016**Source:** Website**Topics:** Economic**Name:** Gerald Poulin**Organization:****Email:** jpoulin3@icloud.com**Mailing Address:** 75 Hatcase Pond Road**City:** Eddington**State:** ME**Country:** US

Comment: I am in favor of the DOE granting a Presidential permit for the Northern Pass transmission line.

I believe the line will provide needed electricity and improve the reliability of power supply to the United States. This project has impacts on all U.S. citizens not just residents of New Hampshire.

Hydroelectric power is a low cost, low-carbon, continuous powersupply.

The construction phase of the project will provide a much needed economic boost to Northern New Hampshire.

0458-1

Northern Pass EIS Website Comment Receipt

0459-1

Thank you for your comment.

Refers to Comment placed on Mar 4, 2016

ID: 8714

Date Entered: Mar 4, 2016

Source: Website

Topics: Viewshed/Scenery

Organization:

Comment: My wife and I have lived on Creampoke Road for thirty-five years and currently have electrical wires and poles on our property which do nothing to help us enjoy sunsets and the scenic beauty of the area. It is hard to imagine what a three hundred swath cut from North to South with towers and cables will do to scenic New Hampshire. Northern Pass should not be allowed to continue with such a project. If the states below NH have to have more electrical power let them at least finance an under ground line.

0459-1

Northern Pass EIS Website Comment Receipt

0460-1

Thank you for your comment.

Refers to Comment placed on Mar 6, 2016

ID: 8717

Date Entered: Mar 6, 2016

Source: Website

Topics: Alternatives, Viewshed/Scenery

Organization:

Comment: I am opposed to the Northern Pass project as it is currently proposed. It would mar the scenic views that are an iconic part of New Hampshire's beauty and worth. If the lines cannot be buried over the entire length of the proposal, it should not be built.

0460-1

Northern Pass EIS Website Comment Receipt

0461-1

Thank you for your comment.

Refers to Comment placed on Mar 6, 2016

ID: 8718**Date Entered:** Mar 6, 2016**Source:** Website**Topics:** Quality of Life**Name:** David Farnum**Organization:****Email:** dfarnum92@gmail.com**Mailing Address:** 23 Bemis st**City:** berlin**State:** NH**Zip:** 03581**Country:** US

Comment: I do not want to look out my picture window at my camp on hall Stream Road and see the massive towers electricity that New Hampshire does not get or need . This is all about putting money in their pockets .

0461-1

Northern Pass EIS Website Comment Receipt

0462-1

Thank you for your comment.

Refers to Comment placed on Mar 6, 2016

ID: 8719

Date Entered: Mar 6, 2016

Source: Website

Topics:

Organization:

Comment: Please oppose to all Northern Pass plan. It will destroy the state of NH. One time is built we cannot get back what nature lost. USA is a great nation, let our country find the solution to our energy problems.

0462-1

Northern Pass EIS Website Comment Receipt

0463-1

Thank you for your comment.

Refers to Comment placed on Mar 6, 2016

ID: 8721**Date Entered:** Mar 6, 2016**Source:** Website**Topics:****Name:** Dan Kervick**Organization:****Email:** dkervick@comcast.net**Mailing Address:** 18 Rocky Point Drive**City:** Bow**State:** NH**Zip:** 03304**Country:** US**Comment:** In order to protect the natural environment of New Hampshire, I oppose the entire Northern Pass project.

0463-1

Northern Pass EIS Website Comment Receipt

0464-1

Thank you for your comment.

Refers to Comment placed on Mar 7, 2016

ID: 8725**Date Entered:** Mar 7, 2016**Source:** Website**Topics:** Purpose and Need**Name:** Tom Colgan**Organization:****Email:** acolgan3@gmail.com**Mailing Address:** 264 Orford Rd.**City:** Lyme**State:** NH**Zip:** 03768**Country:** US

Comment: Climate change is real and must be addressed. The greater good for our nation and the world is served by allowing renewable hydro power from Quebec to be imported via the Northern Pass project. This source of renewable base load power will allow us to close fossil fuel base load plants and lower CO2 emissions. I believe your review was thorough and has provided a reasoned assessment of the environmental impacts of this project.

0464-1

Northern Pass EIS Website Comment Receipt

0465-1

Thank you for your comment.

Refers to Comment placed on Mar 9, 2016

ID: 8731

Date Entered: Mar 9, 2016

Source: Website

Topics: Other

Name: Bernadette Fraser

Organization: NH resident and tax payer

Email: bdett.fraser@gmail.com

Mailing Address: 29 Park St

City: Woodsville

State: NH

Country: US

Comment: All items listed: why does this continue to be forced on tax paying citizens? The land owners and many other residents have voiced negatively on Northern Pass. Why do we have to keep hearing about it? Put this to sleep once and for all.

0465-1

Northern Pass EIS Website Comment Receipt

0466-1

Thank you for your comment.

Refers to Comment placed on Mar 11, 2016**ID:** 8733**Date Entered:** Mar 11, 2016**Source:** Website**Topics:** Private Property/Land Use, Quality of Life**Name:** Janet Ball**Organization:** Private citizen**Title:** Mrs.**Email:** sunburst3@comcast.net**Mailing Address:** 84 Branch Turnpike Unit 96**City:** Concord**State:** NH**Zip:** 03301**Country:** US

Comment: I live in McKennas Purchase in Concord, NH. If approved as it stands now, those towers will literally be in my backyard. If I could see an advantage for NH I met feel differently, but I don't. Please either rule that the project be canceled, or that the lines be buried. Thank you.

0466-1

Northern Pass EIS Website Comment Receipt

0467-1

Thank you for your comment.

Refers to Comment placed on Mar 15, 2016**ID:** 8739**Date Entered:** Mar 15, 2016**Source:** Website**Topics:** Alternatives, Viewshed/Scenery, Recreation**Name:** Dennis Card**Organization:****Email:** denjcard@aol.com**Mailing Address:** 50 Tenney Hill Rd**City:** Dunbarton**State:** NH**Country:** US**Comment:** I do pose the Northern Pass proposal because of it' potential negative impact on the landscape and wildlife of NH and the adverse effects it would have on recreation.

| 0467-1

Northern Pass EIS Website Comment Receipt

0470-1

Thank you for your comment.

Refers to Comment placed on Mar 16, 2016

ID: 8741

Date Entered: Mar 16, 2016

Source: Website

Topics: Vegetation

Organization: NH Big Trees Program

Comment: In the 1800's and again in the 1930's, New Hampshire experienced a level of human-induced destruction to the forests, landscape and natural habitats that is difficult now to fathom. Almost total deforestation, followed by natural destruction by the Hurricane of 1938, devastated and scarred New Hampshire's nature to a degree that it is only now in the early stages of recovery. While Eastern white pine was recorded to have reached dizzying heights of over 200 ft and hardwoods were measured to reach astonishing girths of over 22 feet in circumference, today's forests are primarily juvenile and quite small in comparison to the forests of the 1600's. I am a volunteer for the NH Big Trees Program, which is part of the UNH Cooperative Extension. The program seeks, locates and records the largest remaining trees of their species in the state of NH. Perhaps the "hunt" is so rewarding because there are so few genuinely elder, Goliath trees remaining in our state. When they are discovered, I personally find myself frozen in a state of deep respectful awe; I am beholding a rare artifact of New Hampshire when it was at its wildest and a representative of a time when humans and nature lived in balance.

The Northern Pass tower project threatens to bring yet another wave of destruction to our still-healing landscape; forests, land and habitats will be raped while they are just now developing stable, maturing ecosystems. This project, with its hundreds upon hundreds of 160 ft towers, is not welcome here. I am not interested in any energy source that will perpetrate further damage onto the forests and lands. The Northern Pass project is a form of destruction that will be a grave mistake for which there will be no recovery. While the farmers and clear-cutters of old abandoned the fields and saw mills, allowing the forests to retake the land, the Northern Pass will be a law-enforced bureaucracy that will beat back nature and will be here to stay. Not only will their towers maim, deface and harm nature itself, I am not convinced that these towers will not contribute to more dangerous electromagnetic assaults on people.

I say, "pass" on the Northern Pass project- I do not and will not support it and its harm to New Hampshire's forests, landscapes, habitats, wildlife and people.

Sincerely,

Laurie A. Couture

0470-1

Northern Pass EIS Website Comment Receipt

0471-1

Thank you for your comment.

Refers to Comment placed on Mar 17, 2016

ID: 8742**Date Entered:** Mar 17, 2016**Source:** Website**Topics:****Name:** Kenneth & Beth Dube**Organization:****Email:** nhdeepwoods@gmail.com**Mailing Address:** 71 French Hill Road**City:** Milan**State:** NH**Zip:** 03588**Country:** US

Comment: Our family is opposed to this project unless it is buried. We are outdoor folks and know this project as presented will have a negative effect on tourism,view/landscape,historic/cultural, and quality of life for all who live and work in this part of NH. The benefits of this project as presented are not accurate but just a product of big money salesmanship. The amount of savings presented (if indeed they are accurate) on the average electric bill are not worth giving up the soul of New Hampshire. The will of the majority of the people is being drowned out by the amount of money being spread around to buy this project. They have been deceptive in many ways. Case in point is the radio station that ran adds for them and got in trouble because the add didn't state who was paying for it as required by law! I have been to meetings and witnessed their legal team in action and find it hard to believe they didn't realized it and yet still let the adds play until caught. They also have stated that they are burying some in response to public input but this too is not accurate. I have a best friend who works for and is in the know about their original route through the National Forest and he said they were not going to grant what was needed to get through. One of the other buried sections goes through the wealthier towns of NH that are not in favor of this project at all. It certainly look to me like there were other reasons not the ones continually stated at meetings. The North country has been an economically challenged part of the state that is just on the cusp of becoming less so because of the National Wildlife Refuge, 1000 miles of Ride The Wilds, Jericho Park and it's natural beauty for hiking,water sports and so many other outdoor activities. If you feel this project is needed, please help us see it responsibly buried so it can remain the treasure it is. The way we did the highway through

0471-1

the Notch area shows that protecting what is part of the fabric of who we are is worth so much more than the almighty dollar. This project can be buried and they will still make money and we all know that is a fact.
Thank you for your time and consideration.

0471-1
Continued

0471-1 cont'd

Northern Pass EIS Website Comment Receipt

0472-1

Thank you for your comment.

Refers to Comment placed on Mar 17, 2016

ID: 8743**Date Entered:** Mar 17, 2016**Source:** Website**Topics:****Name:** Lisy Meyers**Organization:****Email:** billisy44@gmail.com**Mailing Address:** 194 Kimball Lane**City:** North Haverhill**State:** NH**Country:** US

Comment: The Hydro-Quebec Northern Pass Project has been overwhelmingly opposed in New Hampshire for 6 years. There are many reasons why residents & tourists do not want this project. It would be an ugly permanent scar down the center of the entire state. Overhead electrical lines are antiquated and take too much land and maintenance. New Hampshire does not need the energy and we know we are only being used as a conduit so the electricity can get down to southern New England. That would bring big money to Northern Pass but it would bring destruction & misery to New Hampshire & its people. Stop the project and recognize that it will never be acceptable here.

0472-1

Karen J J Spencer



161 Sullivan Road, Stark, NH 03582-6451
603-449-2337
kkspencerbwt161@gmail.com

0473-1
Thank you for your comment.

12/22/2015

Office of Electricity Delivery and Energy
Reliability (OE-20)
U.S. Department of Energy
1000 Independence Ave., SW
Washington, DC 20585

ATTENTION: Brian Mills, Senior Planning Advisor

Dear Mr. Mills:

This letter is in response to the Northern Pass Proposed Route. I have written letters and emails to the NHSC, the DOE, the DEIS, the NHPR and Burns Involvement Specialist, of Burns & McDonnell, regarding the impact of the Northern Pass Project and its' negative effect on us.

Stark, New Hampshire is our home base. We also own 26 acres of land that has the electric lines easement running along the northern property lines, along with 72 acres which is across the road, which borders along the Upper Ammonoosuc River. Route 110 travels through the landscape of Stark. These electric lines today are low enough to not be seen while driving on Route 110, for the lines are below the tree landscape. With the Northern Pass Project, these lines will be seen all through the Town of Stark's landscape. Both of these parcels of land are being developed into recreational areas, for Lodging, RV's, Snowmobiling and Tenting. This Northern Pass Project, if allowed to start will not only effect the View Shed and Scenery, of this private property and land use, it will also have an impact on recreation, historic, cultural issues, and most important tourism. Now, both these parcels have the views of Percy Peaks and Long Mountain, this beautiful landscape will be scared with the new height of these transmission towers. If this Northern Pass Project is allowed to start, these massive lines must be buried.

Yours truly

Karen J J Spencer

CC: Society for the Protection of New Hampshire Forests

0473-1



0474-1

Thank you for your comment.

Brian Mills
Senior Planning Advisor
Office of Electricity Delivery
& Energy Reliability (OE-20)
U.S. Dept of Energy
1000 Independence Ave, SW
Washington, DC 20585

Re: Response about NH Northern Pass

I am totally against the construction of the Northern Pass route as proposed in October 2015. The entire route MUST be underground in order to have less negative impact on the value of private property, the lives of wildlife, and the scenery of this beautiful state.

Sincerely,
Karen Grzelak

KAREN GRZELAK
9 SMILING HILL RD
FRANKLIN, NH 03235

0474-1

0475-1
Thank you for your comment.

Date: March 7, 2016
To: Brian Mills, US DOE
From: E. H. Roy
Subject: Northern Pass

Mr. Mills:

I am employed in the solar energy industry and am a resident of Stewartstown in Coos County, NH.

It is clear to me that the US requires no import of electrical energy from a foreign country – we have more than enough renewable resources within our own boundaries to provide for our electrical needs. We certainly have no need to condone (by importing the power) the ecological travesty being carried out in Quebec to generate the power. Nor do we need to condone the associated flooding of extensive native people's lands. Approving this project would make us dependent on this foreign energy source and would give others influence over the pricing of our electrical energy now and for decades to come.

Large-scale energy projects require substantial lead times to complete. If we want to position ourselves for future energy demands that our current infrastructure cannot provide for, it makes much more sense to begin truly renewable, green, climate-positive projects here in the US. We need to move to an electrical generation system that at least lessens and preferably reverses climate change. The methane generation associated with Hydro Quebec surely does not qualify.

As a resident of northern Coos County, I am fully aware that tourism is the only remaining industry in this area. People visit this area to experience a special place that has not been altered by the intense development up and down the rest of the eastern seaboard. People move here and retire here for the same reason. Why make it look like what those folks are trying to escape. For those of us who live here, this is our home – we have chosen it because of its characteristics and will not tolerate unnecessary changes to it like the Northern Pass project.

Therefore the only viable alternative is the No Build option. However, if you, as the Office of Electricity Delivery and Energy Reliability, disagree with me and think that this project is critical to energy reliability here in the US, you can certainly require that Northern Pass power lines be buried in its entirety along existing transportation corridors, as they have been in several other similar projects.

Sincerely,



E. H. Roy

278 Roy Road, Stewartstown, NH 03576

0475-1

0476-1
Thank you for your comment.

From: Maureen Rose <maureen@merrimactile.com>
Sent: Wednesday, February 03, 2016 9:10 AM
To: draftEIScomments@northernpasseis.us
Subject: DO NOT SUPPORT NORTHERN PASS

I do not support northern pass – we have destroyed enough of our environment already.
We need to protect and preserve the beauty of our lands for the wildlife and for people to enjoy!
DO NOT SUPPORT NORTHERN PASS.....

Maureen Rose

Derry, NH

0476-1

0477-1

Thank you for your comment.

From: Jean Public <jeanpublic1@yahoo.com>
Sent: Friday, January 29, 2016 2:27 PM
To: info@northernpasseis.us; SIERRA SIERRA CLUB; info@pewtrusts.org
Cc: info@peer.org; vicepresident@whitehouse.gov; americanvoices@mail.house.gov
Subject: Fwpublic comment on : DOE Northern Pass Transmission Line Project Draft EIS Notice of Public Hearing

I oppose granting this desecration of open space forest land. no more public utilities should be allowed to use open space for their electric lines. let them buy private land to destroy. let them find constructed land to put it on instead of destroying our natural open space pristine land that needs to be there for vegetation and wildlife and birds to live on in peace. I am sick and tired of these utilities getting away with this imposition for the last 200 years. its time for a change. use the land you already destroyed. WE CANNOT TOLERATE MORE PUBLIC UTILITIES USING OUR OPEN SPACE THAT WE TRIED TO SAVE FOR THEIR PROFITEERING. THIS NEEDS TO STOP. II AM DEFINITELY AGAINST THIS TRANSGRESSION. THIS COMMENT IS FOR THE PUBLIC RECORD. PLEASE RECEIPT. ,JEAN PUBLIEE JEANPUBLIC1@YAHOO.COM

0477-1

--- On Fri, 1/29/16, Northern Pass EIS <info@northernpasseis.us> wrote:

```
> From: Northern Pass EIS <info@northernpasseis.us>
> Subject: DOE Northern Pass Transmission Line Project Draft EIS Notice
> of Public Hearing
> To: jeanpublic1@yahoo.com
> Date: Friday, January 29, 2016, 2:00 PM
>
>
>
> @media screen and (max-width:480px){
> #yiv5336488977 html {
> }
> #yiv5336488977 * .filtered99999
> .yiv5336488977e2ma-content-block
> div.yiv5336488977e2ma-p-div, #yiv5336488977 * .filtered99999
> .yiv5336488977e2ma-combo-block div.yiv5336488977e2ma-p-div,
> #yiv5336488977 * .filtered99999
> .yiv5336488977e2ma-combo-content
> div.yiv5336488977e2ma-p-div, #yiv5336488977 * .filtered99999
> .yiv5336488977e2ma-content-block li, #yiv5336488977 *
> .filtered99999 .yiv5336488977e2ma-combo-block li,
> #yiv5336488977 * .filtered99999
> .yiv5336488977e2ma-combo-content li {
> font-size:15px !important;}
```

```

> #yiv5336488977 * .filtered99999 .yiv5336488977e2ma-holder table,
> #yiv5336488977 * .filtered99999 .yiv5336488977e2ma-holder table td {
> display:table;float:none;width:100%
> !important;padding-left:0 !important;padding-right:0 !important;}
> #yiv5336488977 * .filtered99999
> .yiv5336488977e2ma-single-column-layout table {
> float:none;margin:0 auto;}
> #yiv5336488977 * .filtered99999
> .yiv5336488977e2ma-unsubscribe span {
> font-size:12px !important;}
> #yiv5336488977 * .filtered99999 .yiv5336488977business_rsvp {
> font-size:12px !important;}
> #yiv5336488977 * .filtered99999 .yiv5336488977social-sharing {
> text-align:center;padding-bottom:10px;}
> #yiv5336488977 * .filtered99999
> .yiv5336488977e2ma-layout-column-content img, #yiv5336488977
> * .filtered99999 .yiv5336488977e2ma-single-column-layout
> img, #yiv5336488977 * .filtered99999
> .yiv5336488977e2ma-layout-column-sidebar img, #yiv5336488977
> * .filtered99999 .yiv5336488977e2ma-layout-column-sidebar-2
> img, #yiv5336488977 * .filtered99999
> .yiv5336488977e2ma-layout-column-sidebar-3 img {
> max-width:100%;height:auto;margin:0 auto;}
> #yiv5336488977 * .filtered99999 .yiv5336488977footer-social img {
> width:44px !important;height:43px !important;margin:0 auto;}
> #yiv5336488977 * .filtered99999 .yiv5336488977share-block {
> text-align:center;margin:0 auto !important;}
> #yiv5336488977 * .filtered99999 .yiv5336488977footer-text {
> text-align:center;}
> #yiv5336488977 * .filtered99999 .yiv5336488977mobile-width {
> width:100% !important;padding-left:10px;padding-right:10px;}
> #yiv5336488977 * .filtered99999
> .yiv5336488977mobile-width-nopad {
> width:100% !important;}
> #yiv5336488977 * .filtered99999 .yiv5336488977stack,
> #yiv5336488977 * .filtered99999
> .yiv5336488977e2ma-layout-column-content, #yiv5336488977 *
> .filtered99999 .yiv5336488977e2ma-layout-column-sidebar,
> #yiv5336488977 * .filtered99999
> .yiv5336488977e2ma-layout-column-sidebar-2, #yiv5336488977 *
> .filtered99999 .yiv5336488977e2ma-layout-column-sidebar-3 {
> display:block;width:100% !important;}
> #yiv5336488977 * .filtered99999 .yiv5336488977hide { display:none;}
> #yiv5336488977 * .filtered99999 .yiv5336488977center,
> #yiv5336488977 * .filtered99999 .yiv5336488977center img {
> text-align:center;margin:0 auto;}
> #yiv5336488977 * .filtered99999 .yiv5336488977scale img,
> #yiv5336488977 * .filtered99999 .yiv5336488977editable_image img {
> max-width:100%;height:auto;margin:0 auto;}
> #yiv5336488977 * .filtered99999 .yiv5336488977addpad { padding:10px
> !important;}
> #yiv5336488977 * .filtered99999 .yiv5336488977addpad-top {

```


- > The
- > U.S. Department of Energy (DOE) announces public hearings to
- > receive comments on the Draft EIS (DOE/EIS-0463). The
- > Draft EIS evaluates the potential environmental impacts of
- > DOE's proposed Federal action of issuing a Presidential
- > permit to Northern Pass LLC (the Applicant) to construct,
- > operate, maintain, and connect a new electric transmission
- > line across the U.S./Canada border in northern New
- > Hampshire. The public comment
- > period on the Draft EIS started on July 31, 2015, with the
- > publication in the Federal Register by the U.S.
- > Environmental Protection Agency of its Notice of
- > Availability of the Draft EIS. The public review period to
- > receive comments on the Draft EIS closes on April 4,
- > 2016.
- >
- > The U.S. Forest
- > Service – White Mountain National Forest (USFS), the U.S.
- > Army Corps of Engineers – New England District (USACE),
- > the U.S. Environmental Protection Agency – Region 1 (EPA),
- > and the New Hampshire Office of Energy and Planning (NHOEP)
- > are cooperating agencies in the preparation of the
- > EIS. On October 19,
- > 2015, Northern Pass Transmission, LLC and Public Service
- > Company of New Hampshire d/b/a Eversource Energy
- > (collectively Applicant), filed an Application for a
- > Certificate of Site and Facility (Application) seeking the
- > issuance of a Certificate of Site and Facility approving the
- > siting, construction, and operation of a 192-mile
- > transmission line and associated facilities with a capacity
- > rating of up to 1,090 MW from the Canadian border in
- > Pittsburg in Coos County to Deerfield in Rockingham County
- > (Project). New Hampshire law, R.S.A.162-H:10(I-c),
- > requires that within 90 days after acceptance of an
- > application for a certificate, that the New Hampshire Site
- > Evaluation Committee shall hold at least one public hearing
- > in each county where the proposed facility will be
- > located. For
- > the convenience of the public, DOE and the cooperating
- > agencies in conjunction with the New Hampshire SEC will
- > conduct public hearings to provide the public with
- > information on the proposed project and an opportunity for
- > the public to provide oral and written comments and to ask
- > questions concerning the project on March 7 and March 10,
- > 2016 at the following locations:
- >
- >
- >
- >
- >
- > Colebrook:
- > Monday, March 7, 2016, 5:00

- > p.m.Colebrook Elementary
- > School27
- > Dumont StreetColebrook, NH
- >
- > Concord: Thursday, March 10,
- > 2016, 5:00 p.m.Grappone Conference
- > Center, Granite Ballroom70
- > Constitution AvenueConcord,
- > NH
- >
- > Additional
- > public hearings will be conducted by the DOE and the
- > cooperating agencies to receive oral and written comments on
- > the Draft EIS at the following locations commencing at the
- > times identified:Waterville:
- > Wednesday, March 9, 2016, 5:00
- > p.m.Waterville
- > Valley Conference and Event Center, Waterville Room56 Packards RoadWaterville Valley, NH
- >
- >
- >
- > Whitefield: Friday, March 11,
- > 2016, 5:00 p.m.Mountain View Grand Resort and
- > Spa, Presidential
- > Room101 Mountain View
- > RoadWhitefield,
- > NH
- >
- >
- >
- > The
- > New Hampshire Site Evaluation Committee will also publish a
- > public notice not less than 14 days before the hearings to
- > be held on March 7 and March 10, 2016, in one or more
- > newspapers having a regular circulation in Coos and
- > Merrimack County. Additional public hearings will be
- > conducted by the New Hampshire Site Evaluation Committee in
- > Grafton, Belknap, and Rockingham County and notices of those
- > hearings will be published in the same
- > manner DOE invites
- > interested Members of Congress, state and local governments,
- > other Federal agencies, American Indian tribal governments,
- > organizations, and members of the public to provide comments
- > on the Draft EIS. Requests to
- > pre-register to provide oral comments at a public hearing
- > should be addressed to the Northern Pass EIS Team at this
- > email address: info@northernpasseis.us.
- > When requesting to pre-register to provide oral comments at
- > a public hearing, please include your full name and email
- > address, and specify the location you request to speak at.
- > Please state in the subject line, "NP Draft EIS Public
- > Hearing Speaker Request." Please submit your request by

- > February 25, 2016; requests received by that date will be
- > given priority in the speaking order. However, requests to
- > speak may also be made at the hearing. The speaking order
- > will be as follows: (1) Elected Officials; (2)
- > Pre-registered speakers (order determined on a first-come,
- > first-served basis); (3) Speakers registering at the
- > meeting. Pre-registered speakers who have requested to speak
- > at a specific time will be accommodated as possible.
- > If assistance is needed to
- > participate in any of the DOE hearings (e.g., qualified
- > interpreter, computer-aided real-time transcription), please
- > submit a request for auxiliary aids and services to DOE by
- > February 25, 2016 by contacting Brian Mills as described
- > below or e-mailing info@northernpasseis.us.
- >
- >
- >
- >
- > In
- > addition to comments on the Draft EIS, DOE is seeking public
- > input with respect to the cultural and historic property
- > information presented in this Draft EIS in accordance with
- > its cultural and historic property review under Section 106
- > of the National Historic Preservation Act.
- > Comments on the
- > Draft EIS and Section 106 can be submitted verbally during
- > public hearings; on the project website (<http://www.northernpasseis.us/comment/>);
- > in writing to Mr. Brian Mills at: Office of Electricity
- > Delivery and Energy Reliability (OE-20), U.S. Department of
- > Energy, 1000 Independence Avenue, SW, Washington, DC 20585;
- > via e-mail to draftEIScomments@northernpasseis.us
- > or Section106comments@northernpasseis.us;
- > or by facsimile to (202) 586-8008. Please mark envelopes
- > and electronic mail subject lines as "NP Draft EIS
- > Comments" or "NP Section 106 Comments." Written
- > comments should be submitted by April 4, 2016. Written and
- > oral comments will be given equal weight and all comments
- > received or postmarked by that date will be considered by
- > DOE in preparing the Final EIS. Comments submitted (e.g.,
- > postmarked) after that date will be considered to the extent
- > practicable. The documents are available
- > online at <http://www.northernpasseis.us/>. Copies of the Draft EIS are
- > also available at a number of public libraries and town
- > halls (a list of locations is found here: http://media.northernpasseis.us/media/DraftEIS_Hard_Copy_Locations.pdf).
- Printed copies of the
- > documents may be obtained by contacting Mr. Mills at the
- > above address. For further information contact Mr.
- > Brian Mills at the addresses above, or at (202) 586-8267.
- >
- > The
- > Application and all other filings in Docket No. 2015-06 are
- > located on the New Hampshire Site Evaluation Committee's

>
>
>
>
>
>

Northern Pass EIS Website Comment Receipt

0478-1

Thank you for your comment.

Refers to Comment placed on Mar 19, 2016

ID: 8751

Date Entered: Mar 19, 2016

Source: Website

Topics: Viewshed/Scenery

Organization:

Comment: I am completely against Northern Pass in its current form. Hydro Quebec feels free to ruin one of the only industries Northern NH has left - tourism. Bury the line or don't build at all. How would YOU like massive towers in your back yard?!

0478-1

0479-1
Thank you for your comment.

-----Original Message-----

From: Linda McDermott [mailto:lindart1@mac.com]

Sent: Thursday, March 10, 2016 11:49 AM

Subject: Comment at DOE Grafton County Meeting| Waterville Valley

Hello, as promised here is a copy of the comment I made at the meeting last night. I wasn't sure if I could attend the meeting until the last minute so this was drafted quickly but gets the point across of my thoughts and beliefs. Thank you, Linda McDermott

0479-1

My name is Linda McDermott and I own property in Franconia. We learned of Franconia when we spent half of our honeymoon here 23 years ago (at the historic Franconia Inn). We fell in love with the laid back culture and peacefulness of the town and the serenity and scenic views of the surrounding mountains. We talked about retiring here, or nearby, and recently purchased a home so we can enjoy nature and the mountains today

and into our future retirement. It was difficult finding a home in the area, however, because we were careful to avoid the proposed power lines and always referred to the NP website's link, "what's happening in your town". Franconia wasn't listed as being affected so we felt safe with our purchase. Now NP is proposing to build underground throughout the town. While I'm somewhat okay with that (I mean it's preferable to the ugly towers) I feel it would be an unnecessary disruption to this small quiet town; there are less populated and straighter (thus less expensive) alternative routes available. I also feel the ENTIRE NP should be buried.

(If time... Network of delicate wetlands, resource for bears, moose, deer, beavers, nesting homes to other wildlife along 116... Treed and scenic route.

.... Scenic Rte 116 loved by and highly utilized by bicyclists. Private wells and historic homes/businesses with delicate stone foundations are situated close to the road. Main Street is thickly settled, also close to road... Small businesses will have to close during construction creating financial stress)

When HQ decided to send electricity and enter the US, I feel it chose the least expensive way to do so, thinking it would be an easy sell to NH. I feel HQ knew the underground cost and avoided it just so it could get the job off the ground, and started using money to influence people and buy strategic plots of land. For technology in this day and age it is preposterous to me that these lines are not underground. Other utility companies have done it in Maine and Vermont. With all the millions of money HQ has spent buying people out, buying property, donating to causes - conservation!, and other programs including the NH Forward Plan, plus the recent \$2 million investment in the Balsams (more in future), it seems this money should have been earmarked to spend on burying the NP in the first place. Plus I'm curious about the cost to maintain above ground structures versus underground.

HQ/ES are corporations and a corporation is not a person. I get that. But PEOPLE run HQ/ES and these people are benefitting from profits/benefits and will do so for many many years to come. Their lives will be improved overtime. They'll have a good job, buy things, send their kids to good schools, maybe outgrow their current homes and purchase larger ones, with bigger yards, and so on. But the people in NH who are directly impacted by NP will not. Many below the notch will lose their beloved homes, businesses, yards, views, etc. Above the notch, the same. Except that there's a unique bond people in the north country have with the land that you don't understand. And putting massive grotesque towers with humming electromagnetic lines will not only rip the heart out of NH but the rip the heart and soul out of these people. It will be like taking a child away. They have nurtured, cultivated, and loved the land for generations or some came here not long ago to do so. They have sacrificed for their land. They have fished, hunted, farmed, eating off the land. They have used the land to educate their children. And they want the same for future generations. HQ/ES you - have an environmental and moral responsibility to bury the NP.

The people of HQ/ES - their identity is their business and the "things" they own. In NH, the identity of the people is their LAND.

Mention

Increased heart rate and sick feeling when I saw the signs on Rte 116 in Franconia ... I'm sure this is all making people sick as it did me when I thought areas close to my property were going to be threatened....

Sent from my iPad

Northern Pass EIS Website Comment Receipt

0481-1

Thank you for your comment.

Refers to Comment placed on Mar 21, 2016

ID: 8760**Date Entered:** Mar 21, 2016**Source:** Website**Topics:** Recreation**Organization:**

Comment: I would like to say how horrified i am that these lines are still being considered in NH. I have no idea why anyone would want to provide an unsightly group of high towers and lines or large tracts of land that have to be cleared for these wires and towers. In Nh there are hikers and tourists who certainly do not expect to see anything resembling this in their view. All Nh has is views and pristine hiking areas that make people ready to enjoy the outdoors. If this is gone then what has the state got to offer its tourists? Nothing really. OS I implore you to please give up this mad idea and move on to a better deal for NH. This does nothing to enhance the state and its beauty. Peace,
Barbara Thornbrough An avid hiker in NH

0481-1

Northern Pass EIS Website Comment Receipt

0482-1

Thank you for your comment.

Refers to Comment placed on Mar 21, 2016

ID: 8761**Date Entered:** Mar 21, 2016**Source:** Website**Topics:** Alternatives**Name:** Lenore Steinmetz**Organization:****Title:** Mrs**Email:** steinmetz.lennie@gmail.com**Mailing Address:** 1180 Greenleaf Drive**City:** Bethlehem**State:** PA**Zip:** 18017**Country:** US

Comment: In an environmentally sensitive area like the White Mountain National Forest, it seems that it is imperative to use the best possible technology (buried lines), even if it is a more expensive alternative. We cannot afford to destroy this valuable resource!

0482-1

Northern Pass EIS Website Comment Receipt

Refers to Comment placed on Mar 21, 2016

ID: 8763

Date Entered: Mar 21, 2016

Source: Website

Topics: Wildlife

Name: Denise Bolduc

Organization:

Email: deni603@yahoo.com

City: Concord

State: NH

Country: US

Comment: The Northern Pass transmission line project is contrary to protecting land in the White Mountain National Forest. This project will ravage and damage the land and its vegetation and impact animals and birds on migration and grazing routes, including breeding grounds. New Hampshire's tourism will be affected, impacting our state's economy as a result of these unsightly 130 and 155 foot towers.

An excerpt below speaks to existing infrastructure for hydropower that is currently in place. Why not tap into existing structures that are already in place. Please read the following:

Connecticut River hydropower relicensing reaches first major milestone
FOR IMMEDIATE RELEASE – November 6, 2013

Connecticut River hydropower relicensing reaches first major milestone

The five hydro facilities, accounting for over 30% of hydropower generation in New England, include Wilder, Bellows Falls and Vernon dams in Vermont/New Hampshire, owned by TransCanada and the Turners Falls Dam and the Northfield Mountain Pump Storage Project in Massachusetts, owned by FirstLight Power, a subsidiary of GDF Suez. The current licenses for these facilities were last issued between the late 1960s and 1980s and all expire in 2018. FERC, which oversees the relicensing process, issued its initial ruling on the proposed study plans in September.

See more at: <http://www.ctriver.org/connecticut-river-hydropower-relicensing-reaches-first-major-milestone/#sthash.BnxyBQB0.dpuf>

0483-1

Thank you for your comment. The EIS discusses the importance of tourism to New Hampshire, businesses, and the local and regional economy. The EIS (Section 3.1.2) and the Socioeconomic Technical Report describe the methods used to analyze potential impact to tourism for this EIS. As discussed in Section 4.1.2 of the EIS, no authoritative peer-reviewed studies were identified that address impacts to tourism as a result of the construction of transmission lines, and DOE did not attempt to develop such a study. No other resources were identified to allow for quantification of potential impacts. The EIS concludes that "while it is reasonable to conclude that the Project may have some level of impact on tourism within New Hampshire and on individual locations near the Project route, these are not quantifiable."

0483-1

Northern Pass EIS Website Comment Receipt

0484-1

Thank you for your comment.

Refers to Comment placed on Mar 21, 2016

ID: 8764

Date Entered: Mar 21, 2016

Source: Website

Topics: Health and Safety

Organization: Concerned Citizen

Comment:

| 0484-1

Weathering steel

From Wikipedia, the free encyclopedia

Weathering steel, best-known under the trademark **COR-TEN** steel and sometimes written without the hyphen as "**Corten steel**", is a group of steel alloys which were developed to eliminate the need for painting, and form a stable rust-like appearance if exposed to the weather for several years.

U.S. Steel holds the registered trademark on the name COR-TEN.^[1] Although USS sold its discrete plate business to International Steel Group (now Arcelor-Mittal) in 2003,^[2] it still sells COR-TEN branded material in strip-mill plate and sheet forms.

The original COR-TEN received the standard designation A 242 ("COR-TEN A") from the ASTM International standards group. Newer ASTM grades are A 588 ("COR-TEN B") and A 606 for thin sheet. All alloys are in common production and use.

Contents

- 1 Properties
 - 1.1 ASTM A 242
 - 1.2 ASTM A 588
- 2 Uses
- 3 Disadvantages
- 4 References
- 5 External links



Cor-Ten steel – Fulcrum (1987) by Richard Serra

Properties

"Weathering" refers to the chemical composition of these steels, allowing them to exhibit increased resistance to atmospheric corrosion compared to other steels. This is because the steel forms a protective layer on its surface under the influence of the weather.

The corrosion-retarding effect of the protective layer is produced by the particular distribution and concentration of alloying elements in it. The layer protecting the surface develops and regenerates continuously when subjected to the influence of the weather. In other words, the steel is allowed to rust in order to form the 'protective' coating.^[3]

Chemical composition of Cor-ten grades (%)^[4]

Grade	C	Si	Mn	P	S	Cr	Cu	V	Ni
Cor-ten A	0.12	0.25-0.75	0.20-0.50	0.01-0.20	0.030	0.50-1.25	0.25-0.55		0.65
Cor-ten B	0.16	0.30-0.50	0.80-1.25	0.030	0.030	0.40-0.65	0.25-0.40	0.02-0.10	0.40

The mechanical properties of weathering steels depend on which alloy and how thick the material is.^{[5][6]}

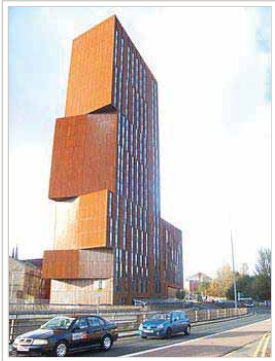
ASTM A 242

The original A 242 alloy has a yield strength of 50 kilopounds per square inch (340 MPa) and ultimate tensile strength of 70 ksi (480 MPa) for light-medium rolled shapes and plates up to 0.75 inches (19 mm) thick. It has yield strength of 46 ksi (320 MPa) and ultimate strength of 67 ksi (460 MPa) for medium weight rolled shapes and plates from 0.75–1 inch (19–25 mm) thick. The thickest rolled sections and plates – from 1.5–4 in (38–102 mm) thick have yield strength of 42 ksi (290 MPa) and ultimate strength of 63 ksi (430 MPa).

ASTM A 588

A 588 has a yield strength of at least 50 ksi (340 MPa), and ultimate tensile strength of 70 ksi (480 MPa) for all rolled shapes and plate thicknesses up to 4 in (100 mm) thick. Plates from 4–5 in (102–127 mm) have yield strength at least 46 ksi (320 MPa) and ultimate tensile strength at least 67 ksi (460 MPa), and plates from 5–8 in (127–203 mm) thick have yield strength at least 42 ksi (290 MPa) and ultimate tensile strength at least 63 ksi (430 MPa).

Uses



Broadcasting Tower, Leeds, United Kingdom

Weathering steel is popularly used in outdoor sculptures, such as in the large Chicago Picasso sculpture, which stands in the plaza of the Daley Center Courthouse in Chicago, which is also constructed of the same COR-TEN steel and as exterior facades, for its rustic antique appearance. Examples include Barclays Center, Brooklyn, New York,^[7] The Angel of the North, Gateshead, UK and the Humanities and Arts complex at Leeds Metropolitan University - Broadcasting Place - Leeds, UK^[8]

It is also used in bridge and other large structural applications such as the New River Gorge Bridge, the newer span of the Newburgh–Beacon Bridge, and the creation of the Australian Centre for Contemporary Art (ACCA) and MONA.

It is very widely used in marine transportation, in the construction of intermodal containers^[9] as well as visible sheet piling along recently widened sections of London's M25 motorway.



Abetxuko Bridge by J. Sobrino, PEDELTA, Abetxuko, Vitoria, Spain

The first use of COR-TEN for architectural applications was the John Deere World Headquarters in Moline, Illinois. The building was designed by architect Eero Saarinen, and completed in 1964. The main buildings of Odense University, designed by Knud Holscher and Jørgen Vesterholt and built 1971–1976, are clad in COR-TEN steel, earning them the nickname *Rustenborg*. In 1977, Robert Indiana created a Hebrew version of the *Love* sculpture made from COR-TEN using the four-letter word ahava (אהבה, "love" in Hebrew) for the Israel Museum Art Garden in Jerusalem, Israel. In Denmark, all masts for supporting the catenary on electrified railways are made of COR-TEN for aesthetic reasons.

COR-TEN was used in 1971 for the Highliner electric cars built by the St. Louis Car Company for Illinois Central Railroad. The use of COR-TEN was seen as a cost-cutting move in comparison with the contemporary railcar standard of stainless steel. A subsequent order in 1979 was built to similar specs, including COR-TEN bodies, by Bombardier. The cars were painted, a standard practice for COR-TEN railcars. The durability of COR-TEN did not live up to expectations, with rust holes appearing in the railcars. Painting may have contributed to the problem, as painted weathering steel is no more corrosion-resistant than conventional steel, because the protective patina will not form in time to prevent corrosion over a localized area of attack such as a small paint failure. Most of these railcars still operate out of Chicago.^[10]

COR-TEN was used to build the exterior of Barclays Center, made up of 12,000 pre-weathered steel panels engineered by ASI Limited & SHoP Construction.^[11] The *New York Times* says of the material, "While it can look suspiciously unfinished to the casual observer, it has many fans in the world of art and architecture".^[12]

Disadvantages

Using weathering steel in construction presents several challenges. Ensuring that weld-points weather at the same rate as the other materials may require special welding techniques or material. Weathering steel is not rustproof in itself. If water is allowed to accumulate in pockets, those areas will experience higher corrosion rates, so provision for drainage must be made. Weathering steel is sensitive to humid subtropical climates. In such environments, it is possible that the protective patina may not stabilize but instead continue to corrode. For example, the former Omni Coliseum, built in 1972 in Atlanta, never stopped rusting, and eventually large holes appeared in the structure. This was a major factor in the decision to demolish it just 25 years after construction. The same thing can happen in environments laden with sea salt. Hawaii's Aloha Stadium, built in 1975, is one example of this.^[13] Weathering steel's normal surface weathering can also lead to rust stains on nearby surfaces.

The rate at which some weathering steels form the desired patina varies strongly with the presence of atmospheric pollutants which catalyze corrosion. While the process is generally successful in large urban centers, the weathering rate is much slower in more rural environments. Uris Hall, a social sciences building on Cornell University's main campus in Ithaca, a small town in Upstate New York, did not achieve the predicted surface finish on its Bethlehem Steel Mayari-R weathering steel framing within the predicted time. Rainwater runoff from the slowly rusting steel stained the numerous large windows and increased maintenance costs.^[14] Corrosion without the formation of a protective layer apparently led to the need for emergency structural reinforcement and galvanizing in 1974, less than two years after opening.^[15]

The U.S. Steel Tower in Pittsburgh, Pennsylvania was constructed by U.S. Steel in part to showcase COR-TEN steel. The initial weathering of the material resulted in a discoloration of the surrounding city sidewalks which is known as "bleeding" or "runoff",^[16] as well as other nearby buildings. A cleanup effort was orchestrated by the corporation once weathering was complete to clean the markings. A few of the nearby sidewalks were left uncleaned, and remain a rust color. This problem has been reduced in newer formulations of weathering steel. Staining can be prevented if the structure can be designed so that water does not drain from the steel onto concrete where stains would be visible.

References

1. "Trademarks and Ownership". USS. Retrieved 30 October 2014.
2. *Plate Products*, 2003-10-31, archived from the original on 2007-12-28, retrieved 2010-01-13
3. Armstrong, Robert (14 April 2014). "Metal Building Materials and Corrosion". Absolute Steel. Retrieved 25 September 2014.
4. *COR-TEN - Weather & Corrosion Resistant Steel: Technical Data*, archived from the original on 2010-01-13, retrieved 2010-01-13.
5. "Structural, Carbon & HSLA Steel Plate". *A new vision of steel*. Chapel Steel. 1987. Retrieved 24 September 2010.
6. *Manual of Steel Construction, 8th Edition Second Revised Printing*. Chicago: American Institute of Steel Construction. p. Chapter 1, page 1–5.
7. Elizabeth A. Harris (August 27, 2012). "Constructing a Facade Both Rugged and Rusty". nytimes.com. Retrieved 10 September 2012.
8. Ruth Bloomfeld (November 11, 2009). "Feilden Clegg Bradley's Leeds complex completed". bdonline.co.uk. Retrieved 24 September 2010.
9. "Shipping Container Homes Globally". Retrieved 2009-05-24.
10. "Photos of the South Shore Line in the Dunes region of Northern Indiana". people.ku.edu. Retrieved 24 September 2010.

11. "Architectural Record: Barclays Center".
12. Harris, Elizabeth (27 August 2012). "Constructing a Facade Both Rugged and Rusty". *NY Times*. Retrieved 27 September 2013.
13. Arakawa, Lynda (11 May 2007). "Stadium rust to get \$12.4M treatment". Honolulu Advertiser. Retrieved 25 September 2014.
14. Olmstead, Elizabeth (2 October 1973). "'Old Rusty' Design Hikes Upkeep Costs". *The Cornell Daily Sun* (Ithaca, NY). Retrieved 2015-03-29.
15. Sennet, Charles (8 May 1974). "Donor Wrote Corson to Demand 'Old Rusty' Repairs Be Secret". *The Cornell Daily Sun* (Ithaca, NY). Retrieved 2015-03-29.
16. "Learn About Cor-Ten / F.A.Q". *Corten.Com*. Retrieved 17 October 2014.

External links

- Report on Weathering Steel in TxDOT Bridges (<http://www.smdisteel.org/~media/Files/SMDI/Construction/Bridges%20-%20WS%20-%20Report%20->



<http://www.smdisteel.org/~media/Files/SMDI/Construction/Bridges%20-%20WS%20-%20Report%20-%20Performance%20of%20WS%20in%20TX%20DOT%20Bridges%20by%20B%20McDad%20-%202006-02-2000.ashx>) from the Texas Department of Transportation (4464 KB). Contains recommended details to avoid staining. *Note: wrapping of piers was later found not to be cost-effective.*

- A Primer on Weathering Steel (<http://www.aisc.org/WorkArea/showcontent.aspx?id=20278>): a white paper from the National Steel Bridge Alliance
- Weathering steel: A technical overview of weathering steels for bridges and general construction (<http://www.aisc.org/assets/0/672/1193338/1193340/b9e45595-1841-497e-9411-1cc81046bb17.pdf>)

Retrieved from "https://en.wikipedia.org/w/index.php?title=Weathering_steel&oldid=691599594"

Categories: Weathering steel | Structural steel | Steels | Sculpture materials | U.S. Steel

- This page was last modified on 20 November 2015, at 22:44.
- Text is available under the Creative Commons Attribution-ShareAlike License; additional terms may apply. By using this site, you agree to the Terms of Use and Privacy Policy. Wikipedia® is a registered trademark of the Wikimedia Foundation, Inc., a non-profit organization.

Northern Pass EIS Website Comment Receipt

0485-1

Thank you for your comment.

Refers to Comment placed on Mar 21, 2016

ID: 8765

Date Entered: Mar 21, 2016

Source: Website

Topics: Forest Service Lands

Name: Peggy HUard

Organization: Mrs.

Title: Concerned Citizen

Email: fhuard@net1plus.com

Mailing Address: 13 David Drive

City: Hudson

State: NH

Zip: 03051

Country: US

Comment:

| 0485-1

The water cycle is also affected by deforestation. Trees extract groundwater through their roots and release it into the atmosphere. When part of a forest is removed, the trees no longer transpire this water, resulting in a much drier climate. Deforestation reduces the content of water in the soil and groundwater as well as atmospheric moisture. The dry soil leads to lower water intake for the trees to extract.^[48] Deforestation reduces soil cohesion, so that erosion, flooding and landslides ensue.^{[49][50]}

Shrinking forest cover lessens the landscape's capacity to intercept, retain and transpire precipitation. Instead of trapping precipitation, which then percolates to groundwater systems, deforested areas become sources of surface water runoff, which moves much faster than subsurface flows. That quicker transport of surface water can translate into flash flooding and more localized floods than would occur with the forest cover. Deforestation also contributes to decreased evapotranspiration, which lessens atmospheric moisture which in some cases affects precipitation levels downwind from the deforested area, as water is not recycled to downwind forests, but is lost in runoff and returns directly to the oceans. According to one study, in deforested north and northwest China, the average annual precipitation decreased by one third between the 1950s and the 1980s.^[51]

Trees, and plants in general, affect the water cycle significantly:

- their canopies intercept a proportion of precipitation, which is then evaporated back to the atmosphere (canopy interception);
- their litter, stems and trunks slow down surface runoff;
- their roots create macropores – large conduits – in the soil that increase infiltration of water;
- they contribute to terrestrial evaporation and reduce soil moisture via transpiration;
- their litter and other organic residue change soil properties that affect the capacity of soil to store water.
- their leaves control the humidity of the atmosphere by transpiring. 99% of the water absorbed by the roots moves up to the leaves and is transpired.^[52]

As a result, the presence or absence of trees can change the quantity of water on the surface, in the soil or groundwater, or in the atmosphere. This in turn changes erosion rates and the availability of water for either ecosystem functions or human services.

The forest may have little impact on flooding in the case of large rainfall events, which overwhelm the storage capacity of forest soil if the soils are at or close to saturation.

Tropical rainforests produce about 30% of our planet's fresh water.^[44]

Soil

Undisturbed forests have a very low rate of soil loss (erosion), approximately 2 metric tons per square kilometer (6 short tons per square mile). Deforestation generally increases rates of soil loss, by increasing the amount of runoff and reducing the protection of the soil from tree litter. This can be an advantage in excessively leached tropical rain forest soils. Forestry operations themselves also increase erosion through the

Northern Pass EIS Website Comment Receipt

0486-1

Thank you for your comment.

Refers to Comment placed on Mar 21, 2016

ID: 8766

Date Entered: Mar 21, 2016

Source: Website

Topics: Purpose and Need

Name: Peggy Huard

Organization: Mrs.

Title: Concerned Citizen

Email: fhuard@net1plus.com

Mailing Address: 13 David Drive

City: Hudson

State: NH

Zip: 03051

Country: US

Comment: Fraud and Corporate Greed

| 0486-1

Northern Pass EIS Website Comment Receipt

0487-1
Thank you for your comment.

Refers to Comment placed on Mar 21, 2016

ID: 8767

Date Entered: Mar 21, 2016

Source: Website

Topics: Purpose and Need

Organization: Mrs.

Comment: Fraud and Corporate Greed

| 0487-1

Northern Pass EIS Website Comment Receipt

0488-1

Thank you for your comment.

Refers to Comment placed on Mar 21, 2016

ID: 8768

Date Entered: Mar 21, 2016

Source: Website

Topics: Health and Safety

Organization: Mrs.

Comment: Variousb levels of Electic Shock

| 0488-1

Northern Pass EIS Website Comment Receipt

0489-1

Thank you for your comment.

Refers to Comment placed on Mar 21, 2016

ID: 8769

Date Entered: Mar 21, 2016

Source: Website

Topics: Wildlife

Organization: Mrs.

Comment:

| 0489-1

Annotated Bibliography

Impacts of Noise on Wildlife

Title	Citation	Abstract
Literature Reviews		
The costs of chronic noise exposure for terrestrial organisms	Barber, J. R., Crooks, K. R., & Fristrup, K. M. 2010. The costs of chronic noise exposure for terrestrial organisms. <i>Trends in Ecology and Evolution</i> , 25(3), 180-189.	Growth in transportation networks, resource extraction, motorized recreation and urban development is responsible for chronic noise exposure in most terrestrial areas, including remote wilderness sites. Increased noise levels reduce the distance and area over which acoustic signals can be perceived by animals. Here, we review a broad range of findings that indicate the potential severity of this threat to diverse taxa, and recent studies that document substantial changes in foraging and anti-predator behavior, reproductive success, density and community structure in response to noise. Effective management of protected areas must include noise assessment, and research is needed to further quantify the ecological consequences of chronic noise exposure in terrestrial environments.
	Dooling, R. J., Lohr, B. & Dent, M. L. 2000. Hearing in birds and reptiles. In: <i>Comparative Hearing: Birds and Reptiles</i> (Ed. by R. J. Dooling, R. R. Fay & A. N. Popper), pp. 308–359. New York: Springer–Verlag.	
	Fay, R. R. 1988. <i>Hearing in Vertebrates: a Psychophysics Data Book</i> . Winnetka, Illinois: Hill–Fay.	
Tits, noise and urban bioacoustics	Katti M and Warren PS, 2004, Tits, noise and urban bioacoustics. Trends in Ecology and Evolution 19(3): 109-110	Humans, particularly in cities, are noisy. Researchers are only just beginning to identify the implications of an increase in noise for species that communicate acoustically. In a recent paper, Slabbekoorn and Peet show, for the first time, that some birds can respond to anthropogenically elevated noise levels by altering the frequency structure of their songs. Cities are fruitful grounds for research on the evolution of animal communication systems, with broader implications for conservation in human-altered environments.
The Effects of Aircraft Noise on Wildlife; a Review and Comment.	Kempf, N. & O. Hueppop, 1997: "The Effects of Aircraft Noise on Wildlife; a Review and Comment". Vogel und Luftverkehr , Bd. 1/97: 58-70	The discussion of noise effects involves physical, physiological aspects making an evaluation quite difficult. In humans the effects of noise range from discomfort to severe, irreversible damage. In laboratory animals only strong and long lasting noise causes physiological changes that can affect health. These findings are only partly applicable to wild animals. Field studies have to deal carefully

		<p>with (1) methodological difficulties in measuring sound pressure levels, (2) interspecific differences of auditory sensitivity, and (3) problems in interpreting behavioural reactions in the field. Non-standardized methods of observations and analysis make a comparison of the results found in the literature almost impossible. Especially the noise of aircraft can scarcely be assessed separately from its optical appearance. Optical or acoustical stimuli taken separately have only minor effects with the optical stimulus evoking the stronger reaction; even soundless paragliders can cause panic flights. In general, noise plays a minor role as a disturbance factor, but in combination with optical stimuli can trigger a reaction. Sonic booms and jet aircraft noise sometimes cause startle responses, which mostly do not result in severe consequences. Apparently, animals can adapt to high noise exposure. When animals react to aircraft noise, it is often due to previous experience associating the noise with an aircraft. Aside from a few accidents caused by panic flights, negative consequences of aircraft noise per se on individuals and populations are not proven. In contrast, aircraft traffic in general can cause a variety of damages. Concerning the effects of noise on wildlife, many questions remain.</p>
<p>Responses of cetaceans to anthropogenic noise</p>	<p>Nowacek DP, Thorne LH, Johnston DW and Tyack PL, Responses of cetaceans to anthropogenic noise. 2007, Mammal Review 37(2):81-115</p>	<p>1. Since the last thorough review of the effects of anthropogenic noise on cetaceans in 1995, a substantial number of research reports has been published and our ability to document response(s), or the lack thereof, has improved. While rigorous measurement of responses remains important, there is an increased need to interpret observed actions in the context of population-level consequences and acceptable exposure levels. There has been little change in the sources of noise, with the notable addition of noise from wind farms and novel acoustic deterrent and harassment devices (ADDs/AHDs). Overall, the noise sources of primary concern are ships, seismic exploration, sonars of all types and some AHDs.</p> <p>2. Responses to noise fall into three main categories: behavioural, acoustic and physiological. We reviewed reports of the first two exhaustively, reviewing all peer-reviewed literature since 1995 with exceptions only for emerging subjects. Furthermore, we fully review only those studies for which received sound characteristics (amplitude and frequency) are reported, because interpreting what elicits responses or lack of responses is impossible without this exposure information. Behavioural responses include changes in surfacing, diving and heading patterns. Acoustic responses include changes in type or timing of vocalizations relative to the noise source. For physiological responses we address the issues of auditory threshold shifts and 'stress', albeit in a more limited capacity; a thorough review of physiological consequences is beyond the scope of this paper.</p> <p>3. Overall, we found significant progress in the documentation of responses of cetaceans to various noise sources. However, we are</p>

		<p>concerned about the lack of investigation into the potential effects of prevalent noise sources such as commercial sonars, depth finders and fisheries acoustics gear. Furthermore, we were surprised at the number of experiments that failed to report any information about the sound exposure experienced by their experimental subjects. Conducting experiments with cetaceans is challenging and opportunities are limited, so use of the letter should be maximized and include rigorous measurements and/or modeling of exposure.</p>
<p>Avian Communication in Urban Noise: Causes and Consequences of Vocal Adjustment</p>	<p>Particelli GL and Blickley JL, 2006, Avian communication in urban noise: causes and consequences of vocal adjustment. The Auk 123(3):639-649</p>	<p>In this overview, we ask three questions: (1) what features of a bird's vocalization can be adjusted to reduce masking, (2) how do these adjustments come about, and (3) what are the consequences of these changes for individual fitness and population persistence? The answers to these questions depend on the morphological, developmental, and behavioral underpinnings of the vocalization, and the context in which the vocalization is used. This is an area where knowledge of physiology, developmental neurobiology, animal behavior, and behavioral ecology all contribute to understanding how animals adjust (or fail to adjust) to anthropogenic change.</p>
<p>A Review of the Effects of Aircraft Noise on Wildlife and Humans, Current Control Mechanisms, and the Need for Further Study</p>	<p>Pepper, Christopher B., Nascarella, Marc A.; Kendall, Ronald J. 2003, "A review of the effects of aircraft noise on wildlife and humans, current control mechanisms, and the need for further study". [Article] Environmental Management 32(4).. 418-432.</p>	<p>Military and civilian aircraft overflights are an issue that may impact the quality of life for millions of United States residents. Aircraft noise annoys many people worldwide and is generally thought to adversely affect some wildlife species. In light of increasing demands being placed on airspace, and because of technological improvements in acoustical testing, there is a need to reexamine the effects of aircraft noise exposure on humans and wildlife. This paper reviews past research, current laws and legislation, and presents an argument for the need to revisit the effects of aircraft noise on humans and wildlife. Some evidence suggests that noise may adversely impact wildlife and humans, however, many of the past studies were inconclusive and based on relatively small sample sizes. Given that aircraft noise abatement legislation has been enacted and because of the recent promulgation of community-based noise awareness programs, future studies should be conducted to resolve public policy problems and debates associated with aircraft noise. The need to further study the effects of aircraft noise on humans and wildlife is critical for creating sustainable land use policies near aircraft installations. Data derived from these studies will be used to create sound public policies that enhance the operational capacity of military and civilian aircraft while reducing the opportunity for human and wildlife exposure to aircraft noise.</p>
<p>The Effect of Noise on Wildlife: A Literature Review</p>	<p>Radle, Lyn Autumn, 1998, "The Effect of Noise on Wildlife: A Literature Review" World Forum for Acoustic Ecology Online Reader http://interact.uoregon.edu/MediaLit.it/wfae/readings/radle.html</p>	<p>Most researchers agree that noise can effect an animal's physiology and behavior, and if it becomes a chronic stress, noise can be injurious to an animal's energy budget, reproductive success and long-term survival. Armed with this understanding it should follow that humans would attempt to minimize the threat to wildlife by reducing the amount of noise that they are exposed to in natural areas; but this</p>

		<p>has not been the situation. Natural areas continue to be degraded by human-made noise, wildlife continues to suffer from these disturbances, and to date the majority of the debate revolves around the egocentric demands of people to either produce more noise in nature (through motorized recreation, scientific research, military exercises etc.) or experience natural areas in the absence of anthropogenic noise. Neither side has adequately addressed the issue from the biocentric view of wildlife and the known, or as yet undiscovered, damage that our increasingly noisy human-altered environment is inflicting upon them.</p>
<p>Urban bioacoustics: it's not just noise</p>	<p>Warren PS, Katti M, Ermann M and Brazel A, 2006, Urban bioacoustics: it's not just noise. Animal Behaviour 71:491-502</p>	<p>The acoustic environment has a major influence in shaping animal communication systems. Humans, particularly in cities, profoundly alter the acoustic structure of their environment. Recent articles have identified effects of noise on animal communication and behaviour. These studies, however, serve to highlight the surprising dearth of research on the behavioural responses of animals to altered acoustic environments. We argue that noise is not the only aspect of urban bioacoustics that researchers should explore. In addition to elevated noise levels, urban areas are characterized by a spatial heterogeneity in noise levels, predictable diurnal variation in noise levels and the existence of many vertical reflective surfaces. All of these characteristics have parallels in natural environments. We suggest that cities are a fruitful area for future research on the evolution of animal communication systems, with more general implications for conservation in human-altered environments.</p>
<p>Noise in National Parks</p>		
<p>An assessment of noise audibility and sound levels in U.S. National Parks</p>	<p>Lynch, E., Joyce, D., & Fristrup, K. 2011. An assessment of noise audibility and sound levels in U. S. National Parks. <i>Landscape Ecology</i>.</p>	<p>Throughout the United States, opportunities to experience noise-free intervals are disappearing. Rapidly increasing energy development, infrastructure expansion, and urbanization continue to fragment the acoustical landscape. Within this context, the National Park Service endeavors to protect acoustical resources because they are essential to park ecology and central to the visitor experience. The Park Service monitors acoustical resources in order to determine current conditions, and forecast the effects of potential management decisions. By community noise standards, background sound levels in parks are relatively low. By wilderness criteria, levels of noise audibility are remarkably high. A large percentage of the noise sources measured in national parks (such as highways or commercial jet traffic) originates outside park boundaries and beyond the management jurisdiction of NPS. Many parks have adopted noise mitigation plans, but the regional and national scales of most noise sources call for conservation and management efforts on similar scales.</p>

Physiological Effects of Noise		
<p>Effects of Environmental Stressors on Deep Body Temperature and Activity Levels in Silver Fox Vixens (Vulpes Vulpes)</p>	<p>Bakken, Morten et.al., 1999, "Effects of environmental stressors on deep body temperature and activity levels in silver fox vixens (Vulpes vulpes)" Applied Animal Behaviour Science, Vol. 64, no. 2 pp. 141-151</p> <p>Notes: N = 6. recorded noise stimuli, four experiments; aircraft noise duration 15 s, 100 dB, machine noise duration 15 s, 90 dB, firing a shotgun duration 1 s, 90 dB, human conversation duration 15 s, 95 dB. Played back and repeated at 20 s intervals during 5 min were tested. Deep body temperature and activity levels were monitored with surgically implanted radio telemetry devices.</p> <p>Sounds tested did not induce stress as measured. Small sample size of previously infanticidal, farm-raised, caged foxes</p>	<p>The present study was performed to investigate the effects of 14 different environmental stimuli on stress-induced hyperthermia (SIH) and levels of locomotor activity in six (three infanticidal, three non-infanticidal) 2.5-year-old silver fox vixens. The effects of contact with humans (six experiments; handling for 5 min, handling of neighbouring animal for 5 min, presence of one person for 20 s, 5 and 90 min, presence of a group of humans for 5 min), exposure to unfamiliar foxes (four experiments; presence of an unfamiliar cagemate (female, male) and an unfamiliar neighbouring animal (female, male) for 90 min), and various recorded noise stimuli (four experiments; aircraft noise [duration 15 s, 100 dB], machine noise [duration 15 s, 90 dB], firing a shotgun [duration 1 s, 90 dB], human conversation [duration 15 s, 95 dB]) played back and repeated at 20 s intervals during 5 min were tested. Deep body temperature and activity levels were monitored with surgically implanted radio telemetry devices. All registrations were made during the 90-min period after stimulus presentation. The presence of humans and other silver foxes, but not exposure to loud recorded noise, resulted in a SIH. Comparison of the SIH between the normally reproducing vixens and the previously infanticidal vixens revealed significant differences. The SIH response was most pronounced in the previously infanticidal vixens, whereas the levels of physical activity were lowest in this group. The present study indicated that important means to improve animal welfare in silver foxes should include an improvement of the general human-animal relationship and emphasises the importance of a stable social environment.</p>
<p>Energetic cost of man-induced disturbance to staging snow geese</p>	<p>Belanger L and Bedard J, 1990, Energetic cost of man-induced disturbance to staging in snow geese. The Journal of Wildlife Management 54(1):36-41</p>	<p>We estimated energetic cost of man-induced disturbance to fall-staging greater snow geese (<i>Chen caerulescens atlantica</i>) in Qubbec. Two responses of birds to disturbance were considered (1) birds fly away but promptly resume feeding following a disturbance (Response A) and (2) birds interrupt feeding altogether (Response B). Daylight foraging time decreased by 4 to 51% depending on disturbance levels. Average rate of disturbance (1.46/hr) in Response A resulted in a 5.3% increase in hourly energy expenditure (HEE) combined with a 1.6% reduction of hourly metabolizable energy intake (HMEI). In Response B, HEE increased by 3.4%; HMEI decreased by 2.9 to 19.4%. Increases in nighttime feeding time and daily feeding rate were evaluated as compensatory mechanisms. A 4% increase in night feeding could compensate for energy losses caused solely by disturbance flights (Response A), but a 32% increase in nighttime feeding was required to restore energy losses incurred in Response B. No increase in daily feeding rate was observed between days</p>

<p>Acute and Chronic Blood Pressure Response to Recurrent Acoustic Arousal in Rats</p>	<p>Gang Bao, Naira Metreveli and Eugene C. Fletcher, 1999, "Acute and chronic blood pressure response to recurrent acoustic arousal in rats" American Journal of Hypertension, Vol. 12, no. 5, pp. 504-510</p> <p>Notes: N = 10 experimental, 10 control; buzzer noise (500 Hz, 100 dB) presented 6 out of every 30 sec, 7 hr/day for 35 days. dB weighting and detailed frequency characteristics not reported.</p> <p>Conclusions: movement and blood pressure measurements remained above control levels but showed marked signs of habituation</p>	<p>with different disturbance levels (P > 0.05). We conclude that man-induced disturbance can have significant energetic consequences for fall-staging greater snow geese.</p> <p>Repetitive episodic hypoxia every 30 sec administered chronically to Sprague-Dawley (SD) rats has been shown by previous studies to cause a sustained increase in daytime blood pressure (BP). Acoustic arousal in humans during wake or sleep produces an acute BP rise. The question then arises as to whether chronic episodic acoustic arousal applied with the same frequency and duration as episodic hypoxia induces elevated BP. We exposed 14-week-old (N = 10) SD rats in individual cages to recurrent buzzer noise (500 Hz, 100 db) 6 out of every 30 sec, 7 h/day for 35 days. Ten other rats were placed in similar cages daily but not exposed to noise, to provide a sham condition. An infrared beam with a detector was positioned at the end of each cage. This allowed us to quantify motion by registering the number of times the rat broke the beam per 7 h period. Mean intraarterial BP was measured in unrestrained conscious animals at baseline and at the end of 35 days of their respective conditions. Acute episodic acoustic stimulation caused an immediate response in BP and heart rate. Habituation occurred in that the movement response to 120 noises per hour was 75% in hour one and 20% in hours two through seven on day one. The movement response was further reduced by day 35 but remained significantly higher than in animals not stimulated by noise. The cardiovascular response to noise also showed signs of habituation. Chronic noise stimulation produced no sustained increases in BP after 35 days of exposure.</p>
<p>Avian species differences in susceptibility to noise exposure</p>	<p>Ryals BM, Dooling RJ, Westbrook E, Dent ML, MacKenzie A and Larsen ON, 1999, Avian species differences in susceptibility to noise exposure. Hearing Research 131:71-88.</p> <p>Notes: damaged created by exposure to 112, 118 or 120 dB for 12-24 hours (at either a2.86 kHz tone or 2-6 kHz noise).</p>	<p>Previous studies of hair cell regeneration and hearing recovery in birds after acoustic overstimulation have involved relatively few species. Studies of the effects of acoustic overexposure typically report high variability. Though it is impossible to tell, the data so far also suggest there may be considerable species differences in the degree of damage and the time course and extent of recovery. To examine this issue, we exposed four species of birds (quail, budgerigars, canaries, and zebra finches) to identical conditions of acoustic overstimulation and systematically analyzed changes in hearing sensitivity, basilar papilla morphology, and hair cell number. Quail and budgerigars showed the greatest susceptibility to threshold shift and hair cell loss after overstimulation with either pure tone or bandpass noise, while identical types of overstimulation in canaries and zebra finches resulted in much less of a threshold shift and a smaller, more diffuse hair cell loss. All four species showed some recovery of threshold sensitivity and hair cell number over time. Canary</p>

		<p>and zebra finch hearing and hair cell number recovered to within normal limits while quail and budgerigars continued to have an approximately 20 dB threshold shift and incomplete recovery of hair cell number. In a final experiment, birds were exposed to identical wide-band noise overstimulation under conditions of artificial middle ear ventilation. Hair cell loss was substantially increased in both budgerigars and canaries suggesting that middle ear air pressure regulation and correlated changes in middle ear transfer function are one factor influencing susceptibility to acoustic overstimulation in small birds.</p>
<p>Behavioural and Physiological Responses of Pigs to Sound</p>	<p>J. C. Talling, N. K. Waran, C. M. Wathes and J. A. Lines, 1996, "Behavioural and physiological responses of pigs to sound" <i>Applied Animal Behaviour Science</i>, Vol. 48, no. 3-4, pp 187-201</p> <p>Notes: Two intensity treatments (85 or 97 dB(lin)) and two frequency treatments (500 Hz or 8 kHz).</p> <p>Conclusion: Heart rate and ambulation scores increased for both treatments with a significant dose effect (except for freq. on ambulation).</p>	<p>Sound is a potential stressor to pigs throughout their lives. The following two studies examined the behavioural acid physiological responses of pigs to both artificial and real sound. In the first study, piglets (n = 8) were exposed to artificially generated sounds, nominal intensities of 85 or 97 dB(Lin), and frequencies of 500 Hz and 8000 Hz for 15 min, during an hour experimental session. In the second study the piglets (n = 8) were exposed to 20 min of four sounds: farm recording, Leq 80 dB(Lin); transport recording, Leq 83 dB(Lin); abattoir recording, Leq 84 dB(Lin) and white noise, Leq 89 dB(Lin). In both studies piglets were exposed to the sounds in an arena to which they had previously become accustomed and a companion pig was present in the experimental room. The behaviour and heart rate of the piglets were recorded pre-, during and post-exposure to all the sounds in both studies. In addition observations were also made in a control session with no sound stimuli. In both studies an increase in heart rate (maximum 20 beats min(-1)) was observed for the first 15 min of exposure to sound (P < 0.05), when compared with controls. An increase in ambulation score (control 4.4 vs 97 dB(Lin) 20.2) due to sound exposure was only observed in Study 1 (P < 0.05). Greater increases were found when the pigs were exposed to the higher frequency and higher intensity in Study 1 (P < 0.05). In the second study small differences were found between the treatments, with the transporter causing the greatest increase in heart rate (P < 0.05) and the greatest reduction in ambulation score (P < 0.05). When the specific behaviours of the piglets were compared there was no difference between the different treatments in Study 2 (P < 0.05), however sound exposure in general changed the behaviour of the pigs from resting to aroused and attentive (P < 0.05). The results from these two studies suggest that sound can activate the pigs' defence mechanisms, though habituation occurs when no immediate danger or threat is identified, and that the manifestation of this response depends on properties of the sound stimuli.</p> <p>Acoustic recordings were used to investigate the cardiac responses of a captive dolphin (<i>Tursiops truncatus</i>) to sound playback stimuli. A</p>
<p>Cardiac Responses to</p>	<p>Miksis, J L, et.al., 2001, Cardiac responses to acoustic</p>	

<p>Acoustic Playback Experiments in the Captive Bottlenose Dolphin (Tursiops truncatus)</p>	<p>playback experiments in the captive bottlenose dolphin (Tursiops truncatus) Journal of Comparative Psychology, 115(3): 227-32</p>	<p>suction-cup hydrophone placed on the ventral midline of the dolphin produced a continuous heartbeat signal while the dolphin was submerged. Heartbeats were timed by applying a matched-filter to the phonocardiogram. Significant heart rate accelerations were observed in response to playback stimuli involving conspecific vocalizations compared with baseline rates or tank noise playbacks. This method documents that objective psychophysiological measures can be obtained for physically unrestrained cetaceans. In addition, the results are the 1st to show cardiac responses to acoustic stimuli from a cetacean at depth. Preliminary evidence suggests that the cardiac response patterns of dolphins are consistent with the physiological defense and startle responses in terrestrial mammals and birds.</p>
<p>Monitoring Stress in Captive Giant Pandas (Ailuropoda melanoleuca): Behavioral and Hormonal Responses to Ambient Noise</p>	<p>Owen, et.al., 2004, Monitoring stress in captive giant pandas (Ailuropoda melanoleuca): Behavioral and hormonal responses to ambient noise Zoo Biology, 23(2): 147-164; 2004 Notes: dB measurements taken over 1 min intervals, L-weighted; Daily average decibel level (AvdB) taken from 0700 to 1600 hr—range 60.9-84.2 dB</p>	<p>Anthropogenic noise may impact captive breeding programs for endangered species. We recorded ambient noise and monitored potential behavioral and hormonal indices of stress in two captive giant pandas for 4 years. Statistical analyses were conducted for each individual separately, which allowed us to generalize only to these two animals. These preliminary findings indicate that ambient noise can have long-lasting effects on stress indices. Days characterized by louder levels of noise were associated with increased locomotion, restless manipulation of the exit door of the enclosure, increased scratching and vocalizations indicative of agitation, and/or increased glucocorticoids excreted in urine. These general effects were modulated by several factors: 1) Brief loud noise evoked behavioral distress, but not pituitary-adrenal activation. More chronic, moderate-amplitude noise was associated with higher levels of glucocorticoids. 2) Some responses were frequency-dependent, with loud low-frequency noise having the greatest impact. 3) Female reproductive condition interacted significantly with noise amplitude for all behavioral measures, with stronger effects for the loudest acute noises. The female appeared especially sensitive to noise during estrus and lactation, and less so during pregnancy/pseudopregnancy and nonreproductive periods. Despite these statistical effects, we found no compelling evidence that these adjustments indicate substantive detrimental effects on well-being or reproduction. Nonetheless, careful monitoring of giant pandas and other captive-held species is advisable, especially during reproductively sensitive periods such as implantation and birth.</p>
<p>Effect of Noise Exposure on Rat Cardiac Peripheral Benzodiazepine Receptors</p>	<p>Salveti, Francesca, et.al., 2000, "Effect of noise exposure on rat cardiac peripheral benzodiazepine receptors" Life Sciences, Vol. 66, no. 13, pp. 1165-1175</p>	<p>Noise is an environmental physical agent, which is regarded as a stressful stimulus: impairment and modifications in biological functions are reported, after loud noise exposure, at several levels in human and animal organs and apparatuses, as well as in the endocrine, cardiovascular and nervous system. In the present study equilibrium binding parameters of peripheral benzodiazepine receptors (PBRs) labelled by the specific radioligand [³H]-3JPK 11195, were evaluated in cardiac tissue of rats submitted to 6 or 12 h noise exposure and of rats</p>

		<p>treated "in vivo" with PER ligands such as PK 11195, Ro5-4864, diazepam and then noise-exposed. Results revealed a statistically significant decrease in the maximum number of binding sites (B-max) of [H-3]PK 11195 in atrial membranes of 6 or 12 h noise exposed rats, compared with sham-exposed animals, without any change in the dissociation constant (K-d). The "in vivo" PER ligand pretreatment counteracted the noise-induced modifications of PER density. As PBRs are mainly located on mitochondria we also investigated whether noise exposure can affect the [H-3]PK 11195 binding parameters in isolated cardiac mitochondrial fractions. Results indicated a significant B-max value decrease in right atrial mitochondrial fractions of rats 6 or 12 h noise-exposed. Furthermore, as PER has been suggested to be a supramolecular complex that might coincide with the not-yet-established structure of the mitochondrial permeability transition (MPT)-pore, the status of the MPT-pore in isolated heart mitochondria was investigated in noise- and sham-exposed rats. The loss of absorbance associated with the calcium-induced MPT-pore opening was greater in mitochondria isolated from hearts of 6 h noise-than those of sham-exposed rats. In conclusion, these findings represent a further instance for PER density decrease in response to a stressful stimulus, like noise; in addition they revealed that "in vivo" administration of PER ligands significantly prevents this decrease. Finally, our data also suggest the involvement of MPT in the response of an organism to noise stress.</p>
<p>Gestational Exposure to Loud Noise Alters the Development and Postnatal Responsiveness of Humoral and Cellular Components of the Immune System in Offspring</p>	<p>Sobrian, S. K. et.al., 1997, "Gestational Exposure to Loud Noise Alters the Development and Postnatal Responsiveness of Humoral and Cellular Components of the Immune System in Offspring" Environmental Research, Vol. 73, no. 1-2 pp. 227-241</p> <p>Notes: Noise = 85-90 dB fire bell, weighting not reported and sound not characterized</p>	<p>Gestational exposure of the female to environmental toxins can alter immune function in the offspring. We have recently shown that prenatal maternal stress, that is, stress applied to or induced in the female during pregnancy, can also alter the development of humoral immunocompetence in the offspring and their hormonal, and immunologic responses to postnatal stress. This report presents data from two experiments on the effects of prenatal exposure to loud noise-prenatal sound stress (PSS)-on the development and responsiveness of in vitro and in vivo humoral and cellular immune function in the offspring. Pregnant rats were exposed daily from Day 15 to Day 21 of gestation to an inescapable loud noise (an 85- to 90-decibel fire alarm bell) delivered randomly for 1 hr. In developing offspring, PSS produced age-dependent and mitogen-specific alterations in lymphoproliferative activity and reduced immunoglobulin G levels at Postnatal Day 21. Antibody titers to herpes simplex virus type 1 were also reduced. Exposure to loud noise before or after infection produced an additional reduction in titers in these offspring. Arthus skin reaction (AR) to old tuberculin was reduced by PSS. Combined prenatal/postnatal sound stress further reduced this response and the AR to bovine serum albumin (BSA). Delayed hypersensitivity reaction to BSA was reduced in PSS offspring; postnatal sound stress enhanced the reaction to both antigens, but</p>

<p>Fecal Corticosterone Levels in California Spotted Owls Exposed to Low-Intensity Chainsaw Sound</p>	<p>Tempel, Douglas J.; Gutierrez, R. J., 2003, "Fecal corticosterone levels in California spotted owls exposed to low-intensity chainsaw sound". Wildlife Society Bulletin, Vol. 31 no. 3, pp. 698-703</p> <p>Notes: chainsaw noise—50-60 dB(A), instantaneous max readings</p> <p>Conclusions: low-intensity noise does not produce a stress response as measured by fecal corticosterone levels</p>	<p>only in males. Antibody titers to BSA were increased by PSS; adjuvant-induced inflammation was attenuated by postnatal sound stress. These data suggest that in utero exposure to loud noise, which can occur in the workplace, is toxic to the developing immune system.</p> <p>The California spotted owl (<i>Strix occidentalis occidentalis</i>) is a focal management species in Sierra Nevada national forests. To protect the owl from human activity, the United States Forest Service has proposed guidelines that would prohibit timber harvest and road or trail construction within 400 m of active owl nest sites during the breeding season. To guide these efforts, we tested the physiological stress response of 9 nonbreeding wild male owls to the sound of a chainsaw operated 100 m from their roost site, using change in fecal corticosterone level (ng/g dry feces) as the response variable. We employed a cross-over experimental design to control for differences among individuals. Chainsaw exposure did not result in a detectable increase in fecal corticosterone level ($F_{1,7}=0.01$, $P=0.94$). These findings corroborate results of a field study that suggested spotted owls can tolerate low-intensity human sound in their environment without eliciting a physiological stress response. However, activities producing chronic and intense noise (e.g., timber harvest, road construction), which might elicit such a response, were not simulated in our experiment. The effects of these activities on California spotted owls will require further research.</p>
<p>Time-Dependent Differential Changes of Immune Function in Rats Exposed to Chronic Intermittent Noise</p>	<p>Van Raaij, Marcel T. M. et.al, 1996, "Time-Dependent Differential Changes of Immune Function in Rats Exposed to Chronic Intermittent Noise". Physiology & Behavior, Vol. 60, no. 6, pp. 1527-1533</p>	<p>Noise is a highly relevant environmental and clinical stressor. Compared to most other experimental stressors, noise is a modest activator of neuroendocrine pathways that mimic the situation in human health where neuroendocrine activation by environmental stressors is often absent or difficult to establish. Little is known about the effects of noise exposure on the immune system. In the present work, the effects of a low-intensity chronic intermittent unpredictable noise regimen on various parameters of immune function was studied. Male wistar rats were exposed to a randomized noise protocol (white noise, 85 dB, 2-20 KHz) for 10 h per day, 15 min per h over a total period of 3 weeks. Control animals were exposed to ambient sound only. Immune function was monitored after 24 h, 7 days, and 21 days of noise exposure. Noise induced several significant changes in immune function in a time-dependent differential pattern involving both immunosuppression and immunoenhancement. After 24 h, serum IgM levels were increased and peripheral phagocytic activity was decreased. Splenic lymphocytic proliferation to mitogens was significantly decreased after 7 days, but slightly elevated after 3 weeks. The activity of splenic NK cells was increased significantly after 24 h and 7 days, but suppressed after 3 weeks. These results show that various parameters of immune function are affected differentially over time in a period of chronic mild noise stress, possibly due to sequential activation of different physiological mechanisms. Copyright</p>

		(C) 1996 Elsevier Science Inc.
Effects of Non-Aviation Noise Sources		
<p>The Influence of Weapons-Testing Noise on Bald Eagle Behavior.</p>	<p>Brown, B. T., et al, 1999, The influence of weapons-testing noise on bald eagle behavior. Journal of Raptor Research, 33(3): 227-232</p>	<p>Minor/No impacts. We studied the influence of weapons-testing noise on bald eagle (<i>Haliaeetus leucocephalus</i>) behavior at the Aberdeen Proving Ground (APG), Maryland, in 1995. Our objectives were to document and compare eagle behavior at times with and without weapons-testing noise, determine if the frequency of behavior after noise increased with increasing sound levels and compare nest success and productivity on APG with that of adjacent areas of Maryland. Most roosting (72.7%) and nesting (92.7%) eagles showed no activity (i.e., perched motionless) in the 2-sec interval following weapons-testing noise. The most frequent activity following noise was a head turn, exhibited by 18.2% of roosting and 0.7% of nesting eagles; other eagle activities following noise (e.g., body movement, vocalization and flight) were rare at both roosts (9.1%) and nests (6.6%). Frequency of activity after noise differed between adults and juveniles at nests, but did not differ between adults and immatures at roosts. Activity after noise occurred significantly more in roosting than nesting eagles. For roosting eagles, frequency of activity after noise was similar to activity at times without noise. Frequency of no activity versus activity after noise did not vary at sound intensity levels >or= 110 and < 110 dB for either nesting or roosting eagles. Nest success and productivity on APG did not differ from nest success and productivity in adjacent counties of Maryland from 1990-95, suggesting that weapons-testing noise did not influence eagle reproduction at the population level.</p>
<p>Effects of Ecotourists on Bird Behaviour At Loxahatchee National Wildlife Refuge, Florida</p>	<p>Burger, J; Gochfeld, M., 1998, "Effects of ecotourists on bird behaviour at Loxahatchee National Wildlife Refuge, Florida," Environmental Conservation Vol. 25, no. 1, pp. 13-21</p> <p>Notes: sound levels subjective estimates</p>	<p>Increasingly, natural areas are exposed to people who come to view, study or photograph wildlife. In order to develop appropriate management plans for both avian and human use of natural environments it is essential to understand how people affect foraging birds. The foraging behaviour of five species of water-birds at Loxahatchee (Arthur B. Marshall National Wildlife Refuge), part of the Everglades, in Southern Florida was observed, between 1992 and 1994, from a dike that received many visitors. Species examined included common gallinule (<i>Gallinula chloropus</i>), sera rail (<i>Porzana carolina</i>), glossy ibis (<i>Plegadis falcinellus</i>), little blue heron (<i>Egretta caerulea</i>) and Louisiana heron (<i>E. tricolor</i>). These birds were observed before people were near, while people were present, and following the departure of people. Variation in feeding behaviour was largely explained by whether people were present, the number of people present, and the amount of noise made by the people. For all species, time devoted to feeding and number of strikes or pecks decreased while people were present. The percentage of time spent foraging and the number of strikes decreased as the noise made by</p>

<p>Effect of Anthropogenic Low-Frequency Noise on the Foraging Ecology of Balaeoptera Whales</p>	<p>Croll, Donald A. et.al., 2001, Effect of anthropogenic low-frequency noise on the foraging ecology of Balaeoptera whales Animal Conservation, 4 (1): 13-27</p>	<p>people increased. Birds that were closer to the path flew away from people more often than birds that were further away. Birds usually swam or flew away from the path while people were present. Researchers conducted a field experiment to test the effects of loud, low-frequency noise on foraging fin and blue whales off San Nicolas Island, California. Naive observers used a combination of attached tracking devices, ship-based surveys, aerial surveys, photo-identification, and passive monitoring of vocal behavior to examine the behavior and distribution of whales when a loud low-frequency source was and was not transmitting. During transmission, 12-30 percent of the estimated received levels of LFA of whales in the study area exceeded 140 dB re 1µPa. However, the whales continued to be seen foraging in the region. Overall, whale encounter rates and diving behavior appeared to be more strongly linked to changes in prey abundance associated with oceanographic parameters than to low-frequency sound transmissions</p>
<p>Vigilance Behaviour of Polar Bears (Ursus Maritimus) in the Context of Wildlife-Viewing Activities At Churchill, Manitoba, Canada</p>	<p>Dyck, MG; Baydack, RK, 2004, "Vigilance behaviour of polar bears (Ursus maritimus) in the context of wildlife-viewing activities at Churchill, Manitoba, Canada" Biological Conservation Vol. 116, no. 3, pp. 343-350 Notes: no sound analysis</p>	<p>Viewing of polar bears (Ursus maritimus) from tundra vehicles has been offered at Churchill, Manitoba since the early 1980s. This form of wildlife viewing has provided a unique and safe way for tourists to learn about polar bears. However, these activities have largely been carried out without examining possible effects on polar bear behaviour. We studied vigilance behaviour (a scanning of the immediate vicinity and beyond) of resting polar bears to evaluate impacts from tundra vehicle activity. Focal animal sampling was used to examine whether a difference in vigilance behaviour existed when vehicles were present. We recorded the numbers of head-ups, vigilance bout length, and between-bout intervals for polar bears. In general, the frequency of head-ups increased, and the between-bout intervals decreased for male bears, when vehicles were present. Female bears behaved opposite to males. The vigilance bout lengths did not differ significantly between vehicle presence and absence. Vigilance behaviour of male bears was not magnified with increasing numbers of vehicles; therefore the threshold is one vehicle. We suggest that manipulative studies be conducted to examine how distances between vehicles and bears, tundra vehicle activity in the immediate vicinity of a bear during viewing, and noise of tourists affect increased vigilance</p>
<p>Underwater Noise Of Whale-Watching Boats and Potential Effects On Killer Whales (Orcinus Orca), Based On An Acoustic Impact Model</p>	<p>Erbe, Christine, 2002, Underwater noise of whale-watching boats and potential effects on killer whales (Orcinus orca), based on an acoustic impact model Marine Mammal Science, 18(2): 394-418</p>	<p>Underwater noise of whale-watching boats was recorded in the popular killer whale-watching region of southern British Columbia and northwestern Washington State. A software sound propagation and impact assessment model was applied to estimate zones around whale-watching boats where boat noise was audible to killer whales, where it interfered with their communication, where it caused behavioral avoidance, and where it possibly caused hearing loss. Boat source levels ranged from 145 to 169 dB re 1 [µm]Pa (@) 1 m, increasing with speed. The noise of fast-boats was modeled to be audible to killer whales over 16 km, to mask killer whale calls over 14</p>

<p>Logging Truck Noise Near Nesting Northern Goshawks</p>		<p>km. to elicit a behavioral response over 200 m. and to cause a temporary threshold shift (TTS) in hearing of 5 dB after 30-50 min within 450 m. For boats cruising at slow speeds, the predicted ranges were 1 km for audibility and masking, 50 m for behavioral responses, and 20 m for TTS. Superposed noise levels of a number of boats circulating around or following the whales were close to the critical level assumed to cause a permanent hearing loss over prolonged exposures. These data should be useful in developing whale-watching regulations. This study also gave lower estimates of killer whale call source levels of 105-124 dB re 1 [mu]Pa.</p>
<p>The Effect of Vessel Noise on The Vocal Behavior of Belugas in The St. Lawrence River Estuary, Canada</p>	<p>Grubb, Teryl G., et.al., 1998, Logging truck noise near nesting northern goshawks U.S. Forest Service. Research Note R M, No. 3: 2pp</p> <p>Lesage, Veronique, 1999, The effect of vessel noise on the vocal behavior of belugas in the St. Lawrence River Estuary, Canada Marine Mammal Science, 15(1): 65-84</p>	<p>Data suggest that nesting northern goshawks are not disturbed by noise from logging trucks passing >400 m away from nesting sites.</p>
<p>The Underwater Noise of Vessels in the Hervey Bay (Queensland) Whale Watch Fleet and its Impact on Humpback Whales</p>	<p>McCauley, Robert D.; Cato, 2001, Douglas H. The underwater noise of vessels in the Hervey Bay (Queensland) whale watch fleet and its impact on humpback whales The Journal of the Acoustical Society of America, 109(5, Pt. 2); p. 2455</p>	<p>The impact of noise from a small motorboat and a ferry on the vocalizations of belugas was studied during June and July 1991 in the St. Lawrence River, Canada. When the boats were approaching the calling rate decreased, with brief increases in the emission of falling tonal calls. When boats were less than a kilometer away, vocalization rate increased. Frequency bands used by vocalizing belugas shifted from 3.6 kHz to 5.2-8.8 kHz when the boats drew nearer</p> <p>1994 the underwater noise of 19 vessels involved in whale watching was measured. Vessels ranged from 1.5-70 tons and included yachts, runabouts and high-speed and displacement mono and multihulls. Except for one water-jet trimaran, all vessels were propeller driven. Unlike the directional patterns reported for merchant shipping, each vessel projected lobes of sound fore and aft with lower levels abeam. In the high speed planing vessels this was exacerbated by the deep propellers exposed for ward, and the vessel squat while on the plane. All vessels displayed a linear relationship with broadband noise level and the logarithm of speed. Although unique for each vessel, as a rule of thumb doubling the speed doubled the detection range. The response of whales to vessel noise was as much a function of the rate of change of noise as its steady level. Rapid increases in noise produced more responses. Vessels which, by their design, required constant maneuvering to maintain station produced greater adverse responses from whales. Some design criteria important in reducing noise impacts from whale watch vessels include shielding of the propellers in the forward direction, windage in relation to draft, slow speed steerage, machinery noise reduction and passenger viewing access.</p>
<p>A GPS-Based Method to Examine Wolf Response to Loud Noise</p>	<p>Merrill, SB; Erickson, CR, 2003, "A GPS-based method to examine wolf response to loud noise" Wildlife Society Bulletin Vol. 31, no. 3, pp. 769-773</p>	<p>We used Global Positioning System (GPS) telemetry data to examine responses of a breeding male and 2 yearling wolves (Canis lupus) to military firing at Camp Ripley National Guard Training Site in Little Falls, Minnesota. Two of 3 wolves showed movements toward firing points more often than expected. Movements toward firing points were</p>

	<p>Notes: no sound analysis</p> <p>Conclusion: Wolves move towards firing points</p>	<p>more frequent when wolves were <5 km from the firing point before firing began. The breeding male moved toward firing points more often than the 2 yearlings. The method developed in this study could be useful for identifying tolerance thresholds in other wildlife species and for determining whether thresholds change when animals adjust to human activities.</p>
<p>Buffer-Zone Distances to Protect Foraging and Loafing Waterbirds from Disturbance by Personal Watercraft and Outboard-Powered Boats</p>	<p>Rodgers, JA; Schwikert, ST, 2002, "Buffer-Zone Distances to Protect Foraging and Loafing Waterbirds from Disturbance by Personal Watercraft and Outboard-Powered Boats," Conservation Biology Vol. 16, no. 1, pp. 216-224.</p> <p>Notes: dB(A), visual and auditory disturbance confounded</p>	<p>Outdoor recreation and ecotourism can have negative effects on wildlife species, so it is important to determine buffer zones within which activities near critical wildlife areas are limited. We exposed 23 species of waterbirds (Pelicaniformes, Ciconiiformes, Falconiformes, Charadriiformes) to the direct approach of a personal watercraft (PWC) and all outboard-powered boat to determine their flush distances. We used 11 sites with a mixture of low, moderate, and high amounts of human activity along the east and west coasts of Florida during September-November 1998 and April-June 1999. We detected considerable variation in flush distances among individuals within the same species and among species in response to both types of vessels. Average flush distances for the PWC ranged from 19.5 m (Least Tern [<i>Sterna antillarum</i>]) to 49.5 m (Osprey [<i>Pandion haliaetus</i>]), whereas average flush distances for the outboard-powered boat ranged from 23.4 m (Forster's Tern [<i>S. forsteri</i>]) to 57.9 m (Osprey). Larger species generally exhibited greater average flush distances for both types of watercraft. A comparison of the flush distances elicited by each watercraft indicated that only the Great Blue Heron (<i>Ardea herodias</i>) exhibited significantly larger flush distances (t test, $p < 0.01$) in response to the approach of the PWC than in response to the outboard, whereas four species (Anhinga [<i>Anhinga anhinga</i>], Little Blue Heron [<i>Egretta caerulea</i>], Willet [<i>Catoptrophorus semipalmatus</i>], and Osprey) exhibited significantly larger flush distances (t test, $p < 0.05$) in response to the approach of the outboard-powered boat than in response to the PWC. Eleven species (68.8%) showed no significant difference (t test $p > 0.05$) in their flush distances in response to the fast-moving PWC and the outboard-powered boat. Our data suggest that a single buffer-zone distance can be developed for both PWC and outboard-powered vessels. Buffer zones of 180 m for wading birds, 140 m for terns and gulls, 100 m for Plovers and sandpipers, and 150 m for ospreys would minimize their disturbance at foraging and loafing sites in Florida.</p>
<p>Reactions of Seals to Underwater Playbacks of Drilling and Icebreaker Noise</p>	<p>Smullea, M. A., et al. 2000, Reactions of seals to underwater playbacks of drilling and icebreaker noise Northwestern Naturalist, 81 (2): 87, 2000.</p>	<p>Few previous data are available on reactions of seals to noise from offshore oil exploration and production activities. In this paper, the authors describe observed reactions of ringed (Phoca hispida) and bearded seals (Erignathus barbatus) to drilling and icebreaker sounds projected underwater along ice edges during spring in the Alaskan Beaufort Sea. Given plans and the potential for development of offshore oil resources in this region and elsewhere, such information is</p>

		<p>important in assessing potential impacts of these activities on marine mammals. Ice-based observations were conducted during spring 1989-91 and 1994 off Pt. Barrow, Alaska. The authors observed 88 seal groups during a total of 74 h of drilling sound playback, 45 groups during 40 h of icebreaker playback, and 111 during 213 h while the projector was silent. During both playback and quiet periods, most seals surfaced briefly and then dove at distances of 25-500 m from the projector site. During playbacks, more seals were sighted but they departed sooner. Some seals approached the operating projector. Seals apparently avoided the area within 20-25 m of the operating projector, where broadband received levels below the surface were high. Results suggest that some seals tolerate moderately strong (up to at least 50 dB above ambient) underwater noise from simulated drilling and icebreaking.</p>
<p>Separating the Noise From the Noise: A Finding in Support of the "Niche Hypothesis," That Birds are Influenced by Human-Induced Noise in Natural Habitats.</p>	<p>Stone, Eric, 2000, Separating the noise from the noise: a finding in support of the "Niche Hypothesis," that birds are influenced by human-induced noise in natural habitats. Anthrozoos, 13(4): 225-231</p>	<p>Controlling for the confounding influence of physical disturbance, it was possible to test the hypothesis that ambient noise alone would play a role in structuring bird communities in riparian habitats in Boulder, Colorado, USA. Point counts of birds were conducted in open space/minimally disturbed, residential, commercial and industrial neighborhoods. Within the same disturbance parameters and land use, species richness and PIF scores (a weighted value based on species importance) consistently and significantly decreased as ambient noise increased. These results can be viewed as support for the "Niche Hypothesis" (Krause 1987, 1998), that wildlife species' acoustic niches are adversely affected by human-induced noise pollution</p>
<p>Boat Traffic Affects the Acoustic Behaviour of Pacific Humpback Dolphins, <i>Sousa Chinensis</i></p>	<p>Van Parijs, Sofie M.; Corkeron, Peter J, 2001, Boat traffic affects the acoustic behaviour of Pacific humpback dolphins, <i>Sousa chinensis</i> Marine Biological Association of the United Kingdom. Journal, 81(3): 533-538</p>	<p>In this study, the indirect (i.e. boats not involved in dolphin viewing activities) impacts of boat traffic on the acoustic behaviour of Pacific humpback dolphins, <i>Sousa chinensis</i>, were assessed in Moreton Bay, Australia. Humpback dolphin acoustic behaviour is affected by transiting boat traffic. Boats' passage did not affect the rates at which dolphins produced click trains and burst/pulse vocalizations. However, dolphins significantly increased their rate of whistling immediately after a boat moved through the area. This increase occurred only when boats were less than 1.5 km from the groups. Groups including mother-calf pairs showed an increase in whistles in response to boats' passage. Groups with no calves produced significantly fewer whistles. This evidence suggests that the noise from transiting vessels affects dolphins' group cohesion. Mother-calf pairs appear to be most disturbed by transiting vessels and exhibit an increased need to re-establish vocal contact</p>
<p>Overflights and Aircraft Noise</p>		
<p>Response of Nesting Red-</p>	<p>Andersen D E.; Rongstad O J.;and Mytton W R., 1986,</p>	<p>Low-level helicopter overflights of 35 Red-tailed Hawk (<i>Buteo jamaicensis</i>) nests were conducted at two study areas in southeastern</p>

<p>Tailed Hawks to Helicopter Overflights</p>	<p>“Response of Nesting Red-Tailed Hawks to Helicopter Overflights” Condor, 91(2), 296-299. Notes: N = 35 nests. Behavioral study, sound level not estimated</p>	<p>and east-central Colorado in 1984 and 1985. Red-tailed Hawks nesting where low-level air traffic was nonexistent prior to 1983 exhibited stronger avoidance behavior than did hawks nesting where helicopter activity had occurred since the late 1950s. Nine (53%) of 17 birds in the first study area flushed from the nest while only one (8%) of 12 birds in the second study area flushed. Age of nestlings at the time an overflight occurred did not influence avoidance behavior, and overflights did not appear to influence nesting success at either study area. Our results are consistent with the hypothesis that Red-tailed Hawks habituate to low-level air traffic during the nesting period. However, naive birds may respond negatively to low-level helicopter activity prior to habituation and other species of raptors may respond differently than Red-tailed Hawks</p>
<p>Effects of Fixed-Wing Military Aircraft Noise on California Gnatcatcher Reproduction</p>	<p>Aubrey, F. and Hunsaker, D., 1997, Effects of fixed-wing military aircraft noise on California gnatcatcher reproduction The Journal of the Acoustical Society of America, 102(5pt.2): 3177</p>	<p>To test the assumption that high levels of aircraft noise impede bird reproduction, noise analyzers were placed for 1 week in the nesting territory of each of 39 California gnatcatcher pairs on Naval Air Station Miramar. The 1-week average sound levels (7DL) recorded in those nesting territories were then related to the number of nest attempts; number of eggs laid; number of chicks hatched; number of chicks fledged; and number of eggs, chicks, and fledglings per nest attempt. Nest attempts and eggs laid have weak negative correlations ($p=0.14$ and 0.28) with 7DL. That is, the birds may tend to build fewer nests and lay fewer eggs in noisier areas, which is consistent with the common observation that bird nesting is more easily disturbed before eggs are laid than after. None of the other indicators is correlated with sound levels. Once a nest is established, with eggs in it, military aircraft noise has no detectable influence on reproductive performance. Gnatcatchers reproduced in places where 1 HL exceeds 80 dB for several hours every day. If fixed-wing aircraft noise impedes California gnatcatcher reproduction, it is overwhelmed by such factors as disturbance, predation, weather, edge effects, and differences in quality of habitat.</p>
<p>Responses of Mountain Sheep to Helicopter Surveys.</p>	<p>Bleich, V. C., R. T. Bowyer, A. M. Pauli, R. L. Vernoy, and R. W. Anthes, 1990, “Responses of mountain sheep to helicopter surveys.” California Fish and Game 76:197-204.</p>	<p>Effects of helicopter surveys on distribution and movements of desert-dwelling mountain sheep. Ovis canadensis, were studied in San Bernardino County, California during April and June 1988. Adult males and females with radio collars moved about 2.5 times farther the day following a helicopter survey than on the previous day. Further, 35-52% of these animals changed polygons (8-83 km²) following sampling from a helicopter, whereas only 11% did so the day prior to the survey. Likewise, some animals left the study area following surveys. Sampling intensity (0.8 min/km² vs. 2.0 min/km²) had little effect on movement of mountain sheep. Similarly, terrain type (steep vs. rolling) did not influence movement of female mountain sheep following helicopter surveys. Movement of mountain sheep during a helicopter survey may violate fundamental assumptions of several population estimators.</p>

<p>Mountain Sheep (<i>Ovis Canadensis</i>) and Helicopter Surveys: Ramifications for the Conservation of Large Mammals.</p>	<p>Bleich, V. C., et al., 1994, "Mountain Sheep (<i>Ovis Canadensis</i>) and Helicopter Surveys: Ramifications for the Conservation of Large Mammals." Biological Conservation Vol. 70 pp. 1-7</p> <p>Notes: N = 36 (20 males, 16 females) Behavioral study, sound level not estimated</p>	<p>Mountain sheep <i>Ovis canadensis</i> respond dramatically to helicopter disturbance. Significantly more animals abandoned sampling blocks and moved farther during helicopter surveys than on nonsurvey days throughout the year. Likewise, mountain sheep changed the vegetation type they occurred in more often after than before helicopter surveys; however, this difference was only significant during spring. Mountain sheep did not habituate or become sensitized to repeated helicopter overflights; time since capture was not related to their movements. The negative influence of the helicopter was extreme and may override variables that might otherwise be correlated with movement patterns of mountain sheep; this outcome also may hold for other ungulates. Further, sampling with helicopters may result in the violation of fundamental assumptions of population estimators routinely employed in conservation efforts for large mammals. The consequences of disturbing mountain sheep, such as altering use of habitat, increasing susceptibility to predation, or increasing nutritional stress, need additional study. These factors all have ramifications for the conservation of mountain sheep and other large mammals disturbed by helicopter sampling.</p>
<p>Effects of Simulated Aircraft Noise on Hearing, Food Detection, and Predator Avoidance Behavior of the Kit Fox, <i>Vulpes macrotis</i>.</p>	<p>Bowles A. E and Jon F., 1993, "Effects of simulated aircraft noise on hearing, food detection, and predator avoidance behavior of the kit fox, <i>Vulpes macrotis</i>." Paper ASA 125th Meeting Ottawa"</p>	<p>Four kit foxes were captured south of Gila Bend, Arizona, in an area not overflown by aircraft. Hearing thresholds were measured by startle inhibition with a San Diego Instruments Startle Recording System. Shaped 200-ms tone bursts ranging from 100 Hz to 40 kHz in octave steps were delivered using a step-up, step-down procedure. Startle responses were elicited by a 40-psi air puff 30 ms in duration following 100 ms after the tone burst and startle intensity and latency were measured. Threshold at best frequency lay between -10 and -15 dB re: 20 (mu)Pa at 2-4 kHz and declined rapidly below 1 kHz and above 20 kHz. Foxes were trained to identify simulated prey and predator noise at the minimum level required for detection. Latencies to respond were measured in the absence and presence of simulated aircraft noise, simulated by recordings of F-4 fighter aircraft played for 40 min at 96 dB re: 20 (mu)Pa with onset rate of 25 dB/s. Foxes were also exposed to aircraft noise for 3 h while asleep during the day. Results available to date indicate that foxes can detect test signals and respond in the presence of aircraft noise; latencies to response are altered during tests but not after, and no changes in activity are detected during daytime exposures.</p>
<p>Sonic Boom/Animal Stress Project Report on Elk, Antelope, and Rocky Mountain Bighorn Sheep.</p>	<p>Bunch T. D and Workman, G. W, 1993, "Sonic boom/animal stress project report on elk, antelope, and Rocky Mountain bighorn sheep." Paper ASA 125th Meeting Ottawa</p>	<p>The experimental animals included elk, antelope, and Rocky Mountain bighorn sheep. These animals were instrumented with heart rate and body temperature transmitters, which were surgically implanted in the animals. The animals were released in large enclosures, and in some cases were released to the wild for disturbance tests. This was done to determine effects of various disturbances on heart rate and to</p>

<p>Mountain Bighorn Sheep.</p>		<p>establish a baseline physiologic database of normal heart rate and body temperature. The animals were subjected to various types of disturbances, including people on foot, motorcycles, four-wheeled vehicles, fixed wing aircraft, helicopters, and F-16 jet aircraft flown subsonic and supersonic, etc. These projects indicated that animals habituated to most disturbance factors in a short period of time. The exceptions included people on foot who entered the research enclosures where the animals were kept; fixed wing aircraft at low levels of flight; and helicopter flights at low elevations near the animal enclosures. The animals habituated to subsonic and supersonic jet overflights after about four passes over the animals. This habituation seemed to be permanent, as these same animals did not respond when tested at a later date.</p>
<p>Effects of Aircraft Noise on Time-Activity Budgets of Wintering Black Ducks.</p>	<p>Collazo, J and Fleming, J., 1993, "Effects of aircraft noise on time-activity budgets of wintering black ducks" Paper ASA 125th Meeting Ottawa</p>	<p>The primary goal of this study was to determine if the time-activity budget (TAB) of wintering black ducks (<i>Anas rubripes</i>) was significantly altered by military aircraft noise at the U. S. Marine Corps target range in Piney Island, North Carolina. Sound levels were measured concurrently with behavioral observations. Over a sampling period of 81 days, exceedances >80 dB occurred on 289 occasions, the mean duration of exceedances was 5.09 s, and the mean sound pressure was 85.7 dB. Black ducks spent between 0.2% and 0.5% of their time reacting to aircraft. Correspondingly, the energetic costs of these reactions were low. TABs of black ducks in the high noise environment of Piney Island were within the expected range of those in low noise environments based on published literature. In a follow-up study, captive black ducks were subjected to simulated jet noise at levels approximately those recorded in the field. Measured levels of reactions to noise stimuli indicated that ducks habituated within 1 day. These results suggest that low reaction levels recorded in the field reflect the species' habituation capabilities to some kinds of disturbance. [Work supported by USMC and USAF.]</p>
<p>Dabbling Duck Behavior and Aircraft Activity in Coastal North Carolina</p>	<p>Conomy, John T., et. al., 1998, "Dabbling Duck Behavior and Aircraft Activity in Coastal North Carolina" Journal of Wildlife Management, vol. 62, no. 3, pp. 1127-1134 Notes: N = 311 duck/overflight observations. Recorded sound levels of overflights, 85 dB(A)</p>	<p>Requests to increase military aircraft activity in some training facilities in the United States have prompted the need to determine if waterfowl and other wildlife are adversely affected by aircraft disturbance. We quantified behavioral responses of wintering American black ducks (<i>Anas rubripes</i>), American wigeon (<i>A. americana</i>), gadwall (<i>A. strepera</i>), and American green-winged teal (<i>A. crecca carolinensis</i>) exposed to low-level flying military aircrafts at Piney and Cedar islands, North Carolina, in 1991 and 1992. Waterfowl spent 1.4% of their time responding to aircraft, which included flying, swimming, and alert behaviors. Mean duration of responses by species ranged from 10 to 40 sec. Costs to each species were deemed low because disruptions represented a low percentage of their time-activity budgets, only a small proportion of birds reacted to disturbance (13/672; 2%), and the likelihood of resuming the activity disrupted by</p>

	<p>Comony, JT; Dubovsky, JA; Collazo, JA; Fleming, WJ, 1998, "Do black ducks and wood ducks habituate to aircraft disturbance" Journal of Wildlife Management Vol. 62, no. 3, pp. 1135-1142</p> <p>Notes: An aircraft disturbance was quantified as an overflight that exceeded 80 dB(A).</p>	<p>an aircraft disturbance event was high (64%). Recorded levels of aircraft disturbance (i.e., x = 85.1 dBA) were not adversely affecting the time-activity budgets of selected waterfowl species wintering at Piney and Cedar islands</p> <p>Requests to increase military aircraft activity in some training facilities in the United States have prompted the need to determine if waterfowl and other wildlife are adversely affected by aircraft disturbance. We quantified behavioral responses of wintering American black ducks (Anas rubripes), American wigeon (A. americana), gadwall (A. strepera), and American green-winged teal (A. crecca carolinensis) exposed to low-level flying military aircrafts at Piney and Cedar islands, North Carolina, in 1991 and 1992. Waterfowl spent 1.4% of their time responding to aircraft, which included flying, swimming, and alert behaviors. Mean duration of responses by species ranged from 10 to 40 sec. Costs to each species were deemed low because disruptions represented a low percentage of their time-activity budgets, only a small proportion of birds reacted to disturbance (13/672; 2%), and the likelihood of resuming the activity disrupted by an aircraft disturbance event was high (64%). Recorded levels of aircraft disturbance (i.e., x = 85.1 dBA) were not adversely affecting the time-activity budgets of selected waterfowl species wintering at Piney and Cedar islands.</p>
<p>Do Black Ducks and Wood Ducks Habituate to Aircraft Disturbance</p>	<p>Cote, S.D., 1996, "Mountain Goat Responses to Helicopter Disturbance" Wildlife Society Bulletin Vol. 24 pp. 681-685</p> <p>Notes: N = 109 animals (98 marked), including 9 adult males, 43 adult females, 8 two-year old males, 10 two-year-old females, 13 yearling females and 24 kids.</p> <p>Date, time and helicopter model noted but sound level not estimated.</p>	<p>Mountain goat (Oreamnos americanus) responses to helicopter traffic were investigated at Caw Ridge (Alberta) from June to August 1995. A population of 109 marked individuals inhabited the ridge during the study. As measured by their overt responses, mountain goats were disturbed by 58% of the flights and were more adversely affected when helicopters flew within 500 m. Eighty-five percent of flights within 500 m caused the goats to move >100 m; 9% of the flights >1 500 m away caused the goats to move similar distances. Helicopter visibility and height above ground, number of goats in the group, group type (bachelor or nursery), and behavior of groups just prior to helicopter flights did not appear to influence reactions of goats to helicopters. Helicopter flights caused the disintegration of social groups on greater than or equal to 5 occasions and resulted in 1 case of severe injury to an adult female. Based on these observations, restriction of helicopter flights within 2 km of alpine areas and cliffs that support mountain goat populations is recommended.</p>
<p>Mountain Goat Responses to Helicopter Disturbance.</p>	<p>Defenders of Wildlife, 1994. Unfriendly Skies : the threat of military overflights to national wildlife refuges Washington, D.C</p> <p>Delaney, D. K., L. L. Pater, R. H. Melton, B. A. MacAllister, R. J. Dooling, R. Lohr, B. F. Brittan-Powe, L. L. Swindell, T.</p>	<p>This report shows that military flights disturb wildlife on at least 35 National Wildlife refuges. It discusses the impact these overflights have on the wildlife in these areas.</p> <p>Assessed the effects of military training noise on red-cockaded woodpeckers. Disturbed and undisturbed nest sites did not differ significantly in the number of eggs, number of nestlings, or number of</p>
<p>Unfriendly Skies : The Threat of Military Overflights to National Wildlife Refuges</p> <p>Assessment of training noise on the red-cockaded</p>		

<p>woodpecker: final report</p>	<p>A. Beaty, L. D. Carhile, and E. W. Spadgenske, 2002. SERDP Project CS-1083.</p>	<p>young fledged. 7 of 25 nesting attempts at disturbed sites were second attempts, none of the 16 nesting attempts at undisturbed sites were second attempts (n. s., p>.05). Noise recorded in cavities was up to 15 dB louder (at 250 Hz) than levels recorded at the base of the same tree. No flushes at SEL noise levels below 87 dB_A or beyond 1800m for large caliber noise. No flush when small arms were >1000m or SEL less than 63 dB_A. 83 helicopter passes during 45 data sessions at 19 RCW clusters failed to elicit a flush response, at distances as low as 30m and sound levels of 102 dB unweighted. Studies that have examined the effects of aircraft activity on nesting birds (e.g., Platt 1977; Windsor 1977; Ellis 1981; Anderson et al. 1989; Delaney et al. 1999) have often noted a slight but insignificant decrease in nesting success and productivity for disturbed versus undisturbed nests. Anderson et al. (1989) reported that two of 29 Red-tailed Hawk nests were abandoned after being flushed by helicopter flights, compared with zero of 12 control nests. Ellis et al. (1991) found only one of 19 Prairie Falcon (<i>Falco mexicanus</i>) nests were abandoned when exposed to frequent low-altitude jet flights during the nesting season (no control sites used). Platt (1977) reported similar rates with only one of 11 Gyrfalcon (<i>F. rusticolus</i>) nests failing (reportedly due to snow damage), compared with zero of 12 control nests. Of the six Peregrine Falcon (<i>F. peregrinus</i>) nests exposed to helicopter flights, only one was abandoned (also apparently due to inclement weather) compared with zero of three control sites (Windsor 1977). Snyder et al. (1978) reported that Snail Kites (<i>Rostrhamus sociabilis</i>) did not flush even when noise levels were up to 105 decibels, A-weighted (dBA) from commercial jet traffic. This result was qualified by the fact that test birds were living near airports and may have habituated to the noise. Edwards et al. (1979) found a dose-response relationship for flush responses of several species of gallinaceous birds when approach distances were between 30 and 60 m and noise levels approximated 95 dBA. Brown et al. (1999) reported no difference in the frequency of Bald Eagle activity and non activity behaviors when noise levels were < 110 dBP (unweighted Peak) and > 110 dBP for either roosting or nesting eagles. Delaney et al. (1999) reported that Mexican Spotted Owls did not flush during the nesting season when the Sound Exposure Level (SEL) for helicopters was ≤ 102 owl-weighted, dBO (≤ 92 dBA) and the Equivalent Average Sound Level (LEQ) for chain saws was ≤ 59 dBO (≤ 46 dBA). Delaney et al. (2000, 2001) and Pa-ter et al. (1999) developed noise response thresholds for RCWs based on a number of military noise sources. Their preliminary results show that woodpeckers do not flush during the nesting season when the SEL for artillery simulators are < 89 dB, unweighted (< 84 dBA); 50-caliber blank fire was < 82 dB, unweighted (< 72 dBA); military helicopter overflights were < 102 dB, unweighted (< 85 dBA); small-caliber live fire events were < 79 dB, un-weighted (<</p>
--	--	--

<p>Effects of Helicopter Noise on Mexican Spotted Owls</p>	<p>Delaney, DK; Grubb, TG; Beier, P; Pater, LL; Reiser, MH, 1999, "Effects of helicopter noise on Mexican spotted owls," Journal of Wildlife Management Vol. 63, no. 1, pp. 60-76</p> <p>Notes: Sample size varied from 24 to 112 nest manipulations and 8-22 sites depending on year and manipulation. Abstract included detailed metric/methods information.</p>	<p>77 dBA); large-caliber live fire events were < 103 dB, unweighted (< 85 dBA); and grenade simulators were < 91 dB, unweighted (< 84 dBA).</p> <p>Military helicopter training over the Lincoln National Forest (LNF) in southcentral New Mexico has been severely limited to protect nesting Mexican spotted owls (<i>Strix occidentalis lucida</i>). To evaluate nesting and nonnesting spotted owl responses to helicopter noise, we measured flush frequency, flush distance, alert behavior, response duration, prey delivery rates, female trips from the nest, and nest attentiveness during manipulated and nonmanipulated periods, 1995-96. Chain saws were included in our manipulations to increase experimental options and to facilitate comparative results. We analyzed stimulus events by measuring noise levels as unweighted one-third-octave band levels, applying frequency weighting to the resultant spectra, and calculating the sound exposure level for total sound energy (SEL) and the 0.5-sec equivalent maximum energy level (LEQ max 0.5-sec) for helicopters, and the 10-sec equivalent average energy level (LEQ avg, 10-sec) for chain saws. An owl-weighting (dBO) curve was estimated to emphasize the middle frequency range where strigiform owls have the highest hearing sensitivity. Manipulated and nonmanipulated nest sites did not differ in reproductive success ($P = 0.59$) or the number of young fledged ($P = 0.12$). As stimulus distance decreased, spotted owl flush frequency increased, regardless of stimulus type or season. We recorded no spotted owl flushes when noise stimuli were >105 m away. Spotted owls returned to predisturbance behavior within 10-15 min after a stimulus event. All adult flushes during the nesting season occurred after juveniles had left the nest. Spotted owl flush rates in response to helicopters did not differ between nonnesting (13.3%) and nesting seasons (13.6%); $P = 0.34$. Spotted owls did not flush when the SEL noise level for helicopters was 10eq102 dBO (92 dBA) and the LEQ level for chain saws was 10eq49 dBO (46 dBA). Chain saws were more disturbing to spotted owls than helicopter flights at comparable distances. Our data indicate a 105-m buffer zone for helicopter overflights on the LNF would minimize spotted owl flush response and any potential effects on nesting activity.</p>
<p>Dall's Sheep Responses to Overflights by Helicopter and Fixed-Wing Aircraft</p>	<p>Frid, Alejandro, 2003, "Dall's Sheep Responses to Overflights by Helicopter and Fixed-Wing Aircraft," Biological Conservation Vol. 110 pp387-399</p> <p>Notes: N = Adult male focal groups: 18, Female-young focal groups: 38, Mother focal individuals: 48, Adult female without young focal individuals: 33.</p>	<p>High rates of behavioural disruption caused by human activities could jeopardize the body condition and reproductive success of wildlife. I exposed Dall's sheep (<i>Ovis dalli dalli</i>) of the Yukon Territory to experimental overflights by a fixed-wing aircraft and a helicopter. Aircraft approaches that were more direct (as determined by the aircraft's elevation and horizontal distance from sheep) were more likely to elicit fleeing or to disrupt resting. Latency to resume feeding or resting after fixed-wing overflights was longer during more direct approaches. During indirect approaches by helicopters, sheep far from</p>

	<p>Conclusions: Results indicate fixed-wing aircraft are less disturbing than helicopters. When minimum distance was \leq 0.5 km, all 25 groups of sheep studied fled during helicopter overflights but only 53-58% of 53 individual sheep closely studied ('focal' sheep) fled or interrupted rest during fixed-wing overflights.</p> <p>Giese, Melissa and Riddle, Martin, 1999 "Disturbance of emperor penguin <i>Aptenodytes forsteri</i> chicks by helicopters" Polar Biology. 22(6) 366-371.</p> <p>Notes: N = 1 group of 1100 chicks and 300 adults. Helicopter noise level, dB(A), estimated every 5 s during overflight.</p>	<p>rocky slopes were much more likely to flee than sheep on rocky slopes. Sheep did not flee while nearby helicopters flew along the opposite side of a ridge, presumably because the obstructive cover buffered disturbing stimuli. Results provide preliminary parameters for predicting energetic and fitness costs incurred as a function of overflight rates, and can help mitigate disturbance by guiding temporal and spatial restrictions to aircraft</p> <p>Creching emperor penguin (<i>Aptenodytes forsteri</i>) chicks were exposed to two overflights by a Sikorsky S-76, twin engine helicopter at 1000 m (3300 ft), a current operational guideline of the Australian Antarctic Division for helicopter activity in Antarctica. The flights were conducted on the same day but under different wind conditions: a morning flight with a 10-knot (18 km h⁻¹) katabatic wind blowing perpendicular to the direction of helicopter travel, and an afternoon flight with virtually no wind. Background noise levels recorded in the morning before the helicopter flight were significantly higher than in the afternoon, but these differences were not detectable when the helicopter was overhead. There were also no significant differences in the way chicks responded to helicopters between the morning and afternoon flight. All chicks became more vigilant when the helicopter approached and 69% either walked or ran, generally moving less than 10 m toward other chicks (i.e. not scattering). Most chicks (83%) displayed flipper-flapping, probably indicating nervous apprehension. This behaviour was seldom displayed in the absence of disturbance. Although all effects were relatively transitory, the results support the introduction of a more conservative guideline of 1500 m (5000 ft) minimum overflight altitude for helicopter operations around breeding localities of this species.</p>
<p>Mountain goat response to helicopter overflights in Alaska</p>	<p>Goldstein MI, Poe AJ, Cooper E, Yonkey D, Brown BA and McDonald TL, 2005, Mountain goat response to helicopter overflights in Alaska. Wildlife Society Bulletin 33(2):688-699.</p> <p>Notes: Claim to have assessed behavior every 10 seconds at a distance of 1.6 km with spotting scopes to arrive at 30.7 sec. recovery time.</p>	<p>The number of helicopter flights used to gain access to backcountry has increased in recent years. Biologists, land managers, and the public have expressed concern about disturbance impacts to mountain goats (<i>Oreamnos americanus</i>) resulting from helicopter activity. We recorded behavioral responses of 122 groups of mountain goats from 347 helicopter overflights at 4 geographic areas in Alaska and analyzed responses in relation to distance and angle from helicopters to mountain goats, reproductive class, season, and area of study. We used multinomial logistic regression modeling combined with a bootstrap randomization procedure to identify factors associated with increased probability of mountain goats being in 1 of the 4 behavioral response categories during helicopter overflights. The probability of a goat group being disturbed was inversely related to distance of the helicopter from the group. Odds of disturbance increased by a factor of 1.25 for every 100-m reduction in approach distance. Approach distances resulting in >90% probability of maintenance were significantly larger where mountain goats had received less prior</p>

<p>Dose-response relationships of harlequin duck behavior to noise from low-level military jet over-flights in central Labrador</p>	<p>Goudie RI and Jones IL, 2004, Dose-response relationships of harlequin duck behavior to noise from low-level military jet over-flights in central Labrador. Environmental Conservation 31(4):289-298</p> <p>Notes: N = 95 (treatment site), N = 45 (control site), level measurement in dB(A)</p>	<p>exposure to helicopters. When mountain goats were disturbed during overflights, a second analysis (i.e., gamma regression model with inverse link function) estimated elapsed time until mountain goats returned to maintenance behavior. The length of time that a goat remained in a disturbed state following overflight did not depend upon any of the covariates; mountain goats remained in a disturbed state for an average of 30.7 seconds (95% CI, 25.7–35.9 seconds). The results offer land managers an opportunity to evaluate risk for permitting helicopter activity.</p> <p>Concern for the lack of field studies on the effects of low-level military jet over-flights on wildlife resulted in directed research in the Military Training Area of Labrador, 1999–2002. At Fig River, a tributary of the Lower Churchill River, a before-after-control-impact (BACI) study design quantified effects of aircraft overflights on behaviour of individual harlequin ducks (<i>Histrionicus histrionicus</i>) in the 130 000km² Military Training Area of central Labrador. Noise generated from low-level passes (30–100m above ground level) by military jets was sudden in onset and high in amplitude (>100 dBA), substantially above background sound levels both at Fig Lake outlet (40–50 dBA) and rapid sections of Fig River (60–70 dBA). Harlequin ducks reacted to noise from military jets with alert behaviour, showing a positive dose-response that especially intensified when noise exceeded 80 dBA. Residual effects, in other words, deviations from normal behaviour patterns after initial responses, were decreased agonistic behaviour for up to 1.5 h after, and increased agonistic behaviour for up to 2 h after military jet over-flights. Direct behavioural responses to military jet over-flights were of short duration (generally <1 min), and were unlikely to affect critical behaviours such as feeding and resting in the overall time-activity budgets of breeding pairs. However, the presence of residual effects on behaviour implied whole-body stress responses that were potentially more serious; these require further study because they are potentially more detrimental than immediate responses, and may not be detected in studies that focus on readily observed overt responses. A dose-response curve relating particular behaviours of harlequin ducks to associated noise of over-flights could be a valuable conservation tool for the research and mitigation of environmental impacts of aircraft and other noise.</p>
<p>Multivariate behavioural response of harlequin ducks to aircraft disturbance in Labrador</p>	<p>Goudie RI, 2006, Multivariate behavioural response of harlequin ducks to aircraft disturbance in Labrador. Environmental Conservation 33(1):28-35</p> <p>Notes: N = 95 (treatment site), N = 45 (control site), level measurement in dB(A)</p>	<p>The effects of low-level aircraft over-flights on behaviour of harlequin ducks (<i>Histrionicus histrionicus</i>) breeding in central Labrador were quantified during 2000–2002. The Canadian Department of National Defence supports a low-level training programme in the 130 000 km² Military Training Area of Labrador involving military jets. The Institute for Environmental Monitoring and Research (IEMR) undertakes scientific research into environmental impacts of low-level military jet over-flights. A suite of 17 behavioural categories of paired male and</p>

		<p>female harlequin ducks was modelled, and a canonical variable representing alert behaviour, inactivity on the water, and decreased inactivity out of water in response to over-flights represented 73.1% of the variance in the data cluster and provided marked separation of disturbed and undisturbed groups. Behavioural responses of harlequin ducks to military jets were 23 times stronger than their responses to floatplanes, helicopters and military cargo planes, and the significant interaction of aircraft type and noise indicated that noise may be the primary stressor affecting behaviour. A quadratic response of the canonical variable to noise generated from aircraft during standardized 30-minute observation periods was defined. The multivariate analyses were more robust because they indicated covariance in behavioural categories associated with disturbance that was not originally detected in univariate analyses, suggesting the importance of integrating behaviours other than overt responses. The significant effects of military jet over-flights on harlequin duck behaviour emphasize the need to evaluate potential population consequences of aircraft disturbance.</p>
<p>A Technique for Dorsal Subcutaneous Implantation of Heart Rate Biotelemetry Transmitters in Black Ducks: Application in an Aircraft Noise Response Study</p>	<p>Harms, Craig A.; Fleming, W. James; and Stoskopf, Michael K., 1997, "A technique for dorsal subcutaneous implantation of heart rate biotelemetry transmitters in black ducks: Application in an aircraft noise response study" Condor. 99(1) 231-237.</p> <p>Notes: N = 6. Background noise level not reported</p>	<p>A technique for heart rate biotelemetry transmitter implantation was developed to monitor heart rate fluctuations of Black Ducks (Anas rubripes) in response to simulated aircraft noise in a large outdoor enclosure. A dorsal subcutaneous approach, with subcutaneous tunneling of lead wires, was employed for placement of the 32 g transmitters. A base-apex lead configuration, with leads anchored at the dorsal cervico-thoracic junction and the caudal keel, yielded the maximal ECG wave-form deflection for triggering the transmitter. Heart rates of six Black Ducks (three in each of two separate trials) were monitored for 3 days pre-noise to establish a baseline, and then for 4 days of simulated aircraft noise. The noise stimulus replicated an FB-111 military jet, and was played 48 times per day at a peak volume of 110 dB. Daily mean heart rates, used as indicators of metabolic rates, did not increase in response to noise. Recognizable acute heart rate increases corresponding with a noise event occurred with increased frequency during the first day of noise presentation, but on subsequent days the responses did not differ significantly from baseline. Acute heart rate responses to aircraft noise diminished rapidly, indicating the ability of Black Ducks to habituate to the auditory component of low altitude aircraft overflights.</p>
<p>Calving Success of Woodland Caribou Exposed to Low-level Jet Fighter Overflights</p>	<p>Harrington, F.H., Veitch, A.M., 1992, "Calving Success of Woodland Caribou Exposed to Low-level Jet Fighter Overflights" Arctic Vol. 45 pp. 213-218</p>	<p>Effects on woodland caribou (Rangifer tarandus caribou) of low-level military jet training at Canadian Forces Base - Goose Bay (Labrador) were studied during the 1986-88 training seasons. Calf survival was periodically monitored during 1987 and 1988 in a sample of 15 females wearing satellite-tracked radiocollars. During 1987, each female's exposure to low-level overflights was experimentally manipulated on a daily basis. In 1988, daily exposure was determined by analyzing jet flight tracks following the low-level flying season. Calf</p>

		<p>survival was monitored by survey flights every 3-4 weeks. A calf cow was accompanied by a calf, was negatively correlated with the female's exposure to low-level jet overflights during the calving and immediate post-calving period and again during the period of insect harassment during summer. No significant relationship between calf survival and exposure to low-level flying was seen during the pre-calving period, during the late post-calving period prior to insect harassment, and during fall. In view of the continued depression of population growth in the woodland caribou population within the low-level training area, jets should avoid overflying woodland caribou calving range at least during the last week of May and the first three weeks of June.</p>
<p>Military Jet Activity and Sonoran Pronghorn</p>	<p>Krausman, P. R., Harris, Lisa K., 2002, "Military Jet Activity and Sonoran Pronghorn." Zeitschrift Fuer Jagdwissenschaft. 48(Supplement). . 140-147.</p> <p>Notes: N = 15,339 observations of ~21 animals (4 radiocollared). Sound level not estimated</p>	<p>Forty percent of the habitat for the endangered Sonoran pronghorn (<i>Antilocapra americana sonoriensis</i>) in the United States is on the Barry M. Goldwater Range (BMGR), a bombing and gunnery range located in southwestern Arizona, USA. Wildlife and land managers have expressed concerns that military aircraft activity may be detrimental to Sonoran pronghorn. We observed the response of Sonoran pronghorn to military jet activity from 4 vantage points, BMGR from February 1998 to June 2000. We obtained behavioral observations on 172 days and obtained 44,773 observation events (i.e., 1 observation / 30 seconds). Pronghorn were exposed to 109 direct military overflights, but only 6 were <305 in above ground level. Overall, behavior of males and females was not significantly different and the presence of military aircraft did not cause changes in behavior.</p>
<p>The Effects of Aircraft Noise on Pronghorn and Other Species</p>	<p>Krausman, Paul R., Lisa K. Harris, and Jennifer S. Ashbeck, 1998, The Effects of Aircraft Noise on Pronghorn and Other Species Special report Cooperative National Park Resources Studies Unit (Tucson, Ariz.) School of Renewable Natural Resources, University of Arizona.</p>	<p>Out of Print - Searching for copy of report</p>
<p>Pronghorn Use of Areas With Varying Sound Pressure Levels</p>	<p>Krausman, Paul, 2003, Pronghorn use of areas with varying sound pressure levels Southwestern Naturalist, 48(4): 725-728</p> <p>Notes: N = 31 radiocollared animals. dB weighting not reported</p> <p>Conclusions: Pronghorn use quieter areas more than expected and louder areas less than expected.</p>	<p>The Sonoran pronghorn (<i>Antilocapra americana sonoriensis</i>), a subspecies in danger of extinction, inhabits an area of the Barry M. Goldwater Range (BMGR) in southwestern Arizona. Since 1941, BMGR has been a training site for military pilots. We evaluated whether this subspecies of pronghorn used areas, as defined by noise levels produced by military aircraft, in proportion to their availability. Radiocollar-equipped pronghorn were monitored during September 1994 to August 1998, and their locations were recorded on a map of sound levels. In general, pronghorn used areas with lower levels of noise (<lt;45 decibels (dB) more than expected and areas with higher levels (greater 55 dB) less than expected. More intensive monitoring, habitat influences, and additional measurements of noise in the area,</p>

<p>Effects of Jet Aircraft on Mountain Sheep</p>	<p>Krausman, PR; Wallace, MC; Hayes, CL; DeYoung, DW, 1998, "Effects of jet aircraft on mountain sheep" Journal of Wildlife Management Vol. 62, no. 4, pp. 1246-1254</p> <p>Notes: N = 12 (1 yearling female, 8 adult females, 1 yearling male and 4 adult males). dB weighting not reported</p>	<p>could produce a clearer picture of the factors that determine areas of use within the BLMGR by Sonoran pronghorn.</p> <p>Military-designated air spaces have been established above national parks and monuments, wildlife refuges, wilderness areas, and Department of Defense lands. Each of these landscapes is managed differently, which has led to questions of compatibility between military aircraft and wildlife. We determined the influence of F-16 aircraft overflights on mountain sheep (<i>Ovis canadensis nelsoni</i>) from January 1990 to May 1992 in the Desert National Wildlife Refuge, Nevada. We constructed a 320-ha enclosure and calibrated the area for sound pressure levels (i.e., noise) created by F-16 aircraft flying along the ridge line of the mountains in the enclosure, approximately 125 m above ground level. In May 1990, we placed 12 mountain sheep from the surrounding area in the enclosure and monitored their behavior and use of habitats for 1 year to ensure they were familiar with the area before they were subjected to aircraft overflights. The habitat use and activity of the sheep in the enclosure were similar to free-ranging conspecifics. In May 1991, we instrumented 5 mountain sheep with heart-rate monitors and added them to the enclosure. During May 1991 to May 1992, F-16 aircraft flew over the enclosure 149 times during 3 1-month periods. We recorded heart rate and behavior of sheep 15 min preoverflight, during the overflight, and postoverflight. Heart rate increased above preflight levels in 21 of 149 overflights but returned to preflight levels within 120 sec. When F-16 aircraft flew over the enclosure, the noise levels created did not alter behavior or use of habitat, or increase heart rates to the detriment of the sheep in the enclosure.</p>
<p>Short-term impacts of military overflights on caribou during the calving season</p>	<p>Lawler JP et al., 2005, Short-term impacts of military overflights on caribou during calving season. Journal of Wildlife Management 69(3):1133-1146</p>	<p>The Fortymile Caribou Herd (FCH) is the most prominent caribou herd in interior Alaska. A large portion of the FCH calving and summer range lies beneath heavily used Military Operations Areas (MOA) that are important for flight training. We observed the behavior of Grant's cow caribou (<i>Rangifer tarandus grantii</i>) and their calves before, during, and immediately following low-level military jet overflights. We also monitored movements of radiocollared cow caribou and survival of their calves. We conducted fieldwork from mid May through early June 2002. We concluded that military jet overflights did not cause deaths of caribou calves in the FCH during the calving period nor result in increased movements of cow-calf pairs over the 24-hour period following exposure to overflights. Short-term responses to overflights were generally mild in comparison to caribou reactions to predators or perceived predators. Caribou responses to overflights were variable, but responses were generally greater as slant distances decreased and jet speeds increased. A-10 jets caused less reaction than F-15s and F-16s. Although we found that short-term reactions of caribou to jet overflights were mild, we advise against assuming there are no long-term effects on calving caribou from jet overflights.</p>

<p>Modelling Energy and Reproductive Costs in Caribou Exposed to Low Flying Military Jet Aircraft</p> <p>Responses of Caribou to Overflights by Low-Altitude Jet Aircraft</p>	<p>Lutick, J. A., J. A. Kitchens, R. G. White, and S. M. Murphy, 1996, "Modelling energy and reproductive costs in caribou exposed to low flying military jet aircraft." Rangifer Special Issue 9: 209-211</p> <p>Maier, JAK; Murphy, SM; White, RG; Smith, MD, 1998, "Responses of caribou to overflights by low-altitude jet aircraft." Journal of Wildlife Management . Vol. 62, no. 2, pp. 752-766</p> <p>Notes: N = 10 collared caribou in two groups. Individual collared caribou were used as independent data points. dB(A) sound levels monitored with recording devices attached to radiocollars on caribou.</p>	<p>Requested Article Through Interlibrary Loan</p> <p>Military training exercises have increased in Alaska in recent years, and the possible effects of low-altitude overflights on wildlife such as barren-ground caribou (Rangifer tarandus) have caused concern among northern residents and resource agencies. We evaluated the effects of overflights by low-altitude, subsonic jet aircraft by U.S. Air Force (USAF) A-10, F-15, and F-16 jets on daily activity and movements of free-ranging female caribou. This study was conducted on caribou of the Delta Caribou Herd in interior Alaska during each of 3 seasons in 1991: late winter, postcalving, and insect harassment. Noise levels experienced by caribou were measured with Animal Noise Monitors (ANMs) attached to radiocollars. Caribou subjected to overflights in late winter interrupted resting bouts and consequently engaged in a greater number of resting bouts than caribou not subjected to overflights ($P = 0.05$). Caribou subjected to overflights during postcalving were more active ($P = 0.03$) and moved farther ($P = 0.01$) than did caribou not subjected to overflights. Caribou subjected to overflights during the insect season responded by becoming more active ($P = 0.01$). Responses of caribou to aircraft were mild in late winter, intermediate in the insect season, and strongest during postcalving. We conclude that females with young exhibit the most sensitive response to aircraft disturbance. Accordingly, military training exercises should be curtailed in areas where caribou are concentrated during calving and postcalving.</p>
<p>Nursing By Muskox Calves Before During and After Helicopter Overflights</p>	<p>Miller F L; Gunn A.; and Barry S J.; 1988, "Nursing By Muskox Calves Before During And After Helicopter Overflights" Arctic. 41(3) 231-235.</p>	<p>Nursing bouts by 15 muskox (Ovibos moschatus) calves were measured to evaluate potential use of nursing behaviour as an indicator of muskox responses to helicopters. The muskox calves nursed 225 times during 313 hours of observation: 63% under undisturbed conditions; 12% when helicopter overflights took place; and 25% following those overflights. During exposure to the helicopter, the calf moved to the cow and then sometimes took the opportunity to nurse. Younger calves nursed relatively longer and more often than older calves; they also performed 68% of the nursings that occurred during helicopter overflights. Frequency and duration of nursing bouts are known to be related to the age of calves. This paper demonstrates that these aspects of nursing vary within or among muskox herds and concludes that observations of nursing at this level of effort cannot be employed with any confidence as a monitoring indicator of muskox response to helicopters.</p>
<p>A Simulation Model of</p>	<p>Miller, M. W.; Jensen, K. C.; Grant, W. E.; and Weller, M.</p>	<p>We describe a simulation model designed to study the effects of</p>

<p>Helicopter Disturbance of Molting Pacific Black Brant</p>	<p>W., 1994, "A simulation model of helicopter disturbance of molting Pacific black brant" Ecological Modelling. 73(3-4) 293-309.</p> <p>Notes: Physiological model of weight loss due to disturbance from overflights in black brants. Model does not incorporate sound level.</p>	<p>helicopter disturbance on molting Pacific black brant near Teshekpuk Lake, Alaska. Locations of 18 118 brant were digitized into the model based on 10 years of population survey data. Bell 206 and Bell 412 helicopters were simulated flying across the molting grounds along two routes between two airfields. The model determined the behavioral and energetic response of birds encountered by the aircraft during an overflight. Altitude and frequency of overflights were held constant during a simulated 28-day molting period, but were varied among simulations. The model provided the degree of weight loss these birds experienced due to helicopter disturbance. The effects of overflights on brant were classified into five risk categories based on weight. For both routes, the number of flocks and birds in each category was determined for each altitude, aircraft type, and overflight frequency. Simulation results indicated that the model can be used to identify flight-line modifications that result in significantly decreased disturbance to the birds</p>
<p>Observations of golden eagle (<i>Aquila chrysaetos</i>) predation on Dall sheep lambs.</p>	<p>Nette T., Burtles D and Hoefs M, 1984, Observations of golden eagle (<i>Aquila chrysaetos</i>) predation on Dall sheep lambs. Canadian Field Naturalist 98:252-254</p>	<p>During helicopter disturbance, a Dall's sheep lamb straying behind its fleeing mother fell prey to a golden eagle.</p>
<p>Effects of Jet Aircraft Overflights on Parental Care of Peregrine Falcons</p>	<p>Palmer, Angela G., Nordmeyer, Dana L., Roby, Daniel D., 2003, "Effects of jet aircraft overflights on parental care of peregrine falcons" Wildlife Society Bulletin. 31(2).. 499-509</p> <p>Notes: N = 16 overflown nests, 13 control nests. 3 year study, some nests monitored over multiple years. Overflights recorded if noise level exceeded 85 dB. Weighting not reported.</p>	<p>Concerns voiced by resource managers caused us to examine the hypothesis that low-altitude jet aircraft overflights affect parental care by peregrine falcons. Specifically, we studied effects on nest attendance, time-activity budgets, and provisioning rates of peregrine falcons (<i>Falco peregrinus</i>) breeding along the Tanana River, Alaska in 1995, 1996, and 1997. We detected subtle effects of jet overflights on peregrine falcon parental behavior, but found no evidence that overall attendance patterns differed depending on exposure to overflights. Nest attendance and time-activity budgets of peregrine falcons during periods of overflights differed from those of peregrines at reference nests (nests rarely overflown). Differences depended on stage of the nesting cycle and gender. During the incubation and brooding stages of the nesting cycle, males attended the nest ledge less when overflights occurred than did males from reference nests. Females attended the nest ledge more during overflown periods compared to females from reference nests. Additionally, while females were still brooding nestlings, they were less likely to be absent from the nest area during periods when overflights occurred than females from reference nests. Although we found differences in nest attendance and time-activity budgets between overflown and reference nests, we did not observe differences between periods with overflights and periods without overflights at the same nests. Nor did we detect a relationship between nest attendance and the number of overflights occurring within a given time period, the cumulative number of above-threshold noise events at each nest, or the average sound-exposure level of</p>

<p>Aircraft Sound and Disturbance to Bowhead and Beluga Whales During Spring Migration in the Alaskan Beaufort Sea.</p>	<p>Richardson, W. John, 2002, Aircraft sound and disturbance to bowhead and beluga whales during spring migration in the Alaskan Beaufort Sea. Marine Mammal Science, 18(2): 309-335</p>	<p>overflights. Furthermore, we found no evidence that nesting provisioning rates were affected by overflights. Short-term behavioral responses of bowhead whales (<i>Balaena mysticetus</i>) and beluga whales (<i>Delphinapterus leucas</i>) to a Bell 212 helicopter and Twin Otter fixed-wing aircraft were observed opportunistically during four spring seasons (1989-1991 and 1994). Behaviors classified as reactions consisted of short surfacings, immediate dives or turns, changes in behavior state, vigorous swimming, and breaching. The helicopter elicited fewer detectable responses by bowheads (14% of 63 groups) than by belugas (38% of 40). Most observed reactions by bowheads (63%) and belugas (86%) occurred when the helicopter was at altitudes [ltoreq]150 m and lateral distances [ltoreq]250 m. Belugas reacted significantly more frequently during overflights at lateral distances [ltoreq]250 m than at longer lateral distances (P=0.004). When the helicopter was on the ice with engines running, 7 of 14 groups of belugas reacted, up to 320 m away, sometimes with small-scale [ltoreq]100 m) diversion; only 1 of 8 groups of bowheads reacted. For the fixed-wing aircraft, few bowheads (2.2%) or belugas (3.2%) were observed to react to overflights at altitudes 60-460 m. Most observed reactions by bowheads (73%) and belugas (70%) occurred when the fixed-wing aircraft was at altitudes [ltoreq]182 m and lateral distances [ltoreq]250 m. However, the proportions reacting, especially to low-altitude flights (e.g., [ltoreq]182 m), were underestimated for both species because observation opportunities were brief. Even so, reactions were more common when the aircraft was low ([ltoreq]182 m). P=0.009 for belugas. P=0.06 for bowheads. There was little if any reaction by bowheads when the aircraft circled at altitude 460 m and radius 1 km. Aircraft sounds measured underwater at depths 3 m and 18 m showed that a Bell 212 helicopter was 7-17.5 dB noisier than a Twin Otter (10-500 Hz band). Bell 212 sound consisted mainly of main rotor tones ahead of the helicopter and tail rotor tones behind it. Twin Otter sound contained fewer prominent tones. Peak sound level as received underwater was inversely related to aircraft altitude, and received levels at 3 m depth averaged 2.5 dB higher than at 18 m depth. The dominant low-frequency components of aircraft sound are presumed to be readily audible to bowheads. For belugas, these components may be inaudible, or at most only weakly audible. Mid-frequency sound components, visual cues, or both, are probably important in eliciting beluga reactions to aircraft.</p>
<p>Flushing Responses of Wintering Bald Eagles to Military Activity</p>	<p>Stalmaster, Mark V. and Kaiser, James L., 1997, "Flushing responses of wintering bald eagles to military activity" Journal of Wildlife Management. 61(4) 1307-1313.</p>	<p>We studied flushing responses of wintering bald eagles (<i>Haliaeetus leucocephalus</i>) to military firing activity, helicopter overflights, and boating on the Nisqually River and Muck Creek on the Fort Lewis Army Reservation, Washington, during 1991-94. Eight percent of 1,452 eagles monitored near Muck Creek flushed during 373 firing events; 4.5% from ordnance explosions, 9% from automatic weapons</p>

	<p>Notes: N = 1,452 observed eagles. No sound analysis</p>	<p>fire, 6% from artillery impacts, 4% from mortar impacts, and 3% from small arms fire. Flushing by eagles decreased with increasing distance from firing events (16% flushed at 0.5-1.0 km, 9% at 1-2 km, 4% at 2-4 km, and <1% at 4-6 km). Forty-seven percent of 919 eagles flushed in response to 48 helicopter overflights, 37% on the Nisqually River and 53% on Muck Creek. Sixty-one percent of 1,825 eagles flushed in response to 52 experimental boat disturbances on the Nisqually River. Subadults flushed more often than adults, and eagles feeding or standing on the ground flushed more often than those perching in trees. Our data suggest that ordnance explosions, low-level helicopter overflights, and boating should be restricted near eagle foraging areas.</p>
<p>Conflicts in National Parks: A Case Study of Helicopters and Bighorn Sheep Time Budgets at the Grand Canyon</p>	<p>Stockwell, Craig A. and Gary C. Bateman, 1991, "Conflicts in National Parks: A Case Study of Helicopters and Bighorn Sheep Time Budgets at the Grand Canyon" Biological Conservation Vol. 56 pp. 317-328</p> <p>Notes: N = 297. No sound analysis</p>	<p>Wildlife in numerous national parks of the United States experience frequent overflights by aircraft. Such activities may disturb wildlife populations. We analysed time budgets for desert bighorn sheep <i>Ovis canadensis nelsoni</i> in the presence and absence of helicopter overflights at Grand Canyon National Park (GCNP) to determine the extent to which food intake may be impaired. Bighorn were sensitive to disturbance during winter (43% reduction in foraging efficiency) but not during spring (no significant effect). This seasonal difference may have arisen because the sheep were farther from helicopters during the spring after they had migrated to lower elevations. Further analyses indicated a disturbance distance threshold of 250–450 m. The conservation implications of these results are discussed.</p>
<p>Effects of Low-Level Jet Aircraft Noise on the Behavior of Nesting Osprey</p>	<p>Trimper, Perry G., et. al., 1998, "Effects of Low-Level Jet Aircraft Noise on the Behavior of Nesting Osprey," The Journal of Applied Ecology Vol. 35 no. 1 pp. 122-130.</p> <p>Notes: N = 7 nesting pairs (5 treatment, 2 control). Median sound level measured at the nests was 89 dB (weighting not reported) with a range of 66.3 to 95.5 dB.</p>	<p>Nesting osprey <i>Pandion haliaetus</i> L. were exposed to controlled low-level C-18 jet aircraft overflights along the Naskaupi River, Labrador, Canada, during 1995. Jet aircraft flew near five nests at distances ranging from 2.5 nautical miles (nm) to directly overhead at speeds of 400-440 knots. 2. Maximum noise levels (L1) and other noise metrics were influenced by many factors including topography, distance, altitude, wind speed and direction. 3. Based on 240 h of observations from birds, we recorded osprey nest attendance and egg exposure during 139 individual overflights. Similar observations were completed at two control nests. Overflights as low as 30 m above ground occurred during incubation, nestling and pre fledging only when observers were present. 4. Osprey behaviour did not differ significantly ($P = 0.126$) between pre- and post-overflight periods. Despite L1 values occasionally exceeding 100 decibels, adult osprey did not appear agitated or startled when overflown. 5. Osprey were attentive to and occasionally flushed from nests when float planes, other osprey or raptors entered territories, and when observers were entering or exiting blinds.</p>
<p>Response of Fall-Staging Brant and Canada Geese to Aircraft Overflights in</p>	<p>Ward, DH; Stehn, RA; Erickson, WP; Derksen, DV , 1999, "Response of fall-staging brant and Canada geese to aircraft overflights in southwestern Alaska" Journal of Wildlife</p>	<p>Because much of the information concerning disturbance of waterfowl by aircraft is anecdotal, we examined behavioral responses of Pacific brant (<i>Branta bernicla nigricans</i>) and Canada geese (<i>B. canadensis</i> taverneri) to experimental overflights during fall staging at Izembek</p>

<p>Southwestern Alaska</p>	<p>Management Vol. 63, no. 1, pp. 373-381.</p> <p>Notes: N = 1,545 flocks (10-30,000 birds) of brant during 356 overflights and N = 535 flocks of Canada geese during 209 overflights. Sound level quantified as high or low with a 76 dB(A) for fixed wing aircraft and 80 dB(A) for helicopters.</p>	<p>Lagoon, Alaska. These data were used to develop predictive models of brant and Canada goose response to aircraft altitude, type, noise, and lateral distance from flocks. Overall, 75% of brant flocks and 9% of Canada goose flocks flew in response to overflights. Mean flight and alert responses of both species were greater for rotary-wing than for fixed-wing aircraft and for high-noise than for low-noise aircraft. Increased lateral distance between an aircraft and a flock was the most consistent predictive parameter associated with lower probability of a response by geese. Altitude was a less reliable predictor because of interaction effects with aircraft type and noise. Although mean response of brant and Canada geese generally was inversely proportional to aircraft altitude, greatest response occurred at intermediate (305-760 m) altitudes. At Izembek Lagoon and other areas where there are large concentrations of waterfowl, managers should consider lateral distance from the birds as the primary criterion for establishing local flight restrictions, especially for helicopters.</p>
<p>Effects of Simulated Jet Aircraft Noise on Heart Rate and Behavior of Desert Ungulates</p>	<p>Weisenberger, ME; Krausman, PR; Wallace, MC; De Young, DW; Maughan, OE, 1996. "Effects of simulated jet aircraft noise on heart rate and behavior of desert ungulates" Journal of Wildlife Management. vol. 60, no. 1, pp. 52-61</p> <p>N = 6 mule deer and 5 mountain sheep. dB weighting not reported.</p>	<p>The effects of simulated low-altitude jet aircraft noise on the behavior and physiology of 6 captive desert mule deer (<i>Odocoileus hemionus</i> crooki) and 5 mountain sheep (<i>Ovis canadensis mexicana</i>) were evaluated. Heart rate and behavior in relation to ambient temperature, number of simulated overflights/day, and noise levels [range =92--112 decibels (dB)] that the animals were exposed to were measured. Heart rates during simulated overflights (n=112/treatments/season) were compared to data collected prior to and following treatment periods. Differences between heart rates for animals, noise levels, and number of overflights between seasons were documented. All animals became habituated to sounds of low-altitude aircraft. Although heart rates increased during overflights they returned to resting rates in (less than or equal to)2 min.</p>
<p>Population and Ecological Impacts from Noise</p>		
<p>Energetic Cost of Man-Induced Disturbance to Staging Snow Geese.</p>	<p>Bélanger, L., and J. Bédard, 1990. "Energetic cost of man-induced disturbance to staging snow geese." Journal of Wildlife Management 54:36-41</p> <p>Notes: N = 155 observations. No sound analysis.</p>	<p>Energetic cost of man-induced disturbance to fall-staging snow geese in Québec was estimated. Two responses of birds to disturbance were considered: (1) birds fly away but promptly resume feeding following a disturbance (Response A), and (2) birds interrupt feeding altogether (Response B). Daylight foraging time decreased by 4% to 51% depending on disturbance levels. Average rate of disturbance (1.46/hr) in Response A resulted in a 5.3% increase in hourly energy expenditure (HEE) combined with a 1.6% reduction of hourly metabolizable energy intake (HMEI). In Response B, HEE increased by 3.4%, and HMEI decreased by 2.9% to 19.4%. A 4% increase in night feeding could compensate for energy losses caused solely by disturbance flights (Response A), but a 32% increase in nighttime feeding was required to restore energy losses incurred in Response B. No increase in daily feeding rate was observed between days with</p>

<p>Reindeer (<i>Rangifer tarandus</i>) avoidance of a highway as revealed by lichen measurements.</p>	<p>Dahle B, Reimers E and Colman JE, 2007, Reindeer (<i>Rangifer tarandus</i>) avoidance of a highway as revealed by lichen measurements. Eur J Wildl Res OnlineEarly</p> <p>Notes: Focus on roads but distances that Reindeer avoid roads (8 km) may indicate sound as a factor</p>	<p>different disturbance levels ($P > 0.05$). Authors concluded that man-induced disturbance had significant energetic consequences for fall-staging, greater snow geese</p> <p>Reindeer and caribou Rangifer tarandus are reported to avoid human infrastructure such as roads, high-voltage power lines, pipelines, and tourist resorts. Lichens are important forage for reindeer during winter, and their relatively slow growth rates make them vulnerable to overgrazing. Height and volume of lichens are often used as an indicator of grazing pressure by reindeer and, thus, as an indirect measure of Rangifer avoidance of human infrastructure. We sampled lichen height in Cetrania nivalisdominated communities along 4 and 3 parallel transects located on two parallel mountain ridges in Hardangervidda, south central Norway. The lichen measurements were analyzed in relation to altitude and the distance from four tourist cabins in the area and a highway (Rv7) running perpendicular to the 7 transects. The mountain ridge with 4 transects is part of a much used migratory corridor for wild reindeer R. tarandus tarandus. Along the nonmigratory ridge, lichen height decreased 35% over an 8-km distance from Rv7 and a tourist cabin, indicating reindeer aversion toward Rv7 and/or a tourist cabin. No similar relationship was found for the migration ridge in relation to distance from Rv7 or the tourist cabins. Our results suggest that avoidance of human infrastructure by wild reindeer might be limited where reindeer use of winter pastures is influenced by herd traditions and/or motivation to follow established migration corridors. This has important implications for addressing the use of similar pasture measurements when testing for Rangifer aversion toward human disturbances.</p>
<p>Human-caused Disturbance Stimuli as a Form of Predation Risk</p>	<p>Frid, A., and Dill, L.M., 2002, "Human-caused Disturbance Stimuli as a Form of Predation Risk" Conservation Ecology Vol. 6 no.1</p>	<p>A growing number of studies quantify the impact of nonlethal human disturbance on the behavior and reproductive success of animals. Although many are well designed and analytically sophisticated, most lack a theoretical framework for making predictions and for understanding why particular responses occur. Behavioral ecologists have recently begun to fill this theoretical vacuum by applying economic models of antipredator behavior to disturbance studies. In this emerging paradigm, predation and nonlethal disturbance stimuli create similar trade-offs between avoiding perceived risk and other fitness-enhancing activities, such as feeding, parental care, or mating. A vast literature supports the hypothesis that antipredator behavior has a cost to other activities, and that this trade-off is optimized when investment in antipredator behavior tracks short-term changes in predation risk. Prey have evolved antipredator responses to generalized threatening stimuli, such as loud noises and rapidly approaching objects. Thus, when encountering disturbance stimuli ranging from the dramatic, low-flying helicopter to the quiet wildlife photographer, animal responses are likely to follow the same economic principles used by prey encountering predators. Some</p>

		<p>authors have argued that, similar to predation risk, disturbance stimuli can indirectly affect fitness and population dynamics via the energetic and lost opportunity costs of risk avoidance. We elaborate on this argument by discussing why, from an evolutionary perspective, disturbance stimuli should be analogous to predation risk. We then consider disturbance effects on the behavior of individuals—vigilance, fleeing, habitat selection, mating displays, and parental investment—as well as indirect effects on populations and communities. A wider application of predation risk theory to disturbance studies should increase the generality of predictions and make mitigation more effective without over-regulating human activities.</p>
<p>Why Behavioural Responses May Not Reflect the Population Consequences of Human Disturbance</p>	<p>Gill, J. A., K. Norris, and W. J. Sutherland, 2001, “Why behavioural responses may not reflect the population consequences of human disturbance.” Biological Conservation 97:265-268</p>	<p>The effect of human disturbance on animals is frequently measured in terms of changes in behaviour in response to human presence. The magnitude of these changes in behaviour is then often used as a measure of the relative susceptibility of species to disturbance; for example species which show strong avoidance of human presence are often considered to be in greater need of protection from disturbance than those which do not. In this paper we discuss whether such changes in behaviour are likely to be good measures of the relative susceptibility of species, and suggest that their use may result in confusion when determining conservation priorities.</p>
<p>Predicting the Consequences of Human Disturbance from Behavioral Decisions</p>	<p>Gill, J. A., Sutherland, W. J., 2000, “Predicting the Consequences of Human Disturbance from Behavioral Decisions” in Gosling, L.M. and Sutherland, W.J. (eds.) Behavior and Conservation. Cambridge: Cambridge University Press</p>	<p>Book Chapter – Requested Book Through Interlibrary Loan</p>
<p>A Method to Quantify the Effects of Human Disturbance on Animal Populations</p>	<p>Gill, J. A., Sutherland, W. J., Watkinson, A.R., 1996, “A Method to Quantify the Effects of Human Disturbance on Animal Populations” Journal of Applied Ecology Vol. 33 pp.786-792</p>	<p>1. The extent and consequences of human disturbance on populations of vertebrates are contentious issues in conservation. As recreational and industrial uses of the countryside continue to expand, it is becoming increasingly important that the effects of such disturbance on wildlife are quantified. 2. This study describes a method of quantifying the effect of disturbance, based on measuring the trade-off between resource use and risk of disturbance. This approach is based on one used by ethologists to study the effects of predation risk on patch use. 3. Pink-footed geese, <i>Anser brachyrhynchus</i>, feeding on arable fields, are highly responsive to disturbance from surrounding roads. The extent to which these fields are exploited declines linearly with increasing risk of disturbance. The reduction in use of these feeding grounds caused by disturbance can be quantified by translating the biomass of food not exploited into the number of birds that this food could have supported. 4. This approach allows both quantification of the impact of disturbance on a population, and exploration of the potential</p>

<p>Does Risk of Predation Influence Population Dynamics?</p>	<p>Hik, D. S., 1995, "Does risk of predation influence population dynamics?" Wildlife Research 22:115-129</p>	<p>consequences of changes in disturbance on the size of populations.</p> <p>Different patterns of survival and changes in body mass were observed in the presence and absence of terrestrial predators. On the CONTROL area, female body mass and fecundity declined, even though sufficient winter forage was apparently available in all years. A similar decrease in body mass was observed on the FOOD treatment, but only during the third year of the population decline. In contrast, female body mass remained high throughout the decline in the absence of terrestrial predators in the FENCE+FOOD and FENCE treatments. Winter survival declined on CONTROL and FENCE areas during the first year of the population decline (1991), but remained higher on FOOD until 1992 and FENCE+FOOD until 1993. These results generally supported the PSF hypothesis where terrestrial predators were present (CONTROL and FOOD grids). Where terrestrial predators were absent (FENCE and FENCE+FOOD), the results supported the alternative condition constraint hypothesis. The evidence suggests that a cascade of sublethal behavioural and physiological effects associated with increased predation risk contribute to the population decline and delayed recovery of cyclic low-phase populations of snowshoe hares.</p>
<p>Mountain Goat Population Changes in Relation to Energy Exploration Along Montana's Rocky Mountain Front</p>	<p>Joslin, G., 1986, "Mountain Goat population changes in relation to energy exploration along Montana's Rocky Mountain Front" Biennial Symposium of the Northern Wild Sheep and Goat Council 5, 253-271</p>	<p>Where caribou have been hunted or chased (passively or actively) herds are more likely to experience additional stress from associating man with danger, and are especially sensitive during the calving and rut periods. Harassment of unhabituated caribou to human disturbance may have immediate impacts as well as long term effects. Where humans or their machines are perceived as a threat, caribou often experience increased stress levels and subsequently expend more energy attempting to avoid the disturbance. Flight is the most common response for unhabituated animals that perceive humans as predators. This flight response uses up vital body reserves, increases the chance of physical injury or death during stampedes and may cause herd fragmentation. Utilisation of essential body fat and protein, especially during harsh climatic conditions, can lead to increased cow/calf mortality, and may effectively reduce productivity of the herd. Long term displacement from home range (especially during calving period) may result in increased mortality, decreased reproductive success, increased predation, altered habitat use and decreased caribou densities. Human activities within caribou range which do not necessarily destroy caribou habitat may still result in a functional loss of usable space by the disturbance and resulting displacement. The relatively isolated areas caribou live in may make them more responsive to human disturbance, eliciting high stress responses. Human activities such as hiking, snowmobiling, low altitude flights and ATV use, which briefly stress caribou are likely to have significant</p>

<p>Stress and Decision Making Under The Risk of Predation: Recent Developments From Behavioral, Reproductive, and Ecological Perspectives</p>	<p>Lima, S. L., 1998, "Stress and decision making under the risk of predation: recent developments from behavioral, reproductive, and ecological perspectives". Advances in the Study of Behavior 27:215-290.</p>	<p>negative effects if animals are displaced out of their preferred habitat. Requested Article Through Interlibrary Loan</p>
<p>Ecological and Physiological Aspects of Caribou Activity in Response to Aircraft Overflights</p>	<p>Maier, J., 1996, Ecological and Physiological Aspects of Caribou Activity in Response to Aircraft Overflights. Dissertation, University of Alaska, Fairbanks</p>	<p>Resource management agencies are concerned about the potential effects of these overflights on important species of ungulates. I hypothesized that low-altitude overflights would affect activity and movements of caribou, and thereby constitute a disturbance with negative consequences on energetics. I used caribou of the Delta Herd (DCH) and captive animals at the Large Animal Research Station (LARS) to address the hypotheses: caribou (1) exhibit equal activity day and night; (2) do not time activity to light; and (3) activity patterns do not change seasonally in response to daylength. Caribou were nycthemeral and exhibited uniform activity with no apparent timing to light. DCH caribou responded to seasonal changes in the environment by modifying activity (increased activity in response to insect harassment), whereas LARS caribou altered activity in response to fluctuating physiological variables (increased activity during rut). Changes in daylength did not affect activity. Data on activity from LARS and DCH caribou were compared with extant data on caribou of the Denali and Porcupine herds. Poor quality forage in winter was inferred from long resting bouts, and low availability of forage was inferred from long active bouts of post-calving caribou of the DCH. In midsummer, caribou of the DCH exhibited significantly longer active and shorter resting bouts than did LARS caribou, consistent with a moderate level of insect harassment. Responses of caribou to overflights were mild in late winter and, thus, overflights did not constitute a disturbance. Post-calving caribou responded to overflights by increasing daily activity, linear movements, incremental energy cost, and average daily metabolic rate. Energetic responses and movements were significantly related to the loudest overflight of the day. In the insect season, activity levels increased significantly in response to overflights but with no corresponding increase in linear movements or energetics. My recommendations are to prohibit aircraft overflights of caribou during calving and post-calving periods and during key feeding times in insect harassment seasons. Research indicates the possibility of more severe effects in nutritionally stressed animals.</p>

<p>Optimally Foraging Mice Match Patch Use with Habitat Differences in Fitness</p>	<p>Morris, D. W., and D. L. Davidson, 2000, "Optimally foraging mice match patch use with habitat differences in fitness." <i>Ecology</i> 81:2061-2066</p>	<p>We tested the fundamental assumption of the "optimality paradigm" that the foraging behavior of individual organisms corresponds to what we would expect if it had been honed by natural selection to match habitat differences in reproductive success. First, we used long-term studies of life history and habitat selection in white-footed mice to illustrate that the fitness of females living in the forest is greater than that of females living in forest-edge habitat. Second, we used short-term foraging studies to evaluate whether food patches located in the forest provided more value to foragers than did those in the edge. Third, we used foraging studies and data on the occurrence of predators to demonstrate that animals foraging in areas with little cover face higher risks than when they forage in areas with more cover. We confirmed three a priori predictions: (1) Individual mice abandoned foraging patches at higher harvest rates in edge habitat than they did in forest. (2) Individuals harvested resource patches to lower quitting harvest rates under cover than they did when patches were located in the open. (3) The difference in quitting-harvest rate between "open" and "covered" patches was less in the safe forest habitat than it was in the risky edge habitat. Our results yield an impressive fit with our previous knowledge of habitat differences in reproductive success and substantiate the premise that short-duration strategic decisions by individuals match habitat differences in fitness.</p>
<p>Displacement of <i>Orcinus orca</i> (L.) by high amplitude sound in British Columbia, Canada</p>	<p>Morton, AB and Symonds HK, 2002, Displacement of <i>Orcinus orca</i> (L.) by high amplitude sound in British Columbia, Canada. ICES Journal of Marine Science 59:71-80</p>	<p>Whale displacement by acoustic "pollution" has been difficult to document, even in cases where it is strongly suspected, because noise effects can rarely be separated from other stimuli. Two independent studies on the natural history of killer whales (<i>Orcinus orca</i>) monitored frequency of whale occurrence from January 1985 through December 2000 in two adjacent areas: Johnstone Strait and the Broughton Archipelago. Four high-amplitude, acoustic harassment devices (AHDs) were installed throughout 1993 on already existing salmon farms in the Broughton Archipelago, in attempts to deter predation on fish pens by harbour seals (<i>Phoca vitulina</i> Linnaeus). While whale occurrence was relatively stable in both areas until 1993, it then increased slightly in the Johnstone Strait area and declined significantly in the Broughton Archipelago while AHDs were in use. Both mammal-eating and fish-eating killer whales were similarly impacted. Acoustic harassment ended in the Broughton Archipelago in May 1999 and whale occurrence re-established to baseline levels. This study concludes that whale displacement resulted from the deliberate introduction of noise into their environment.</p>
<p>Reproductive Success of Elk Following Disturbance by Humans During Calving Season</p>	<p>Phillips, G. and Alldredge, A., 2002, "Reproductive Success of Elk Following Disturbance by Humans During Calving Season." <i>Journal of Wildlife Management</i> 64, 521-530</p>	<p>Restricting human activity in elk (<i>Cervus elaphus</i>) calving areas during calving season can be controversial because of increasing human uses of elk habitat, and little evidence exists to evaluate impacts of these activities on elk populations. We evaluated effects of human-induced disturbance on reproductive success of radiocollared adult</p>

		<p>female elk using a control-treatment study in central Colorado. Data were collected during 1 pretreatment year and 2 treatment years. Treatment elk were repeatedly approached and displaced by study personnel throughout a 3-4-week period of peak calving during both treatment years, while control elk did not receive treatment. We observed elk on alpine summer ranges in July and August on both areas to estimate the proportion of marked cows maintaining a calf. Calf/cow proportions for the control area remained stable, but those for the treatment area declined each year. Average number of disturbances/elk/year effectively modeled variation in calf/cow proportions, supporting treatment as the cause of declining calf/cow proportions. Average decrease in calf/cow proportion in the treatment group was 0.225. Modeling indicated that estimated annual population growth on both study areas was 7% without treatment application given that existing human activities cause some unknown level of calving-season disturbance. With an average of 10 disturbances/cow above ambient levels, our model projected no growth. Our results support maintaining disturbance-free areas for elk during parturitional periods.</p>
<p>Potential Energetic Effects of Mountain Climbers on Foraging Grizzly Bears</p>	<p>White, D., Jr., K. C. Kendall, and H. D. Picton, 1999, "Potential energetic effects of mountain climbers on foraging grizzly bears." Wildlife Society Bulletin 27:146-151.</p>	<p>Most studies of the effects of human disturbance on grizzly bears (<i>Ursus arctos horribilis</i>) have not quantified the energetic effects of such interactions. In this study, we characterized activity budgets of adult grizzly bears as they foraged on aggregations of adult army cutworm moths (<i>Euxoa auxillaris</i>) in the alpine of Glacier National Park, Montana, during 1992, 1994, and 1995. We compared the activity budgets of climber-disturbed bears to those of undisturbed bears to estimate the energetic impact of climber disturbance. When bears detected climbers, they subsequently spent 53% less time foraging on moths, 52% more time moving within the foraging area, and 23% more time behaving aggressively, compared to when they were not disturbed. We estimated that grizzly bears could consume approximately 40,000 moths/day or 1,700 moths/hour. At 0.44 kcal/moth, disruption of moth feeding cost bears approximately 12 kcal/minute in addition to the energy expended in evasive maneuvers and defensive behaviors. To reduce both climber interruption of bear foraging and the potential for aggressive bear-human encounters, we recommend routing climbers around moth sites used by bears or limiting access to these sites during bear-use periods.</p>
<p>Behavior Responses and Reproduction of Mule Deer Does Following Experimental Harassment with an All-Terrain Vehicle</p>	<p>Yarmoloy, C., et. al., 1988, "Behavior Responses and Reproduction of Mule Deer Does Following Experimental Harassment with an All-Terrain Vehicle." Canadian Field-Naturalist 102, 425-429</p>	<p>Five mule deer were habituated to an ATV for 12 weeks. Three of the females were then followed by an ATV for 9 minutes per day for 15 days. The harassed females, but not the other females shifted feeding into darkness, used cover more frequently, left home ranges more often, and increased flight distance from the ATV. The harassed females also showed significant decreases in reproduction success.</p>

Habituation		
<p>Pronghorn Foraging Economy and Predator Avoidance in A Desert Ecosystem: Implications for the Conservation of Large Mammalian Herbivores.</p>	<p>Berger, J., D. Daneke, J. Johnson, and S. H. Berwick, 1983, "Pronghorn foraging economy and predator avoidance in a desert ecosystem: implications for the conservation of large mammalian herbivores." Biological Conservation 25:193-208.</p>	<p>Assumptions of optimal foraging theory were applied to the feeding ecology of pronghorn to address issues of immediate relevance to conservation biology in the Great Basin Desert of North America. The relationships between foraging efficiency and (1) group size; (2) habitat; and (3) disturbance history were examined in two study sites. Individual foraging efficiency increased with group size to a point in both study sites, but animals in the disturbed area remained in larger groups despite foraging less profitably. The hypothesis that individuals in a disturbed environment remain together for enhanced protection from (human?) predators was supported and interpreted in light of proposed habitat alterations in vast portions of this unique desert ecosystem.</p> <p>Requested Article</p>
<p>Discrimination of the Threat of Direct Versus Tangential Approach to the Nest By Incubating Herring and Great Black-Backed Gulls</p>	<p>Burger, J., and M. Gochfeld, 1981, "Discrimination of the threat of direct versus tangential approach to the nest by incubating herring and great black-backed gulls." Journal of Comparative and Physiological Psychology 95:676-684</p>	<p>Requested Article</p>
<p>Risk Discrimination of Direct Versus Tangential Approach By Basking Black Iguanas (Ctenosaura Similis): Variation As A Function of Human Exposure.</p>	<p>Burger, J., and M. Gochfeld, 1990, "Risk discrimination of direct versus tangential approach by basking black iguanas (Ctenosaura similis): variation as a function of human exposure." Journal of Comparative Psychology 104:388-394</p>	<p>Requested Article</p>
<p>Responses of Bald Eagles to Human Activity During the Summer in Interior Alaska</p>	<p>Steidl, R. J., and R. G. Anthony, 1996, "Responses of Bald Eagles to human activity during the summer in interior Alaska." Ecological Applications 6:482-491</p>	<p>Along narrow rivers, spatial restriction of human use based on wildlife responses can effectively eliminate the entire river corridor from human use. Therefore, if river use by both wildlife and humans is a goal, an alternative management strategy is necessary. We measured flush response rate and flush distance of breeding and nonbreeding Bald Eagles (Haliaeetus leucocephalus) to recreational boating along the Gulkana River in interior Alaska from 1989 to 1992. Eagle responses to our nonmotorized boat were governed by the context within which human-eagle encounters occurred. Flush response rate of nonbreeding eagles decreased as perch height and its distance from the river's edge increased, increased as the season progressed and as eagle group size increased, was lower for juveniles (20%) than other age classes (49-65%), and varied with the existing level of</p>

<p>Predictors of Vigilance for American Crows Foraging in An Urban Environment</p>	<p>Ward, C., and B. S. Low, 1997, "Predictors of vigilance for American Crows foraging in an urban environment" Wilson Bulletin 109:481-489</p>	<p>human activity in geographic location ($P < 0.001$ for all parameters). Flush distance of nonbreeding eagles increased as the distance a disturbance was first visible to a perched eagle increased, as perch height and its distance from the river's edge increased, and as the season progressed. In contrast to flush response, flush distance was strongly associated with age and was greatest for adults, least for juveniles, and intermediate for subadults. Breeding adults were much less likely to flush than nonbreeding adults, and flushed at lesser distances. We recommend that along narrow wilderness rivers, the impacts of human activity on Bald Eagle populations be regulated with temporal, rather than spatial, restrictions.</p> <p>We examined ways in which American Crows (<i>Corvus brachyrhynchos</i>) foraging in an urban environment balance the conflicting demands of finding food and avoiding predators. As individual vigilance (i.e., scanning) decreased, time devoted to foraging increased. Significant predictors of vigilance varied with location and included time of day, temperature, food availability, distance to nearest source of disturbance, cover distance, and size of foraging group. Group size and, secondarily, distance from cover accounted for most of the variability in vigilance. Crows were more vigilant in areas of high human disturbance than in areas of low human disturbance.</p>
<p>Noise Effects on Signal Design: Amplitude shifts</p>		
<p>Noise-dependent song amplitude regulation in a territorial songbird</p>	<p>Brumm H and Todd D., 2002, Noise-dependent song amplitude regulation in a territorial songbird. Animal Behaviour 63:891-897</p> <p>Notes: N=10, playback of white noise (45-30,000 Hz) at 55-75 dB(A). Background noise 0.1-3.5 kHz, 31-38 dB(A).</p> <p>Conclusions: All birds increased the sound level of their songs in response to an increase in white noise broadcast to them. A second experiment revealed that noise in the spectral region of their own songs was most effective in inducing the birds to increase vocal intensity.</p>	<p>Some animals that use sound to communicate compensate for interference from background noise by adjusting the amplitude of their vocalizations as environmental noise levels vary. Territorial songbirds may have evolved a different strategy, since they can be expected to benefit from maximizing the amplitude of their songs to defend territories and attract females. We tested this hypothesis with calibrated measurements of the song level of male nightingales, <i>Luscinia megarhynchos</i>. All birds increased the sound level of their songs in response to an increase in white noise broadcast to them. A second experiment revealed that noise in the spectral region of their own songs was most effective in inducing the birds to increase vocal intensity. These findings show that nightingales do not maximize song amplitude but regulate vocal intensity dependent on the level of masking noise. The adjustment of vocal amplitude may serve to maintain a specific signal-to-noise ratio that is favourable for signal production. Concurrently, increasing the intensity of songs can maintain a given active space for communication. Thus, vocal amplitude in a territorial songbird can be interpreted as a flexible trait, which is individually regulated according to ecological demands from signal transmission.</p> <p>1.The impact of environmental background noise on the performance</p>
<p>The impact of</p>	<p>Brumm H, 2004, The impact of environmental noise on song</p>	

<p>environmental noise on song amplitude in a territorial bird</p>	<p>amplitude in a territorial bird. Journal of Animal Ecology 73:434-440.</p> <p>Notes: N=15, sound level estimated with instantaneous (time constant 125 ms), A-weighted dB readings. Background noise subtracted and distance to mic factored.</p> <p>Conclusion: Males at louder locations, sing louder</p>	<p>of territorial songs was examined in free-ranging nightingales (<i>Luscinia megarhynchos</i> Brehm). An analysis of sound pressure levels revealed that males at noisier locations sang with higher sound levels than birds in territories less affected by background sounds.</p> <p>2. This is the first evidence of a noise-dependent vocal amplitude regulation in the natural environment of an animal.</p> <p>3. The results yielded demonstrate that the birds tried to mitigate the impairments on their communication caused by masking noise. This behaviour may help to maintain a given transmission distance of songs, which are used in territory defence and mate attraction. At the same time, birds forced to sing with higher amplitudes have to bear the increased costs of singing.</p> <p>4. This suggests that in songbirds the level of environmental noise in a territory will contribute to its quality and thus considerably affect the behavioural ecology of singing males.</p>
<p>Acoustic communication in noise: regulation of call characteristics in a New World monkey</p>	<p>Brumm H, Voss K, Kollmer I and Dietmar T, 2004, Acoustic communication in noise: regulation of call characteristics in a New World monkey. Journal of Experimental Biology 207: 443-448.</p> <p>Notes: N=4, broadcast white noise at 40, 50, 60 and 65 dB. Background noise level ~30 dB.</p> <p>Conclusion: Marmoset calls increased in duration and amplitude in accordance with increasing masker level.</p>	<p>This study on common marmosets <i>Callithrix jacchus</i> is the first to examine noise-dependent mechanisms of vocal plasticity in a New World monkey. Since acoustic communication can be considerably impaired by environmental noise, some animals have evolved adaptations to counteract its masking effects. The studied marmosets increased the sound level of their spontaneous calls in response to increased levels of white noise broadcast to them. Possibly, such noise-dependent adjustment of vocal amplitude serves to maintain a specific signal-to-noise ratio that is favourable for signal production. Concurrently, the adjustment of vocal amplitude can maintain a given active space for communication. In contrast to some bird species, no noise-induced increase in the number of syllables per call series could be found, showing that an increased serial redundancy of vocal signals was not used to communicate under noisy conditions. Finally, we examined a possible noise-dependent prolongation of vocal signals. This approach was guided by the findings of perceptual studies, which suggest an increased detection probability of prolonged signals in noise by temporal summation. Marmosets indeed increased the duration of their call syllables along with increasing background noise levels. This is the first evidence of such mechanism of vocal plasticity in an animal communication system.</p>
<p>Amplitude regulation of vocalizations in noise by a</p>	<p>Cynx J, Lewis R, Tavel B and Tse H, 1998, Amplitude regulation of vocalizations in noise by a songbird,</p>	<p>Bird vocalizations are produced under various noise conditions. It could therefore benefit birds to alter the amplitude of their signals as noise conditions change. We tested this by recording male and female</p>

<p>songbird, <i>Taeniopygia guttata</i></p>	<p><i>Taeniopygia guttata</i>. Animal Behaviour 56:107-113 Notes: N=2 zebra finch, N=3 humans. Masking noise presented in 5 dB steps at 60-90 dB(A). Background noise level, 40-50 dB(A). Conclusion: Curvilinear responses to increasing levels of masking noise suggesting that birds may quickly reach an intensity threshold over which they can not compensate. Leonard ML and Horn AG, 2005. Ambient noise and the design of begging signals. Proc. R. Soc. B 272:651-656. Notes: 3 experiments. 1: In the field, amplitude, call length and Hz range increase with increased ambient noise level- 41-67 dB(C) range. 2: playback of white noise at 65 dB(C) in lab resulted in increased call amplitude. 3: Begging calls played back at 65 vs 55 dB(C) stimulated significantly more feeding during simultaneous playback of 60 dB(C) white noise.</p>	<p>zebra finches, <i>Taeniopygia guttata</i>, as they were subjected to various levels of white noise. Both sexes increased amplitude levels of vocalization in response to increased levels of noise. Similar results were obtained with humans (the 'Lombard effect'). The results are discussed in terms of the 'active space' of bird song and honest signalling.</p> <p>The apparent extravagance of begging displays is usually attributed to selection for features, such as loud calls, that make the signal costly and hence reliable. An alternative explanation, however, is that these design features are needed for effective signal transmission and reception. Here, we test the latter hypothesis by examining how the begging calls of tree swallow (<i>Tachycineta bicolor</i>) nestlings and the response to these calls by parents are affected by ambient noise. In a field study, we found that call length, amplitude and frequency range all increased with increasing noise levels at nests. In the laboratory, however, only call amplitude increased in response to the playback of noise to nestlings. In field playbacks to parents, similar levels of noise abolished parental preferences for higher call rates, but the preference was restored when call amplitude was increased to the level that nestlings had used in the laboratory study. Our results show that nestling birds, like other acoustic signalers, consistently increase call amplitude in response to ambient noise and this response appears to enhance discrimination by receivers. Thus, selection for signal efficacy may explain some of the seemingly extravagant features of begging displays.</p>
<p>Control of vocal intensity in budgerigars (<i>Melopsittacus undulatus</i>): Differential reinforcement of vocal intensity and the Lombard effect</p>	<p>Manabe K, Sadr EI and Dooling RJ, 1998, Control of vocal intensity in budgerigars (<i>Melopsittacus undulatus</i>): Differential reinforcement of vocal intensity and the Lombard effect. J. Acoust. Soc. Am. 103(2):1190-1198 Notes: 70 dB masker. N = 1-5 over 5 experiments. Conclusion: Noise in spectral region of contact calls (1.5-4.5 kHz) most effective at causing an upward amplitude shift.</p>	<p>Call production in budgerigars was studied using operant conditioning. In several experiments, budgerigars were reinforced with food for producing calls that were above or below a criterion level of intensity. This differential reinforcement procedure was successful in controlling vocal intensity in both directions showing that the intensity with which budgerigars produce vocalizations is under voluntary control. In additional experiments, call intensity maintained by food reinforcement was measured both in the quiet and in the presence of various levels of broadband noise. Call intensity in budgerigars increased significantly in noise, paralleling the well-known Lombard effect in humans which</p>

<p>Regulation of vocal amplitude by the blue-throated hummingbird, <i>Lampornis clemenciae</i></p>	<p>Pytte CL, Rusch KM and Ficken MS, 2003, Regulation of vocal amplitude by the blue-throated hummingbird, <i>Lampornis clemenciae</i>. Animal Behaviour 66:703-710</p> <p>Notes: N = 13, Playback of 70 dB(C?) masker mimicking creek noise increased call intensity. dB estimated at 5-10 m from singers.</p>	<p>is the reflexive increase in speech intensity during communication in noise. Call intensity was measured in broadband noise and in a notched noise (no energy between 1.5 and 4.5 kHz) with the same overall level. Results show that noise in the spectral region of contact calls is most effective in causing an increase in vocal intensity. In aggregate, these experiments show that budgerigars have voluntary control over the intensive aspect of their vocalizations, that they normally monitor their vocal output through external auditory feedback, and, like humans, they exhibit the Lombard effect.</p>
<p>Animals that rely on vocal communication must broadcast sound so that a perceptible signal is transmitted over an appropriate distance. We found that male blue-throated hummingbirds modified the amplitude of their vocalizations in response to both naturally occurring and experimenter-controlled changes in ambient noise levels. This phenomenon is known as the Lombard effect and may increase the efficiency of acoustic signalling. This study demonstrates the effect under natural field conditions and documents the first hummingbird species (Apodiformes: Trochilidae) to show this behaviour. We measured sound pressure levels (SPLs) of Serial Chip territorial advertisement calls across a natural range of ambient noise, primarily due to creeks within male territories. We found a significant correlation between the amplitude of Serial Chips and the amplitude of background noise. To test this relationship, we broadcast recordings of creek noise at high and low amplitudes while target individuals were producing Serial Chip vocalizations. We measured vocal SPLs before and during the playback. Individuals responded to changes in playback creek noise by changing the amplitude of Serial Chip production. We also measured transmission properties of Serial Chip calls through natural habitat to calculate the approximate amplitude of vocalizations at the position of the calling bird. We suggest that amplitude regulation of vocalizations contributes to signal transmission distance along with the established relationships between singing behaviour, acoustic structure and habitat.</p>		

Noise Effects on Signal Design: Frequency shifts

<p>Anthropogenic Noise and its Effect on Animal Communication: An Interface Between Comparative Psychology and Conservation Biology</p>	<p>Rabin LA, McCowan B, Hooper SL and Owings DH, 2003, Anthropogenic noise and its effect on animal communication: An interface between comparative psychology and conservation biology. International Journal of Comparative Psychology 16:172-192</p> <p>Notes: Review + case study of ground squirrel vocalizations in masking noise. Alarm vocalization in a 60-70 dB(C) site vs a 82-86 dB(C) site. Calls shift to higher harmonic in louder site resulting in 1.2-2.7 kHz change.</p>	<p>Conservation biology and comparative psychology rarely intersect, in part because conservation biology typically emphasizes populations whereas comparative psychology concentrates on individual organisms. However, both fields could benefit from their integration. Conservation biology can profit from an enhanced understanding of individual-level impacts of habitat alteration and the resulting implications for conservation mitigation strategies. Comparative psychology can gain from increased attention to the mechanisms of adjustment used by organisms to "in vivo experiments" created by anthropogenic change. In this paper, we describe a conceptual framework useful for applying our understanding of animal communication to conservation biology. We then review studies of animal communication with conservation implications, and report our own preliminary work that demonstrates our framework in action.</p>
<p>The impact of roads on birds: Does song frequency play a role in determining susceptibility to noise pollution?</p>	<p>Rheindt FE, 2003, The impact of roads on birds: Does song frequency play a role in determining susceptibility to noise pollution? J. Ornithology 144:295-306</p> <p>Notes: Weak but significant relationship between road proximity and dominant frequency in song. Body size and detectability controlled. 12 species in the community (great spotted woodpecker, winter wren, European robin, European blackbird, song thrush, blackcap, chiffchaff, firecrest, European nuthatch, tree creeper, blue tit, great tit, hawfinch, chaffinch)</p>	<p>Traffic noise is known to have a negative impact on bird populations in general, but little is known about the mechanisms by which sound pollution affects bird communities. However, a knowledge of these mechanisms is imperative if we want to account for the differences in susceptibility to traffic noise that exist between species, and may thus be critical for conservation action. To address this issue, population assessments were carried out in a contiguous area of oak-beech forest at differing distances from a much frequented motorway to determine the road effect on the whole bird community. As expected, species richness and diversity decreased towards the motorway, and bird abundance was significantly lower along the motorway than in the control area. However, a few species defied the negative impact of the motorway. The songs of the more abundant passerines were analysed with regard to three frequency parameters to determine whether or not a relationship exists between the song pitch of a species and its sensitivity to noise pollution. A significant relationship was found between dominant frequency and decline in abundance towards the motorway, which indicates that having a higher-pitched song with frequencies well above those of traffic noise makes a bird less susceptible to noise pollution. These results suggest that acoustic masking is one of the mechanisms by which traffic noise negatively affects passerine density along roads.</p>
<p>Habitat-dependent ambient noise: Consistent spectral profiles in two African forest types</p>	<p>Slabbekoorn H, 2004, Habitat-dependent ambient noise: Consistent spectral profiles in two African forest types. J. Acoust. Soc. Am. 116(6):3727-3733.</p>	<p>Many animal species use acoustic signals to attract mates, to defend territories, or to convey information that may contribute to their fitness in other ways. However, the natural environment is usually filled with competing sounds. Therefore, if ambient noise conditions are relatively constant, acoustic interference can drive evolutionary changes in animal signals. Furthermore, masking noise may cause acoustic divergence between populations of the same species if noise conditions differ consistently among habitats. In this study, ambient noise was sampled in a replicate set of sites in two habitat types in Cameroon: contiguous rainforest and ecotone forest patches north of</p>

		<p>the rainforest. The noise characteristics of the two forest types show significant and consistent differences. Multiple samples taken at two rainforest sites in different seasons vary little and remain distinct from those in ecotone forest. The rainforest recordings show many distinctive frequency bands, with a general increase in amplitude from low to high frequencies. Ecotone forest only shows a distinctive high-frequency band at some parts of the day. Habitat dependent abiotic and biotic sound sources and to some extent habitat-dependent sound transmission are the likely causes of these habitat-dependent noise spectra.</p>
<p>Birds sing at a higher pitch in urban noise</p>	<p>Slabbekoorn H and Peet M, 2003, Birds sing at a higher pitch in urban noise. Nature 424:267</p> <p>Notes: Brief communication. Abstract is key data paragraphs. N = 32. 42-63 dB range in habitat sound levels. Louder habitats = up to 50 Hz change.</p>	<p>We investigated an urban population of great tits in the Dutch city of Leiden. Noise amplitude measurements taken with a sound pressure meter, varied markedly between territories. Mean amplitude levels per territory ranged from 42 to 63 decibels, from very quiet in residential areas to extremely noisy near a highway or a busy crossing. We used a highly directional microphone for song recordings and an omnidirectional microphone for independent noise recordings at a height of 5 m. The spectral composition of ambient noise was generally characterized by loud, low-frequency sounds. We compared noise amplitude with the spectral distribution of sound energy within the range of the minimum frequency of great tit song and found that in noisy territories there is a greater proportion of sound energy in the lower half of this range than in quiet territories (Pearson's $\chi^2(0.001)$). We measured the acoustic characteristics of 32 male great tits, each of which had a repertoire of between three and nine distinct song types. Mean song frequencies varied considerably between individual birds. The average minimum frequency ranged from 2.82 to 3.77 kHz and was significantly correlated with ambient noise (multiple regression: $r^2=0.432$, $d.f. 42$, $F_{44,74}$, $P < 0.017$), with regard to both amplitude level ($\chi^2(3.02, P < 0.005)$) and spectral distribution ($\chi^2(412.0)$, $P < 0.055$). Noisy territories were home to great-tit males whose songs had a high average minimum frequency. Birds in quiet territories sang more notes that reached the lowest frequencies measured for the population.</p>
<p>Habitat-dependent song divergence in the little greenbul: an analysis of environmental selection pressures on acoustic signals</p>	<p>Slabbekoorn H and Smith TB, 2002, Habitat-dependent song divergence in the little greenbul: an analysis of environmental selection pressures on acoustic signals. Evolution 56(9):1849-1858</p> <p>Notes: N= 134 individuals from 12 populations/ acoustic measurements taken from 26 individuals from 12</p>	<p>Bird song is a sexual trait important in mate choice and known to be shaped by environmental selection. Here we investigate the ecological factors shaping song variation across a rainforest gradient in central Africa. We show that the little greenbul (<i>Andropadus virens</i>), previously shown to vary morphologically across the gradient in fitness-related characters, also varies with respect to song characteristics. Acoustic features, including minimum and maximum frequency, and delivery rate of song notes showed significant differences between habitats. In contrast, we found dialectal variation independent of habitat in population-typical</p>

	<p>populations. Relative dB estimated only.</p> <p>Conclusion: Lower ambient noise = lower minimum frequency</p>	<p>songtype sequences. This pattern is consistent with ongoing gene flow across habitats and in line with the view that song variation in the order in which songtypes are produced is not dependent on habitat characteristics in the same way physical song characteristics are. Sound transmission characteristics of the two habitats did not vary significantly, but analyses of ambient noise spectra revealed dramatic and consistent habitat-dependent differences. Matching between low ambient noise levels for low frequencies in the rainforest and lower minimal frequencies in greenbul songs in this habitat suggests that part of the song divergence may be driven by habitat-dependent ambient noise patterns. These results suggest that habitat-dependent selection may act simultaneously on traits of ecological importance and those important in prezygotic isolation, leading to an association between morphological and acoustic divergence. Such an association may promote assortative mating and may be a mechanism driving reproductive divergence across ecological gradients.</p>
<p>Sound transmission and song divergence: A comparison of urban and forest acoustics</p>	<p>Slabbekoorn H, Yeh P and Hunt K, 2007, Sound transmission and song divergence. A comparison of urban and forest acoustics. The Condor 109:67-78</p> <p>Notes: Urban vs. rural populations. Intensity level not quantified.</p> <p>Conclusion: Significantly higher minimum frequency in urban population vs. 3 of 4 forest populations/</p>	<p>Degradation of acoustic signals during transmission presents a challenging selection pressure for animals dependent on vocal communication. Sound transmission properties differ among habitats and may drive the evolution of vocal signals in different directions. Urban habitat is expanding worldwide and an increasing number of species, including many birds, must now communicate around buildings and over concrete. Urban habitats are evolutionarily new, although to some extent they may acoustically resemble rocky habitat such as cliffs and canyons. Neither urban nor these natural habitats have been studied in any detail for the selection pressure they may exert on animal communication. Dark-eyed Juncos (<i>Junco hyemalis</i>) commonly inhabit montane pine forests across North America, but for about 25 years an isolated population has been successfully breeding in an urban environment in southern California. We investigated potentially divergent selection pressures on junco songs, using sound transmission experiments with artificial sound stimuli, in natural forest habitat and in this urban habitat. Transmission properties differed significantly, resulting in tails of reflected sound with gradually declining amplitude in the forest and in multiple discrete echoes in the urban environment. We expected environmental selection in urban habitat to favor shorter songs with higher frequencies and slower trill rates. Despite the presence of relatively short urban songs, there was no significant shortening overall. There were also no differences in trill rates, but we did find a significantly higher minimum frequency in the urban junco population compared to three of four forest populations. Although the pattern of song divergence was not consistent and it is difficult to draw firm conclusions from this single urban population, our transmission results suggest that echoes could be important in shaping urban birdsong.</p>

<p>Song sparrow (<i>Melospiza melodia</i>) song varies with urban noise</p>	<p>Wood WE and Yezerinac SM, 2006, Song sparrow (<i>Melospiza melodia</i>) song varies with urban noise. The Auk 123(3):650-659</p> <p>Notes: N=28. Background/habitat noise varied from 54.8-71.3 dB(A).</p> <p>Conclusion: minimum freq. of song increased with increasing background level</p>	<p>In urban environments, anthropogenic noise may mask bird song, especially the notes occurring at lower frequencies (1-2 kHz). Birds living in urban environments may modify their songs, particularly the low-frequency portions, to minimize masking by anthropogenic noise. Such modifications have been observed in Great Tits (<i>Parus major</i>) in The Netherlands, as well as in some mammals. We studied Song Sparrows (<i>Melospiza melodia</i>), which are common in both urban and rural environments in much of North America, and recorded the songs of 28 free-living males in Portland, Oregon. We also measured the amplitude and spectrum of ambient noise at singing locations. Song Sparrows singing at noisier locations exhibited higher-frequency low notes and had relatively less energy (amplitude) in the low-frequency range of their songs (1-4 kHz), where most anthropogenic noise also occurred. Although the mechanism(s) producing the correlation are as yet undetermined, the observed match between song and noise may result from behavioral plasticity. We discuss explanations for these patterns and how to test them.</p>
<p>Auditory response characteristics of the piebald odororous frog and their implications</p>	<p>Yu Z-L, Qiu Q, Xu Z-M and Shen J-X, 2006, Auditory response characteristics of the piebald odororous frog and their implications. J Comp Physiol A 192:801-806</p> <p>Notes: Evolutionary frequency shift. Neuro verification of ultrasonic sensitivity in frogs w/evolutionary history near streams that create substantial ultrasonic background noise.</p>	<p>The piebald odorous frog (<i>Odorana schimackeri</i>), the large odorous frog (<i>Oobirana livida</i>) and the concealed eared torrent frog (<i>Amolops tormotus</i>) are sympatric species living near the same torrent streams in the vicinity of Mt. Huangshan, China. A recent study demonstrated that <i>A. tormotus</i> can use sound signals involving ultrasonic components for communication in a noisy environment, and another sympatric species, <i>O. livida</i>, can also perceive ultrasonic sound. Here we report data on the hearing range of <i>O. schimackeri</i> by studying auditory evoked potentials and single-unit data from the torus semicircularis. This frog exhibits its two most sensitive peaks at 2 kHz and 3.5-4.0 kHz with thresholds <42 dB SPL, with an upper frequency limit of hearing at 8.5 kHz with a threshold of 87 dB SPL. The upper limit is much lower than those of <i>O. livida</i> and <i>A. tormotus</i>, at 22 and 34 kHz, respectively. It suggests that sympatric species may respond differently to similar environmental selection pressures sculpting auditory communication systems.</p>
<p>Noise Effects on Signal Design: Temporal shifts</p>		
<p>Is there a sound reception window in coastal environments? Evidence from shorebird</p>	<p>Douglas HD and Conner WE, 1999, Is there a sound reception window in coastal environments? Evidence from shorebird communication systems.</p>	<p>Surf-generated noise forms a sound reception window in the coastal environment. This window has characteristics that tend to raise the frequency and compress the duration of animal signals. This pattern is manifest in the long-distance acoustical signal of the willet (<i>Catoptrophorus semipalmatus</i>). The signal of the eastern willet (<i>C.s. semipalmatus</i>), an obligate coastal breeder, is higher in</p>

<p>communication systems</p>		<p>frequency and shorter in duration than that of the western willet (C.S. <i>ironatus</i>), an obligate inland breeder. Thirty other shorebird species have signal characteristics that match the frequency parameters of this hypothetical window relatively well, suggesting that it has influenced animal communication.</p> <p>Organisms that use vocal signals to communicate often modulate their vocalizations to avoid being masked by other sounds in the environment. Although some environmental noise is continuous, both biotic and abiotic noise can be intermittent, or even periodic. Interference from intermittent noise can be avoided if calls are timed to coincide with periods of silence, a capacity that is unambiguously present in insects, amphibians, birds, and humans. Surprisingly, we know virtually nothing about this fundamental capacity in nonhuman primates. Here we show that a New World monkey, the cotton-top tamarin (<i>Saguinus oedipus</i>), can restrict calls to periodic silent intervals in loud white noise. In addition, calls produced during these silent intervals were significantly louder than calls recorded in silent baseline sessions. Finally, average call duration dropped across sessions, indicating that experience with temporally patterned noise caused tamarins to compress their calls. Taken together, these results show that in the presence of a predictable, intermittent environmental noise, cotton-top tamarins are able to modify the duration, timing, and amplitude of their calls to avoid acoustic interference.</p>
<p>Tracking silence: adjusting vocal production to avoid acoustic interference</p>	<p>Egnor SER, Wickelgren JG and Hauser MD, 2007, Tracking silence: adjusting vocal production to avoid acoustic interference. J. Comp. Physiol. A 193:477-483</p> <p>Notes: N = 8 (4 males, 4 females) Studied contact calls given in isolation. Bursts of patterned 80 dB(?) white noise. 10 min sessions, 1 session per day.</p> <p>Conclusion: Cotton-top Tamarin monkey restrict calls to periodic silent intervals in white noise. Call amplitude increases in patterned noise. Call duration decreases over time in patterned noise.</p>	
<p>Daytime noise predicts nocturnal singing in urban robins</p>	<p>Fuller RA, Warren PH, Gaston KJ, 2007, Daytime noise predicts nocturnal singing in urban robins. Biology Letters 3:368-370</p> <p>Notes: 121 point locations measured twice. A-weighted sound measurements.</p>	
<p>Anthropogenic sounds differentially affect amphibian call rate</p>	<p>Sun JWC and Narins PM, 2005, Anthropogenic sounds differentially affect amphibian call rate, Biological Conservation 121:419-427</p> <p>Notes: Airplane flyover levels estimated at 68-76 dB(C). Motorcycle noise played back at unspecified level greater than 80 dB(C).</p> <p>Conclusion: Three frogs (<i>Microhyla butleri</i>, <i>Rana</i></p>	<p>The effects of airplane flyby noise and playbacks of low-frequency motorcycle sounds on calling activity were examined in a mixed-species anuran calling assemblage in central Thailand. In response to these stimuli, three of the most acoustically active pondedge species (<i>Microhyla butleri</i>, <i>Rana nigrovittata</i> and <i>Kaloula pulchra</i>) significantly decreased their calling rate. Yet under the identical stimulus regime, <i>Rana taipehensis</i> consistently increased its calling rate. Moreover, during the occasional natural lulls in the chorus in which males collectively stop calling, resulting in a conspicuous reduction in chorus intensity, calls of <i>R. taipehensis</i> would appear to emerge from the background noise. These results suggest that man-made acoustic interference may affect anuran chorus behavior either directly by</p>

<p>The effects of rain on acoustic communication: tawny owls have good reason for calling less in wet weather</p>	<p><i>nigrovittata</i> and <i>Kaloula pulchra</i>) decreased calling rate to anthropogenic sounds. One, <i>Rana taipehensis</i>, increased calling rate, likely due to the decrease of the three dominant members of the anuran chorus.</p> <p>Lengagne T and Slater PJB, 2002, The effects of rain on acoustic communication: tawny owls have good reason for calling less in wet weather. Proc. R. Soc. Lond. B 269:2121-2125</p> <p>Notes: Tests of sensory discrimination threshold, N = 6, Field measurements of tawny calling behavior in the field, N = 22. Ambient noise measurements -- 20 instantaneous measurements (linear scale, slow setting) during dry (mean 33.4 dB(C)) and rainy (mean 52.2 dB(C)) nights.</p> <p>Conclusion: Even during the courtship period owls stop calling on rainy nights.</p>	<p>modulating call rates of the chorus participants or indirectly, by suppressing calling behavior of one set of species which in turn stimulates calling in other species. The results of our playback experiment coupled with the natural calling behavior of these species support the latter hypothesis.</p> <p>Numerous attempts have been made to quantify ecological factors that affect the calling range of animal signals. The various processes leading signals to become distorted and embedded in background noise have been described in many habitats (ranging from forest to savannah) and the propagation path in these biomes has thereby been characterized. However, the impact of climatic factors on acoustic communication has been little studied. Surprisingly, to our knowledge, the importance of rain, a regular phenomenon occurring in all habitats except deserts, has never been investigated. Here, we describe a 69-fold advantage in area reached by the call of a territorial bird, the tawny owl (<i>Strix aluco</i>) in dry versus rainy conditions. In support of this, we found a marked reduction in the calling of tawny owls in rainy conditions. Constraints imposed by a rainy propagation path are likely to modify the reliability of acoustic information and thus calling behaviour of many animals.</p>
<p>Reduced Listening Area</p>		
<p>Chronic industrial noise affects pairing success and age structure of ovenbirds <i>Seiurus aurocapilla</i></p>	<p>Habib L, Bayne EM and Boutin S (2007) Chronic industrial noise affects pairing success and age structure of ovenbirds <i>Seiurus aurocapilla</i>. Journal of Applied Ecology. 44:176-184.</p> <p>Notes: N = 20 compressor sites (54 birds) and N = 21 control sites (56 birds). No acoustic analysis.</p>	<ol style="list-style-type: none"> 1. Anthropogenic noise is rapidly increasing in wilderness areas as a result of industrial expansion. While many road studies have attempted to assess the effects of industrial noise on birds, conflicting factors such as edge effects often inhibit the ability to draw strong conclusions. 2. We assessed pairing success and age distribution of male ovenbirds <i>Seiurus aurocapilla</i> in the boreal forest of Alberta, Canada, in areas around noise-generating compressor stations compared with areas around habitat-disturbed, but noiseless, wellpads. This allowed us to control for edge effects, human visitation and other factors that are not controlled for in studies of noise generated by roads. Generalized estimating equations (GEE) were used to assess the impacts of noise on ovenbird pairing success, age structure and body morphology. 3. We found a significant reduction in ovenbird pairing success at compressor sites (77% compared with noiseless wellpads (92%). These differences were apparent regardless of territory quality or individual male quality. Significantly more inexperienced birds breeding for the first time were found near noise-generating compressor stations than noiseless wellpads (48% vs. 30%).

		<p>4. While there are multiple proximate explanations for these results, the ultimate cause of the changes seems to be noise pollution. We hypothesize that noise interferes with a male's song, such that females may not hear the male's song at greater distances and/or females may perceive males to be of lower quality because of distortion of song characteristics.</p> <p>5. Synthesis and applications.</p> <p>This work demonstrates that chronic background noise could be an important factor affecting bird populations. It can impact upon pairing success and age structure of passerines; in boreal Alberta this could pose a problem for certain species as energy development expands rapidly.</p>
<p>Noise, predation risk compensation and vigilance in the chaffinch <i>Fringilla coelebs</i></p>	<p>Quinn JL, Whittingham MJ, Butler SJ and Cresswell W, 2006, Noise, predation risk compensation and vigilance in the chaffinch <i>Fringilla coelebs</i>, Journal of Avian Biology 37:601-608</p> <p>Notes: N = 22 White noise played back at 65 dB(A)</p> <p>Conclusion: Increased vigilance (specifically inter-visual scan interval) during noise treatment, reduced food intake rate</p>	<p>Background noise should in theory hinder detection of auditory cues associated with approaching danger. We tested whether foraging chaffinches <i>Fringilla coelebs</i> responded to background noise by increasing vigilance, and examined whether this was explained by predation risk compensation or by a novel stimulus hypothesis. The former predicts that only inter-scan interval should be modified in the presence of background noise, not vigilance levels generally. This is because noise hampers auditory cue detection and increases perceived predation risk primarily when in the head-down position, and also because previous tests have shown that only inter-scan interval is correlated with predator detection ability in this system. Chaffinches only modified inter-scan interval supporting this hypothesis. At the same time they made significantly fewer pecks when feeding during the background noise treatment and so the increased vigilance led to a reduction in intake rate, suggesting that compensating for the increased predation risk could indirectly lead to a fitness cost. Finally, the novel stimulus hypothesis predicts that chaffinches should habituate to the noise, which did not occur within a trial or over 5 subsequent trials. We conclude that auditory cues may be an important component of the trade-off between vigilance and feeding, and discuss possible implications for anti-predation theory and ecological processes.</p>
<p>The effects of wind turbines on antipredator behavior in California ground squirrels (<i>Spermophilus beecheyi</i>)</p>	<p>Rabin LA, Coss RG, Owings DH (2006) The effects of wind turbines on antipredator behavior in California ground squirrels (<i>Spermophilus beecheyi</i>). Biological Conservation in press</p> <p>Notes: Sound clips recorded at control (mean 79.8 dB, range 70-88 dB) and experimental (mean 110.2 dB, range 93-118 dB) sites, elicited by a dog predator. Sound level at each site</p>	<p>Electricity-generating wind turbines are an attractive energy source because they are renewable and produce no emissions. However, they have at least two potentially damaging ecological effects. Their rotating blades are hazardous to raptors which occasionally fly into them. And wind turbines are very noisy when active, a feature that may interfere with the lives of animals beneath them. We studied California ground squirrels (<i>Spermophilus beecheyi</i>) in the Altamont Pass Wind Resource Area of Northern California. These squirrels emit vocalizations that alert others to the presence of a predator, and so may be forced to compensate for turbine noise by modifying antipredator behavior. We compared the antipredator behavior of</p>

	<p>(dB weighting not reported, assume C) estimated with 20, 5 sec readings taken on hold with B&K 2209 set at Impulse_Hold—readings averaged.</p> <p>N = 42 (8 adults, 34 juveniles) at the turbine site, N = 52 (7 adults, 45 juveniles) at the control site</p>	<p>squirrels at two sites, one close to and the other far from turbines, and under two conditions, during baseline and playback of conspecific alarm calls. We generated composite two variables using principle components analysis, one representing vigilance and one representing another cautionary antipredator tactic, for further statistical comparisons. Animals at the Turbine site exhibited elevated levels of vigilance and showed increased caution demonstrated in part, by returning to the area near their burrows during alarm calling. We conclude that this site difference is probably caused by the disparity in turbine noise, since predator abundance, group size, and vegetation type and density were similar for the two sites. Though population level impacts of these behavioral differences remain to be explored, our results indicate that behavioral impacts of turbines on wildlife should be considered during future turbine development.</p>
Masking		
<p>Masking interference and the evolution of the acoustic communication system in the Amazonian dendrobatid frog <i>Allobates femoralis</i></p>	<p>Amezquita A, Hodl W, Lima AP, Castellanos L, Erdtmann L and De Araujo MC, 2006, Masking interference and the evolution of the acoustic communication system in the Amazonian dendrobatid frog <i>Allobates femoralis</i>. Evolution 60(9):1874-1887.</p> <p>Notes: Geographic presence of conspecifics calling in a similar frequency range effect receiver characteristics.</p>	<p>The efficacy of communication relies on detection of species-specific signals against the background noise. Features affecting signal detection are thus expected to evolve under selective pressures represented by masking noise. Spectral partitioning between the auditory signals of co-occurring species has been interpreted as the outcome of the selective effects of masking interference. However, masking interference depends not only on signal's frequency but on receiver's range of frequency sensitivity; moreover, selection on signal frequency can be confounded by selection on body size, because these traits are often correlated. To know whether geographic variation in communication traits agrees with predictions about masking interference effects, we tested the hypothesis that variation in the male-male communication system of the Amazonian frog, <i>Allobates femoralis</i>, is correlated with the occurrence of a single species calling within an overlapping frequency range, <i>Epipheobates trivittatus</i>. We studied frogs at eight sites, four where both species co-occur and four where <i>A. femoralis</i> occurs but <i>E. trivittatus</i> does not. To study the sender component of the communication system of <i>A. femoralis</i> and to describe the use of the spectral range, we analyzed the signal's spectral features of all coactive species at each site. To study the receiver component, we derived frequency-response curves from playback experiments conducted on territorial males of <i>A. femoralis</i> under natural conditions. Most geographic variation in studied traits was correlated with either call frequency or with response frequency range. The occurrence of <i>E. trivittatus</i> significantly predicted narrower and asymmetric frequency-response curves in <i>A. femoralis</i>, without concomitant differences in the call or in body size. The number of acoustically coactive species did not significantly predict variation in any of the studied traits. Our results strongly support that the receiver</p>

<p>Localisation of an acoustic signal in a noisy environment: the display call of the king penguin <i>Aptenodytes patagonicus</i></p>	<p>Aubin T and Jouventin P, 2002, Localisation of an acoustic signal in a noisy environment: the display call of the king penguin <i>Aptenodytes patagonicus</i>. Journal of Experimental Biology 205:3793-3798</p>	<p>but not the sender component of the communication system changed due to masking interference by a single species. King penguin chicks identify their parents by an acoustic signal, the display call. This call consists of a succession of similar syllables. Each syllable has two harmonic series, strongly modulated in frequency and amplitude, with added beats of varying amplitude generated by a two-voice system. Previous work showed that only one syllable of the call is needed for the chick to identify the calling adult. Both the frequency modulation pattern of the syllable and the two-voice system play a role in the call identification. The syllabic organisation of the call, the harmonic structure and the amplitude modulations of the syllables apparently do not contribute to individual recognition. Are these acoustic features useless? To answer to this question, playback experiments were conducted using three categories of experimental signals: (i) signal with only the fundamental frequencies of the natural call, (ii) signal with the amplitude of each syllable kept at a constant level and (iii) signals with only one syllable, repeated or not. The responses of chicks to these experimental signals were compared to those obtained with the calls of their natural parents. We found that these acoustic features, while not directly implicated in the individual recognition process, help the chicks to better localise the signal of their parents. In addition, the redundant syllabic organisation of the call is a means of counteracting the masking effect of the background noise of the colony.</p>
<p>Penguins and their noisy world</p>	<p>Aubin T, 2004, Penguins and their noisy world. Anais da Academia Brasileira de Ciencias 76(2):279-283 Notes: Good summary of Aubin's extensive work on how penguins use acoustic signals to find each other in the noise of the colony (~75dB).</p>	<p>Penguins identify their mate or chick by an acoustic signal, the display call. This identification is realized in a particularly constraining environment: the noisy world of a colony of thousands of birds. To fully understand how birds solve this problem of communication, we have done observations, acoustic analysis, propagation and playback experiments with 6 species of penguins studied in the field. According to our results, it appears that penguins use a particularly efficient "anti-confusion" and "anti-noise" coding system, allowing a quick identification and localization of individuals on the move in a noisy crowd.</p>
<p>A software model to estimate zones of impact on marine mammals around anthropogenic noise</p>	<p>Erbe C and Farmer DM, 2000, A software model to estimate zones of impact on marine mammals around anthropogenic noise. <i>J. Acoust. Soc. Am.</i> 108(3):1327-1331</p>	<p>Anthropogenic noise impacts marine mammals in a variety of ways. In order to estimate over which ranges this happens, we first need to understand the propagation of noise through the ocean away from the noise source, and, second, understand the relationship between received noise levels and impact thresholds. A software package combining both aspects is presented. ~1! A sound propagation model based on ray theory was developed to calculate received noise levels as a function of range, depth, and frequency. ~2! Current knowledge of noise impact thresholds for marine mammals was gathered and included in software routines predicting zones of impact on marine mammals around industrial underwater noise sources. As input</p>

		<p>parameters; this software package requires the source level and spectrum of the noise of interest; physical oceanography data about the local ocean environment such as bathymetry, bottom and surface loss data, and sound speed profiles; and bioacoustical information about the target species in the form of an audiogram, critical auditory bandwidths, spectra of typical animal vocalizations, reported sound levels of disturbance, and criteria for hearing damage. As output, the software produces data files and plots of the zones of audibility, masking, disturbance, and potential hearing damage around a noise source.</p>
<p>Masking of acoustic signals by the chorus background noise in the green tree frog: a limitation on mate choice</p>	<p>Gerhardt HC and Klump GM, 1987, Masking of acoustic signals by the chorus background noise in the green tree frog: a limitation on mate choice. <i>Animal Behavior</i> 36(3):1247-1249</p>	<p>No abstract: see Wollman's work for current treatment of problem</p>
<p>Comodulation masking release in a songbird</p>	<p>Klump GM and Langemann U, 1995, Comodulation masking release in a songbird. <i>Hearing Research</i> 87:157-164.</p>	<p>Comodulation masking release (CMR) describes the reduced masking of a pure tone when the masking is a noise that is coherently amplitude modulated (comodulated) over the total range of the spectrum compared to masking by an unmodulated noise of the same bandwidth and overall energy. The masking release results from cues available within a critical band and from cues generated by comparisons across critical bands ('true' CMR). Here we report data on masking release and 'true' CMR in a songbird, the European starling (<i>Sturnus vulgaris</i>), that was demonstrated in a psychoacoustic experiment using a GO/NOGO paradigm. Masked thresholds for 2-kHz tones centered in digitally generated continuous masking noise of different bandwidths were determined, and the amount of masking release was calculated as the threshold difference between the unmodulated and the comodulated condition. In the first experiment the modulator was a 50-Hz lowpass noise. A masking release of 11.8 dB was found for the noise masker with the largest bandwidth (1600 Hz). With the masker bandwidth decreasing to 50 Hz, the birds' release from masking was reduced to 1.6 dB. The starling's 'true' CMR was 4 dB or 8 dB, depending on the definition that was applied. In a second experiment the masker bandwidth was constant (1600 Hz) and the cut-off frequency of the modulator was varied. A release from masking of 17.8 dB was found for a modulator cut-off frequency of 12.5 Hz. It decreased to 6.1 dB with an increase in the modulator cut-off frequency to 400 Hz. The duration of the test signal (100-750 ms) had little effect on the release from masking. Given the similarities in the release from masking and in CMR of starlings and humans, the starling may provide an excellent model for</p>

<p>Detection and discrimination of natural calls in masking noise by birds: estimating the active space of a signal</p>	<p>Lohr B, Wright TF and Dooling RJ, 2003, Detection and discrimination of natural calls in masking noise by birds: estimating the active space of a signal. Animal Behaviour 65:763-777</p> <p>Notes: Signals (3-5 kHz tones and calls) were masked by white noise but not by traffic noise. White noise = bandlimited 900-8000 Hz, ~ equal energy at all freq. played back at 50, 60 and 70 dB(A). Traffic noise was created using the above flat noise with a -2.87 dB/kHz drop-off above 1400 Hz (taken from several traffic noise studies).</p> <p>Conclusion: when predicting the masking effects of continuous noise, the specific spectral shape of the noise is less important than the signal-to-noise level within the frequency band of maximum signal power.</p>	<p>studying the mechanisms that underlie the generation of CMR. We tested the ability of birds to detect and discriminate natural vocal signals in the presence of masking noise using operant conditioning. Masked thresholds were measured for budgerigars, <i>Melospitacus undulatus</i>, and zebra finches, <i>Taeniopygia guttata</i>, on natural contact calls of budgerigars, zebra finches and canaries, <i>Serinus canaria</i>. Thresholds increased with increasing call bandwidth, the presence of amplitude modulation and high rates of frequency modulation in calls. As expected, detection thresholds increased monotonically with background noise level. Call detection thresholds varied with the spectral shape of noise. Vocal signals were masked predominantly by noise energy in the spectral region of the signals and not by energy at spectral regions remote from the signals. In all cases, thresholds for discrimination between calls of the same species were higher than thresholds for detection of those calls. Our data provide the first opportunity to estimate distances over which specific communication signals may be effective (i.e. their 'active space') using masked thresholds for the signals themselves. Our results suggest that measures of peak sound pressure level, combined with the spectrum level of noise within the frequency channel having the greatest signal power relative to background noise, give the most similar results for estimating a signal's maximum communication distance across a variety of sounds. We provide a simple model for estimating likely detection and discrimination distances for the signals tested here.</p> <p>See pdf</p>
<p>Additivity of masking in normally hearing and hearing-impaired subjects</p>	<p>Oxenham AJ and Moore BCJ, 1995, Additivity of masking in normally hearing and hearing-impaired subjects. J. Acoust. Soc. Am. 98(4):1921-1934</p> <p>Notes: Two equally effective nonsimultaneous maskers increase amount of masking by 3-4 dB</p>	
<p>Suppression and the upward spread of masking</p>	<p>Oxenham AJ and Plack CJ, 1998, Suppression and the upward spread of masking. J. Acoust. Soc. Am. 104(6):3500-3510</p>	<p>The purpose of this study is to clarify the role of suppression in the growth of masking when a signal is well above the masker in frequency ~upward spread of masking!. Classical psychoacoustic models assume that masking is primarily due to the spread of masker excitation, and that the nonlinear upward spread of masking reflects a differential growth in excitation between the masker and the signal at the signal frequency. In contrast, recent physiological studies have indicated that upward spread of masking in the auditory nerve is due to the increasing effect of suppression with increasing masker level. This study compares thresholds for signals between 2.4 and 5.6 kHz in simultaneous and nonsimultaneous masking for conditions in which the masker is either at or well below the signal frequency. Maximum differences between simultaneous and nonsimultaneous masking were small ~.6 dB! for the on-frequency</p>

		<p>conditions but larger for the off-frequency conditions –15-32 dB). The results suggest that suppression plays a major role in determining thresholds at high masker levels, when the masker is well below the signal in frequency. This is consistent with the conclusions of physiological studies. However, for signal levels higher than about 40 dB SPL, the growth of masking for signals above the masker frequency is nonlinear even in the nonsimultaneous-masking conditions, where suppression is not expected. This is consistent with an explanation based on the compressive response of the basilar membrane, and confirms that suppression is not necessary for nonlinear upward spread of masking.</p> <p>Many natural sounds, including speech and animal vocalizations, involve rapid sequences that vary in spectrum and amplitude. Each sound within a sequence has the potential to affect the audibility of subsequent sounds in a process known as forward masking. Little is known about the neural mechanisms underlying forward masking, particularly in more realistic situations in which multiple sounds follow each other in rapid succession. A parsimonious hypothesis is that the effects of consecutive sounds combine linearly, so that the total masking effect is a simple sum of the contributions from the individual maskers. The experiment reported here tests a counterintuitive prediction of this linear-summation hypothesis, namely that a sound that itself is inaudible should, under certain circumstances, affect the audibility of subsequent sounds. The results show that, when two forward maskers are combined, the second of the two maskers can continue to produce substantial masking, even when it is completely masked by the first masker. Thus, inaudible sounds can affect the perception of subsequent sounds. A model incorporating instantaneous compression (reflecting the nonlinear response of the basilar membrane in the cochlea), followed by linear summation of the effects of the maskers, provides a good account of the data. Despite the presence of multiple sources of nonlinearity in the auditory system, masking effects by sequential sounds combine in a manner that is well captured by a time-invariant linear system.</p> <p>See pdf</p>
<p>Masking by inaudible sounds and the linearity of temporal summation</p>	<p>Plack CJ, Oxenham AJ and Draga V, 2006, Masking by inaudible sounds and the linearity of temporal summation. Journal of Neuroscience 26(34):8767-8773</p>	
<p>Masking patterns in the bullfrog (Rana catesbeiana). I: Behavioral effects</p>	<p>Simmons AM, 1988, Masking patterns in the bullfrog (Rana catesbeiana). I: Behavioral effects. J. Acoust. Soc. Am. 83(3):1087-1092</p>	
<p>The role of synchronized calling, ambient light, and ambient noise, in anti-bat-predator behavior of a treefrog</p>	<p>Tuttle MD and Ryan MJ, 1982, The role of synchronized calling, ambient light, and ambient noise, in anti-bat-predator behavior of a treefrog. Behav. Ecol. Sociobiol. 11:125-131</p> <p>Notes: Levels poorly or not measured. Relevant finding-</p>	<p>Male treefrogs, <i>Smilisca sila</i> (Hylidae), produce calls of varying complexity and demonstrate a remarkable ability to synchronize their calls with those of neighbors. The bat <i>Trachops cirrhosus</i> eats frogs and uses the frogs' advertisement calls as locational cues. The bats are less likely to respond to synchronous calls than to asynchronous calls, and when given a choice prefer complex calls to simple calls. Experiments with bat models indicate that, like other frogs, <i>S. sila</i></p>

	<p>frogs called from areas of higher ambient noise (i.e. near waterfalls) and bats preferred to hunt in areas of lower ambient noise.</p>	<p>probably uses visual cues to detect hunting bats. In response to bat models the frogs decreased both the number and the complexity of their calls. The calling behavior of the frogs was sampled in the field during periods with and without artificial illumination. The frogs produced fewer and less complex calls, and they tended to call from more concealed sites, during the period without illumination, when presumably it would have been more difficult for the frogs to detect hunting bats. <i>S. siva</i> tended to call from sites with higher ambient noise level, the noise primarily originating from waterfalls. The frequencies of the dominant energies in the waterfall sounds completely overlapped the frequency range of the <i>S. siva</i> call; thus waterfalls might mask the frog calls. When given a choice between calls produced near and away from waterfall sounds, bats preferred the latter.</p>
<p>Effects of ship noise on the detectability of communication signals in the Lusitanian toadfish</p>	<p>Vasconcelos RO, Amorim MCP, Ladich F, 2007, Effects of ship noise on the detectability of communication signals in the Lusitanian toadfish. Journal of Experimental Biology 210:2104-2112</p>	<p>Underwater noise pollution is an increasing environmental problem which might affect communication, behaviour, fitness and consequently species' survival. The most common anthropogenic noises in aquatic habitats derive from shipping. In the present study we investigated the implications of noise pollution from a ship on the sound detectability, namely of conspecific vocalizations in the Lusitanian toadfish, <i>Halobatrachus didactylus</i>. Ambient and ferry-boat noises were recorded in the Tagus River estuary (Portugal), as well as toadfish sounds, and their sound pressure levels determined. Hearing sensitivities were measured under quiet lab conditions and in the presence of these masking noises at levels encountered in the field, using the auditory evoked potentials (AEP) recording technique. The Lusitanian toadfish is a hearing generalist, with best hearing sensitivity at low frequencies between 50 and 200 Hz (below 100 dB re. 1 µPa). Under ambient noise conditions, hearing was only slightly masked at lower frequencies. In the presence of ship noise, auditory thresholds increased considerably, by up to 36 dB, at most frequencies tested. This is mainly because the main energies of ferry-boat noise were within the most sensitive hearing range of this species. Comparisons between masked audiograms and sound spectra of the toadfish's mating and agonistic vocalizations revealed that ship noise decreased the ability to detect conspecific acoustic signals. This study provides the first evidence that fishes' auditory sensitivity can be impaired by ship noise and that acoustic communication, which is essential during agonistic encounters and mate attraction, might be restricted in coastal environments altered by human activity.</p>
<p>Background noise from a natural chorus alters female discrimination of male calls in a Neotropical frog</p>	<p>Wollerman L and Wiley RH, 2001, Background noise from a natural chorus alters female discrimination of male calls in a Neotropical frog. <i>Animal Behaviour</i> 62:</p>	<p>Many animals communicate in environments with high levels of background noise. Although it is a fundamental prediction of signal detection theory that noise should reduce both detection and discrimination of signals, little is known about these effects in animal communication. Female treefrogs, <i>Hyla ebraccata</i>, in Costa Rica choose mates in large noisy multispecies choruses. We tested gravid</p>

<p>frog</p>		<p>females for preferences between computer-synthesized calls with carrier frequencies of 3240 and 2960 Hz (values near the mode and the fifth percentile of the population, respectively) in four levels of background noise from a natural chorus. In the absence of noise (signal/noise ratio >25 dB), females preferred the lower frequency. With moderate signal/noise ratios (6 and 9 dB), they did not discriminate between these frequencies. With low signal/noise ratios (3 dB), females preferred the frequency near the mode for the population. Similar experiments had previously demonstrated that females can detect the presence of a male's calls with signal/noise ratios of 3 dB or greater. Thus moderate levels of natural background sound reduced a female's ability to discriminate between males' calls even when she could detect them. In high levels of background sound, females abandoned discrimination for low-frequency calls and reverted to the task of detecting signals with modal properties for the population. These results justify recent theoretical analyses of the importance of receivers' errors in the evolution of communication.</p>
<p>Acoustic interference limits call detection in a Neotropical frog <i>Hyla ebraccata</i></p>	<p>Wollerman L, 1999, Acoustic interference limits call detection in a Neotropical frog <i>Hyla ebraccata</i>. <i>Animal Behaviour</i>. Animal Behaviour 57:529-536</p>	<p>Problems associated with communication in noisy environments include detection, discrimination, and localization of appropriate signals. I investigated the effects of broadband background noise on call detection by female <i>Hyla ebraccata</i>, a Neotropical treefrog. In playback experiments, I offered females a choice between two stimuli: chorus noise alone or chorus noise plus a computer-synthesized call. By systematically increasing the level of chorus noise, I determined that females could no longer reliably choose between the two speakers when the signal-to-noise ratio was +1.5 dB or lower. By taking the distribution of calling males into account, I estimated that females detect only the nearest male. If a female were to sample more than a very few males, she would need to move around the chorus. By doing so, she probably increases the costs of mate choice. Thus, the noise of a chorus impairs the ability of females to detect conspecific calls and thereby limits their ability to choose between mates. These limitations could have serious implications for the evolution of signalers' and receivers' behaviour.</p>
<p>Vigilance</p>		
<p>Induced or routine vigilance while foraging</p>	<p>Blanchard P and Fritz H, 2007, Induced or routine vigilance while foraging. Oikos OnlineEarly</p>	<p>Notes: Impalas experimentally alarmed raised their heads faster and subsequently chewed less both in total and per second of time spent vigilant. Animals reduced chewing probably to listen for predators (and possibly to stabilize the visual field). Authors argue for two types of vigilance. One, induced, being more costly.</p>
<p>A simple rule for the costs of vigilance: empirical evidence from a social</p>	<p>Cowlishaw G, Lawes MJ, Lightbody M, Martin A, Pettifor R and Rowcliffe JM, 2003, A simple rule for the costs of vigilance: empirical evidence from a social forager. Proc. R.</p>	<p>It is commonly assumed that anti-predator vigilance by foraging animals is costly because it interrupts food searching and handling time, leading to a reduction in feeding rate. When food handling does not require visual attention, however, a forager may handle food while</p>

<p>forager</p>	<p>Soc. Lond. Series B 271:27-33 Notes: Model challenged by Fortin et al. 2004</p>	<p>simultaneously searching for the next food item or scanning for predators. We present a simple model of this process, showing that when the length of such compatible handling time H_c is long relative to search time S, specifically $H_c/S \gg 1$, it is possible to perform vigilance without a reduction in feeding rate. We test three predictions of this model regarding the relationships between feeding rate, vigilance and the H_c/S ratio, with data collected from a wild population of social foragers (samarango monkeys, <i>Cercopithecus mitis erythrarchus</i>). These analyses consistently support our model, including our key prediction: as H_c/S increases, the negative relationship between feeding rate and the proportion of time spent scanning becomes progressively shallower. This pattern is more strongly driven by changes in median scan duration than scan frequency. Our study thus provides a simple rule that describes the extent to which vigilance can be expected to incur a feeding rate cost.</p>
<p>Does an opportunistic predator preferentially attack nonvigilant prey?</p>	<p>Cresswell W, Lind J, Kaby U, Quinn JL and Jakobsson S, 2003, Does an opportunistic predator preferentially attack nonvigilant prey? Animal Behaviour 66:643-648 Notes: Punchline: opportunistic predators attack vigilant and nonvigilant- stalking predators attack nonvigilant</p>	<p>The dilution effect as an antipredation behaviour is the main theoretical reason for grouping in animals and states that all individuals in a group have an equal risk of being predated if equally spaced from each other and the predator. Stalking predators, however, increase their chance of attack success by preferentially targeting nonvigilant individuals, potentially making relative vigilance rates in a group relatively important in determining predation compared with the dilution effect. Many predators, however, attack opportunistically without stalking, when targeting of nonvigilant individuals may be less likely, so that the dilution effect will then be a relatively more important antipredation reason for grouping. We tested whether an opportunistically hunting predator, the sparrowhawk, <i>Accipiter nisus</i>, preferentially attacked vigilant or feeding prey models presented in pairs. We found that sparrowhawks attacked vigilant and feeding mounts at similar frequencies. Our results suggest that individuals should prioritize maximizing group size or individual vigilance dependent on the type of predator from which they are at risk. When the most likely predator is a stalker, individuals should aim to have the highest vigilance levels in a group, and there may be relatively little selective advantage to being in the largest group. In contrast, if the most likely predator is an opportunist, then individuals should simply aim to be in the largest group and can also spend more time foraging without compromising predation risk. For most natural systems this will mean a trade-off between the two strategies dependent on the frequency of attack of each predator type.</p>
<p>Good foragers can also be good at detecting predators</p>	<p>Cresswell W, Quinn JL, Wittingham MJ and Butler S, 2003, Good foragers can also be good at detecting predators. Proc. R. Soc. Lond. Series B 270:1069-1076</p>	<p>The degree to which foraging and vigilance are mutually exclusive is crucial to understanding the management of the predation and starvation risk trade-off in animals. We tested whether wild-caught captive chaffinches that feed at a higher rate do so at the expense of their speed in responding to a model sparrowhawk flying nearby, and whether consistently good foragers will therefore tend to respond more</p>

	<p>Notes: N = 50.</p>	<p>slowly on average. First, we confirmed that the time taken to respond to the approaching predator depended on the rate of scanning: as head-up rate increased so chaffinches responded more quickly. However, against predictions, as peck rate increased so head-up rate increased and mean length of head-up and head-down periods decreased. Head-up rate was probably dependent on peck rate because almost every time a seed was found, a bird raised its head to handle it. Therefore chaffinches with higher peck rates responded more quickly. Individual chaffinches showed consistent durations of both their head-down and head-up periods and, therefore, individuals that were good foragers were also good detectors of predators. In relation to the broad range of species that have a similar foraging mode to chaffinches, our results have two major implications for predation/starvation risk trade-offs: (i) feeding rate can determine vigilance scanning patterns; and (ii) the best foragers can also be the best at detecting predators. We discuss how our results can be explained in mechanistic terms relating to fundamental differences in how the probabilities of detecting food rather than a predator are affected by time. In addition, our results offer a plausible explanation for the widely observed effect that vigilance continues to decline with group size even when there is no further benefit to reducing vigilance.</p>
<p>Predator detection and avoidance by starlings under differing scenarios of predation risk</p>	<p>Devereux CL, Whittingham MJ, Fernandez-Juritic E, Vickery JA, Krebs JR, 2006, Predator detection and avoidance by starlings under differing scenarios of predation risk. Behavioral Ecology 17(2):303-309</p> <p>Notes: Increased predation = decreased foraging, increased vigilance. Starlings slower to respond to predation when head is down and more so in visually-obstructed vs. open habitats.</p>	<p>Practically all animals must find food while avoiding predators. An individual's perception of predation risk may depend on many factors, such as distance to refuge and group size, but it is unclear whether individuals respond to different factors in a similar manner. We tested whether flocks of foraging starlings responded in the same way to an increased perception of predation risk by assessing three factors: (1) neighbor distances, (2) habitat obstruction, and (3) recent exposure to a predator. We found that in all three scenarios of increased risk, starlings reduced their interscan intervals (food-searching bouts), which increased the frequency of their vigilance periods. We then examined how one of these factors, habitat obstruction, affected escape speed by simulating an attack with a model predator. Starlings were slower to respond in visually obstructed habitats (long grass swards) and slower when they had their head down in obstructed habitats than when they had their head down in open habitats. In addition, reaction times were quicker when starlings could employ their peripheral fields of vision. Our results demonstrate that different sources of increased risk can generate similar behavioral responses within a species. The degree of visibility in the physical and social environment affects both the actual and perceived risk of predation.</p>
<p>Increasing the costs of conspecific scanning in socially foraging starlings affects vigilance and</p>	<p>Fernandez-Juritic E, Smith R and Kacelnik A, 2005, Increasing the costs of conspecific scanning in socially foraging starlings affects vigilance and foraging behaviour. Animal Behaviour 69:73-81</p>	<p>Social foragers receive and use information both about companions (social information) and about events external to the group, such as presence of potential predators. Scanning behaviour is often incorporated in theoretical models using simplifying assumptions in relation to the trade-off in information gathering between body</p>

<p>foraging behavior</p>	<p>Notes: Some information about conspecifics is gathered when head is down, thus head-up is not a perfect measure of vigilance.</p>	<p>postures (head-up versus head-down); however, some avian visual systems may allow individuals to scan in both body postures. We studied these issues experimentally, using starlings, <i>Sturnus vulgaris</i>, foraging in enclosures on natural fields. We varied the availability of information from conspecifics by placing visual barriers that blocked the view when the subjects were in head-down position and by manipulating the distance between group members. We found that as social information was reduced, starlings spent more time scanning (on and off the ground) and head-up scanning was mainly oriented towards conspecifics. The visual-obstruction effects imply that some information about conspecifics is normally gathered while starlings are foraging head-down. Neighbour distance and visual obstruction negatively affected food-searching rates and intake rates in two ways: (1) the effect of obstruction was mediated mostly through time competition between foraging and scanning on the ground, and (2) the effect of distance was due to a reduction in the rate of prey returns per searching effort while the birds were head-down. We conclude that the head-up posture is only one component of scanning, that the effects of head-down scanning should also be considered in species with ample visual fields, and that scanning in starlings is strongly connected to monitoring other flock members.</p>
<p>Foraging costs of vigilance in large mammalian herbivores</p>	<p>Fortin, D. Boyce MS, Merrill EH and Fryxell, 2004, Foraging costs of vigilance in large mammalian herbivores. Oikos 107:172-180</p> <p>Notes: Despite models (Cowlshaw et al. 2003) and time budget analysis (bison and elk: this study) that predict that chewing time exceeds the time animals spend searching for food, interacting with conspecifics and scanning, there was not a positive correlation between duration of scanning bouts and the number of consecutive bites taken just before vigilance events. Thus vigilance is costly. As vigilance increases, bite rate decreases.</p>	<p>Vigilance has been assumed to reduce food intake by taking away time from food processing. Such foraging costs of vigilance have been predicted to have profound effects on the structure of communities. Recently, however, it has been argued that mammalian herbivores might be capable of maintaining their rate of food intake despite being vigilant, because of their ability to scan the environment while chewing vegetation. We conducted behavioral observations to evaluate whether vigilance decreases the bite rate of free-ranging female bison (Bison bison) in Prince Albert National Park and elk (Cervus canadensis) in Yellowstone National Park. Modeling of foraging processes indicated that chewing time exceeded the time that bison and elk spent searching for food, interacting with conspecifics, and scanning. Consequently, bison and elk might have been capable of maintaining their rate of food intake despite vigilance. The maintenance of intake rate would have required bison and elk to match scanning events closely with chewing bouts, but we did not detect a positive correlation between the duration of scanning bouts and the number of consecutive bites taken just before vigilance events. As a result, vigilance was costly, and as it increased, bite rate declined for both herbivore species. Scanning still overlapped partially with food handling. Indeed, we estimated that 31% of feeding time being vigilant decreased bite rate by 20% for bison and 26% for elk, whereas total absence of overlap between chewing and scanning should have reduced bite rate by 31%. While we observed that vigilance induced foraging costs, these costs were less important than</p>

<p>Scanning behavior of rats during eating under stressful noise</p>	<p>Krebs H, Weyers P, Macht M, Weijers H-G and Janke W, 1997, Scanning behavior of rats during eating under stressful noise. <i>Physiology and Behavior</i> 62(1):151-154 Notes: 60 dB hardly seems like a 'control' condition Lima SL and Bednekoff PA, 1999, Back to the basics of antipredatory vigilance: can nonvigilant animals detect attack? <i>Animal Behaviour</i> 58:537-543</p>	<p>traditionally assumed. In the present experiment, eating speed and scanning behavior during eating were measured in 36 rats in 5 consecutive test sessions under stressful noise (95 dB white noise, n = 18) and control conditions (60 dB, n = 18) after the animals had been habituated to the test environment. Intense noise induced an increase of scanning rate and eating speed. These effects are similar to those reported for novel and light environments. Many birds and mammals respond to a heightened risk of predation, especially that associated with smaller group sizes, with an increase in vigilance. All interpretations of the way in which vigilance responds to changes in predation risk assume that animals feeding with their heads down (i.e. animals in a nonvigilant state) cannot detect approaching predators. We provide the first explicit test of this assumption by 'flying' a mounted hawk down a 15-m chute towards actively feeding, free-living, dark-eyed juncos, <i>Junco hyemalis</i>. Juncos were targeted individually for simulated attack when they had either a 'head-down' view up the chute, or a completely unobstructed view; a junco with a head-down view could see up the chute only when it lowered its head to feed. Juncos with an unobstructed view almost always detected the hawk at the maximum distance of 15 m. Juncos with a head-down view usually detected the hawk at a distance of 10–15 m against a grey background, but detection distances were shorter when attacks occurred against a camouflaged background. The results demonstrate that these birds have a considerable ability to detect approaching predators even when not overtly vigilant, although their detection ability is greater when they raise their heads. Vigilance sequences, therefore, probably consist of bouts of low-quality detection (active feeding) interspersed with bouts of higher quality detection (overt vigilance) that can only be accomplished at the expense of feeding. This realization has major implications for current interpretations of the vigilance group size effect and antipredator vigilance in general.</p>
<p>Vigilance while feeding and its relation to the risk of predation</p>	<p>Lima SL, 1986, Vigilance while feeding and its relation to the risk of predation. <i>J. Theor. Biol.</i> 124:303-316</p>	<p>A simple model was developed to examine the relationship between vigilance while feeding and several determinants of the risk of predation. It was found that the relationship between vigilance and the risk of predation depends greatly upon the factor in question. An increase in attack rate leads to an increase in vigilance. A decrease in vigilance follows an increase in group size. An increase in the distance to cover (safety) may lead to either an increase or a decrease in vigilance, depending upon the situation examined. Visual obstructions in the environment may also lead to either an increase or decrease in vigilance, depending upon the nature of the environment and how such obstructions manifest themselves in the time budget. In general, vigilance should not necessarily increase with the risk of predation, yet there is an apparent consensus in the literature that this is the case.</p>

		<p>Part of this discrepancy may represent covariation among model parameters such that scanning may indeed generally increase with the risk of predation. For instance, the common observation that vigilance increases with the distance to cover may follow from an undetected positive relationship between this factor and the attack rate. Such possibilities lead to the realization that animals and investigators may very differently perceive experimental manipulations related to the risk of predation. Further developments in the study of vigilance in feeding animals will require a greater understanding of the risk of predation, in addition to the role of seemingly unrelated factors such as environmental uncertainty.</p> <p>Any animal whose form or behavior facilitates the avoidance of predators or escape when attacked by predators will have a greater probability of surviving to breed and therefore greater probability of producing offspring (i.e., fitness). Although in theory the fitness consequences of any antipredation behavior can simply be measured by the resultant probability of survival or death, determining the functional significance of antipredation behavior presents a surprising problem. In this review we draw attention to the problem that fitness consequences of antipredation behaviors cannot be determined without considering the potential for reduction of predation risk, or increased reproductive output, through other compensatory behaviors than the behaviors under study. We believe we have reached the limits of what we can ever understand about the ecological effects of antipredation behavior from empirical studies that simply correlate a single behavior with an apparent fitness consequence. Future empirical studies must involve many behaviors to consider the range of potential compensation to predation risk. This is because antipredation behaviors are a composite of many behaviors that an animal can adjust to accomplish its ends. We show that observed variation in antipredation behavior does not have to reflect fitness and we demonstrate that few studies can draw unambiguous conclusions about the fitness consequences of antipredation behavior. Lastly, we provide suggestions of how future research should best be targeted so that, even in the absence of death rates or changes in reproductive output, reasonable inferences of the fitness consequences of antipredation behaviors can be made.</p> <p>In a multi-prey system, predators kill different kinds of prey according to their availability, where "availability" is a function of prey abundance and vulnerability (e.g. anti-predator behavior). We hypothesized that prey availability changes seasonally, for instance because reproduction leads to a higher abundance of young in spring and summer or because changes in behavior such as during the mating season makes the prey periodically more vulnerable. We tested this hypothesis in a simple predator-prey system in the Jura Mountains of Switzerland and France, where a single large</p>
<p>Determining the fitness consequences of antipredator behavior</p>	<p>Lind J and Cresswell W, 2005, Determining the fitness consequences of antipredator behavior. Behavioral Ecology 16(5):945-956</p> <p>Notes: Detailed review (including many vigilance studies) arguing that predator-prey studies should focus on multiple antipredator behaviors simultaneously in order to determine fitness consequences. Alternatively, study the predator.</p>	
<p>Life cycle period and activity of prey influence their susceptibility to predators</p>	<p>Molinari-Jobin A, Molinari P, Loison A, Gaillard J-M and Breitenmoser U, 2004, Life cycle period and activity of prey influence their susceptibility to predators. Ecography 27:323-329</p> <p>Notes: Chamois preyed by Lynx when feeding, roe deer preyed mainly while ruminating—implications for</p>	

	<p>vigilance. Feeding head down, ruminating impairs audition</p>	<p>mammalian predator, the Eurasian lynx, preys upon two ungulate species, the roe deer and the chamois. In 1996 and 1997 we were able to assign a total of 190 roe deer and 54 chamois killed by lynx to a specific age and sex class (males, females or juveniles). As expected, the proportion of juveniles killed varied considerably among periods, being at the highest from 1st of June to 15th of August. No significant seasonal differences were detected regarding the frequency of predation on males versus females. In particular, the interaction between species and period, expected because of different timing of the rutting period between roe deer and chamois, was not significant. Females were killed only slightly more often during gestation. The relationship between prey abundance and vulnerability is highly complex, as the lynx prey selection needs to be analyzed not only horizontally (changes of a specific prey category with season) but also vertically (an increase in the vulnerability of one category releases predation pressure on others). Second, we predicted that certain activities, such as feeding, expose prey to predation more than others. We found more chamois predated when feeding, whereas roe deer were predated mainly when ruminating. This interspecific discrepancy reflects differences either in the anti-predator behavior of roe deer and chamois or in the relative time allocation to feeding and ruminating between the two species.</p>
<p>Predator hunting and prey vulnerability</p>	<p>Quinn JL and Cresswell W, 2004, Predator hunting behaviour and prey vulnerability. Journal of Animal Ecology 73:143-154</p> <p>Notes: Five direct measures of redshank behavior indicated that sparrowhawks attack more vulnerable prey.</p>	<p>1. Game theoretic models of how animals manage predation risk have begun to describe predator responses to prey behaviour relatively recently. This is partly because our understanding of how terrestrial predators select vertebrate prey is often limited to numerical and functional responses to measures of prey abundance. Prey vulnerability, however, may improve our understanding of predation because predators could maximize foraging success by selecting prey on this basis.</p> <p>2. We tested the hypothesis that sparrowhawks (<i>Accipiter nisus</i> L.), a typical generalist predator, hunt redshanks (<i>Tringa tetanus</i> L.), a favoured prey species on coastal shores, primarily on the basis of their vulnerability rather than their abundance.</p> <p>3. Five direct measures or indicators of redshank behaviour predicted sparrowhawk attack success in a multipredictor statistical model and therefore serve as measures of redshank vulnerability.</p> <p>4. These and other vulnerability measures influenced whether sparrowhawks decided to hunt redshanks on saltmarsh habitat. A model that included most of these measures predicted correctly whether sparrowhawks hunted redshanks (attack decision) 90% of the time and accounted for up to 75% of variation. Prey abundance accounted for no additional variation.</p>

<p>Disturbances by dog barking increase vigilance in coots <i>Fulica atra</i></p>	<p>Randler C, 2006, Disturbances by dog barking increase vigilance in coots <i>Fulica atra</i>. Eur J Wildl Res 52:265-270</p> <p>Notes: Playback 75 dB(A) at 1 m</p>	<p>5. Thus the hunting behaviour of some predators can only be predicted well by several highly dynamic and interacting factors related to prey vulnerability. These results mean that, theoretically at least, the management of prey populations may sometimes be achieved best by manipulating prey vulnerability, rather than by culling their predators. Animals frequently interrupt their activity to look up and to scan their surrounding environment for potential predators (Vigilance). As vigilance and other activities are often mutually exclusive, such behaviours are at the expense of feeding, sleeping or preening. Authors of many wildlife disturbance studies found that people with free-running dogs provoked the most pronounced disturbances (e.g. greater flushing distances and more birds affected). However, dogs on leash may also negatively affect wild animals, and barking dogs may lead to an increase in vigilance. In this study, I tested this hypothesis in coots (<i>Fulica atra</i>) using three different playback procedures: (1) dog barks, (2) conspecific coot alarm calls and (3) chaffinch song. The trials were conducted in spring and autumn 2005 at three study sites in southwestern Germany. During the dog playbacks, vigilance increased significantly from 17 to 28%. This increase in vigilance is comparable to the presence of a natural predator. As expected, vigilance also increased significantly during conspecific coot alarm calls but not during playbacks of the chaffinch song control. Two main findings result from the study: (1) coots respond to acoustic traits of dogs and may be able to acoustically recognise this predator and (2) this increase in vigilance might have implications for conservation, especially when considering buffer zones around sensitive areas.</p>
<p>The effect of limited visibility on vigilance behaviour and speed of predator detection: implications for the conservation of granivorous passerines</p>	<p>Whittingham MJ, Butler SJ, Quinn JL and Cresswell W, 2004, The effect of limited visibility on vigilance behaviour and speed of predator detection: implications for the conservation of granivorous passerines. Oikos 106:377-385</p>	<p>Foraging animals frequently change their pattern of vigilance when they move from a patch with a clear view to one with a relatively obstructed view. This has been widely interpreted as compensation for a reduced ability to detect approaching predators in obstructed habitats. We test the extent to which changes in vigilance may compensate for the effect of reduced visibility on an animal's ability to detect predators. We measured the vigilance, foraging and speed of predator-response behaviours of lone chaffinches <i>Fringilla coelebs</i> that fed on seeds (800 per m²) scattered on artificial stubble habitats (with either a clear view of surroundings or an obstructed view). On both treatments, individuals with more rapid head-up rates responded more quickly to a flying model sparrowhawk <i>Accipiter nisus</i> (P = 0.04); as did individuals with shorter food-search times (P = 0.02). However, neither head-up rate nor food-search period varied with obstruction. Based on research previously published using this system, we suggest that this is because individuals are constrained in their ability to increase headup rate because doing so is largely determined by their individually determined foraging efficiency. Instead chaffinches</p>

		<p>increased the duration of their head-up periods by 13% in the visually obstructed treatment (long stubble) and peck rates were 13% lower. Despite this presumed attempt to compensate for reduced visibility, duration of headup period had no effect on response time of the fast-moving predator in our experiment and birds were 24% slower to respond in the long stubble. Rather than being maladaptive, increasing head-up duration may have been related to enhanced detection of other predator types, for example stalkers. Our results have implications for the conservation of wild granivorous birds. They support the view that agroeconomic decisions that affect micro-habitat structure over a large scale could affect predation risk, habitat choice and the conservation status of granivorous birds.</p>
Disturbance		
<p>Human-caused disturbance stimuli as a form of predation risk</p>	<p>Frid A. and Dill L, 2002, Human-caused disturbance stimuli as a form of predation risk. Conservation Ecology 6(1):11(online)</p>	<p>A growing number of studies quantify the impact of nonlethal human disturbance on the behavior and reproductive success of animals. Although many are well designed and analytically sophisticated, most lack a theoretical framework for making predictions and for understanding why particular responses occur. Behavioral ecologists have recently begun to fill this theoretical vacuum by applying economic models of antipredator behavior to disturbance studies. In this emerging paradigm, predation and nonlethal disturbance stimuli create similar trade-offs between avoiding perceived risk and other fitness-enhancing activities, such as feeding, parental care, or mating. A vast literature supports the hypothesis that antipredator behavior has a cost to other activities, and that this trade-off is optimized when investment in antipredator behavior tracks short-term changes in predation risk. Prey have evolved antipredator responses to generalized threatening stimuli, such as loud noises and rapidly approaching objects. Thus, when encountering disturbance stimuli ranging from the dramatic, lowflying helicopter to the quiet wildlife photographer, animal responses are likely to follow the same economic principles used by prey encountering predators. Some authors have argued that, similar to predation risk, disturbance stimuli can indirectly affect fitness and population dynamics via the energetic and lost opportunity costs of risk avoidance. We elaborate on this argument by discussing why, from an evolutionary perspective, disturbance stimuli should be analogous to predation risk. We then consider disturbance effects on the behavior of individuals—vigilance, fleeing, habitat selection, mating displays, and parental investment—as well as indirect effects on populations and communities. A wider application of predation risk theory to disturbance studies should increase the generality of predictions and make mitigation more effective without over-regulating human activities.</p>

<p>Disturbance by traffic of breeding birds: evaluation of the effect and considerations in planning and managing road corridors</p>	<p>Reijnen R, Foppen R and Veenbaas G, 1997, Disturbance by traffic of breeding birds: evaluation of the effect and considerations in planning and managing road corridors. Biodiversity and Conservation 6:567-581</p>	<p>In wildlife considerations in planning and managing road corridors little attention has been given to the effects of disturbance by traffic on populations of breeding birds. Recent studies, however, show evidence of strongly reduced densities of many species of woodland and open habitat in broad zones adjacent to busy roads. The density reduction is related to a reduced habitat quality, and traffic noise is probably the most critical factor. Because density can underestimate the habitat quality, the effects on breeding populations are probably larger than have been established. In consequence, species that did not show an effect on the density might still be affected by traffic noise. On the basis of this recent knowledge, methods have been developed that can be used in spatial planning procedures related to main roads, and in road management practice, and some practical points are discussed. An example of application shows that the effects are probably very important in The Netherlands with a dense network of extremely crowded main roads. For 'meadow birds', which are of international importance, the decrease in population in the West of The Netherlands may amount to 16%. Because breeding birds suffer from many other environmental influences there is also a great risk of an important cumulation of effects.</p>
---	--	---

Ecological Importance of Sound

<p>Does information of predators influence general wariness?</p>	<p>Adams JL, Camelio KW, Orique MJ and Blumstein DT, 2006, Does information of predators influence general wariness. Behavioral Ecology and Sociobiology 60:742-7474</p> <p>Notes: Rosellas distinguish among the calls of different avian predators played back at ~26m at 98 dB (at 1 m).</p>	<p>Antipredator behavior includes several qualitatively distinct activities, but few studies have determined the degree to which these activities are independent. If behaviors are not independent, then the nature of the relationship would illustrate potential performance constraints. We studied crimson rosellas (<i>Platycercus elegans</i>) and first focused on acoustic predator discrimination. We measured time allocation before and after playback of one of three experimental treatments (peregrine falcons—<i>Falco peregrinus</i>, wedge-tailed eagles—<i>Aquila audax</i>, and crimson rosellas) to determine whether or not rosellas discriminated predators from non-predators, and specifically whether or not they discriminated large from small predators. We then focused on the decision to flee. We experimentally approached subjects and measured the distance at which they oriented to us (alert distance) and the distance at which they fled (flight initiation distance; FID). We found that rosellas could distinguish among predators; however, there was no effect on general wariness as measured by FID. These two processes of antipredator behavior may, thus, be independent.</p>
<p>Selective phonotaxis by male wood frogs (<i>Rana sylvatica</i>) to the sound of a chorus</p>	<p>Bee MA, 2007, Selective phonotaxis by male wood frogs (<i>Rana sylvatica</i>) to the sound of a chorus. Behavioral Ecology and Sociobiology 61:955-966.</p>	<p>Frogs and loads commonly form large choruses around suitable breeding habitat during the mating season. Although often regarded as a constraint on the acoustic behavior of signalers and receivers, the sounds of a chorus could also serve as an acoustic beacon that allows some frogs to locate the breeding aggregation. Attraction to chorus</p>

		<p>sounds might be particularly important for explosively breeding frogs. In these species, which often mate just one or a few days during the year, the timing and location of breeding aggregations can be unpredictable because their formation often depends on local climatic factors, such as rainfall or a change in temperature. I used laboratory playback experiments to test the hypothesis that male wood frogs (<i>Rana sylvatica</i>), an explosively breeding frog, exhibit positive phonotaxis toward the sound of a conspecific chorus. Males were released at the center of a rectangular arena with a speaker positioned in each corner facing toward the release point. In a single-stimulus experiment, more males approached a speaker broadcasting a conspecific chorus than the three silent speakers in the arena. In a two-stimulus experiment, more males approached a speaker broadcasting a conspecific chorus compared to the two silent speakers or a fourth speaker simultaneously broadcasting the spectrally overlapping sound of a heterospecific (<i>R. septentrionalis</i>) chorus. These results are consistent with the hypothesis that male wood frogs could use the sound of a chorus as a beacon to locate a short-lived breeding aggregation.</p>
<p>Sexual differences in the behavioral response of tungara frogs, <i>Physalaemus pustulosus</i>, to cues associated with increased predation risk</p>	<p>Bernal XE, Rand AS and Ryan MJ, 2007, Sexual differences in the behavioral response of tungara frogs, <i>Physalaemus pustulosus</i>, to cues associated with increased predation risk. Ethology 113:755-763.</p> <p>Notes: Predation stimuli, low frequency: bullfrog calls and sounds of frog-eating bats wingbeats</p>	<p>Engaging in mating behaviors usually increases exposure to predators for both males and females. Anti-predator strategies during reproduction may have important fitness consequences for prey. Previous studies have shown that individuals of several species adjust their reproductive behavior according to their assessment of predation risk, but few studies have explored potential sexual differences in these strategies. In this study, we investigate whether the acoustic cues associated with predatory attacks or those associated with predators themselves affect the mating behavior of female and male tungara frogs, <i>Physalaemus pustulosus</i>. We compared the responses of females approaching a male and those of calling males when exposed to mating calls associated with sounds representing increased hazard. When presented with mating calls that differed only in whether or not they were followed by a predation-related sound, females preferentially approached the call without predation-related sounds. In contrast to females, calling males showed greater vocal response to calls associated with increased risk than to a call by itself. We found significant differences in the responses of females and males to several sounds associated with increased hazard. Females behaved more cautiously than males, suggesting that the sexes balance the risk of predation and the cost of cautious mating strategies differently.</p>
<p>Information and its use by animals in evolutionary ecology</p>	<p>Dall SRX, Giraldeau L-A, Olsson O, McNamara JM and Stephens DW, 2005, Information and its use by animals in evolutionary ecology. Trends in Ecology and Evolution 20(4):</p>	<p>Information is a crucial currency for animals from both a behavioural and evolutionary perspective. Adaptive behaviour relies upon accurate estimation of relevant ecological parameters; the better informed an individual, the better it can develop and adjust its behaviour to meet the demands of a variable world. Here, we focus on the burgeoning</p>

<p>Rapid acquisition of an alarm response by a neotropical primate to a newly introduced avian predator</p>	<p>Gil-da-Costa R, Palleroni A, Hauser MD, Touchton J and Kelley JP, 2003, Rapid acquisition of an alarm response by a neotropical primate to a newly introduced avian predator. Proc. R. Soc. Lond. B 270:605-610</p>	<p>interest in the impact of ecological uncertainty on adaptation, and the means by which it can be reduced by gathering information, from both 'passive' and 'responsive' sources. Our overview demonstrates the value of adopting an explicitly informational approach, and highlights the components that one needs to develop useful approaches to studying information use by animals. We propose a quantitative framework, based on statistical decision theory, for analysing animal information use in evolutionary ecology. Our purpose is to promote an integrative approach to studying information use by animals, which is itself integral to adaptive animal behaviour and organismal biology.</p> <p>Predation is an important selective pressure in natural ecosystems. Among non-human primates, relatively little is known about how predators hunt primate prey and how primates acquire adaptive responses to counteract predation. In this study we took advantage of the recent reintroduction of radio-tagged harpy eagles (<i>Harpia harpyja</i>) to Barro Colorado Island (BCI), Panama to explore how mannted howler monkeys (<i>Alouatta palliata</i>), one of their primary prey, acquire anti-predator defences. Based on the observation that harpies follow their prey prior to attack, and often call during this pursuit period, we broadcast harpy eagle calls to howlers on BCI as well as to a nearby control population with no harpy predation. Although harpies have been extinct from this area for 50–100 years, results indicate that BCI howlers rapidly acquired an adaptive anti-predator response to harpy calls, while showing no response to other avian vocalizations; howlers maintained this response several months after the removal of the eagles. These results not only show that non-human primates can rapidly acquire an alarm response to a newly introduced predator, but that they can detect and identify predators on the basis of acoustic cues alone. These findings have significant implications both for the role of learning mechanisms in the evolution of prey defence and for conservation strategies, suggesting that the use of 'probing' approaches, such as auditory playbacks, may highly enhance an <i>a priori</i> assessment of the impact of species reintroduction.</p>
<p>Sensory ecology of prey rustling sounds: acoustical features and their classification by wild Grey Mouse Lemurs</p>	<p>Goerlitz HR and Siemers BM, 2007, Sensory ecology of prey rustling sounds: acoustical features and their classification by wild Grey Mouse Lemurs. Functional Ecology 21:143-153</p>	<p>1. Predatory mammals and birds from several phylogenetic lineages use prey rustling sounds to detect and locate prey. However, it is not known whether these rustling sounds convey information about the prey, such as its size or profitability, and whether predators use them to classify prey accordingly.</p> <p>2. We recorded rustling sounds of insects in Madagascar walking on natural substrate and show a clear correlation between insect mass and several acoustic parameters.</p> <p>3. In subsequent behavioural experiments in the field, we determined whether nocturnal animals, when foraging for insects, evaluate these parameters to classify their prey. We used field-experienced Grey Mouse Lemurs <i>Microcebus murinus</i> in short-term captivity.</p>

		<p>Mouse Lemurs are generally regarded as a good model for the most ancestral primate condition. They use multimodal sensorial information to find food (mainly fruit, gum, insect secretions and arthropods) in nightly forest. Acoustic cues play a role in detection of insect prey.</p> <p>4. When presented with two simultaneous playbacks of rustling sounds, lemurs spontaneously chose the one higher above their hearing threshold, i.e. they used the rustling sound's amplitude for classification. We were not able, despite attempts in a reinforced paradigm, to persuade lemurs to use cues other than amplitude, e.g. frequency cues, for prey discrimination.</p> <p>5. Our data suggests that Mouse Lemurs, when foraging for insects, use the mass–amplitude correlation of prey-generated rustling sounds to evaluate the average mass of insects and to guide their foraging decisions.</p>
<p>Observational and experimental evidence for the function of tail flicking in Eurasian moorhen <i>Gallinula chloropus</i></p>	<p>Randler C, 2007, Observational and experimental evidence for the function of tail flicking in Eurasian moorhen <i>Gallinula chloropus</i>. <i>Ethology</i> 113:629-639</p>	<p>Tail movements such as wagging, flicking or pumping are reported from many bird species but their adaptive functions remain poorly understood. To investigate whether tail flicking functions as an alarm signal either to predators or neighbouring birds, or as a signal of submission to conspecifics, I observed this behaviour in moorhen in a natural context, and conducted playback experiments using vocalizations of predators, conspecifics and heterospecifics. I found positive relationships between flicking and vigilance and nearest neighbour distance, and negative relationships between flicking and moorhen flock size and total flock size. Moorhen at the edge of a flock flicked at a higher rate. Single moorhen flicked more often compared with individuals in groups, both in single and mixed-species flocks, and there was a tendency that single moorhen flicked more often than single moorhen within a mixed-species flock. Moorhen responded differently to conspecific and predator calls. While in both cases vigilance increased, tail flick rate was higher during predator playbacks and lower during conspecific playbacks. Furthermore, moorhen remained rather motionless when conspecific calls were played back, but not during predator calls, and, moorhen resumed to a baseline level of tail flicking more quickly after the playback of conspecific calls. Taken together, the results suggest that flicking may be considered as a honest signal of vigilance directed towards ambushing predators.</p>
<p>Effect of acoustic clutter on prey detection by bats</p>	<p>Arelltaz, R., G. Jones, and P. A. Racey, 2001, Effect of acoustic clutter on prey detection by bats. <i>Nature</i> 414: 742-745</p>	<p>Bats that capture animal prey from substrates often emit characteristic echolocation calls that are short-duration, frequency-modulated (FM) and broadband. Such calls seem to be suited to locating prey in uncluttered habitats, including flying prey, but may be less effective for finding prey among cluttered backgrounds because echoes reflecting from the substrate mask the acoustic signature of prey. Perhaps these call designs serve primarily for spatial orientation. Furthermore, it has been unclear whether the acoustic image conveyed by FM echoes enables fine texture discrimination, or whether gleaming bats that</p>

<p>Gleaning bats as underestimated predators of herbivorous insects: diet of Micronycteris microtis (Phyllostomidae) in Panama</p>	<p>Kalka, M., and E. K. V. Kalko, 2006, Gleaning bats as underestimated predators of herbivorous insects: diet of Micronycteris microtis (Phyllostomidae) in Panama</p>	<p>forage in echo-cluttering environments must locate prey by using other cues, such as prey-generated sounds. Here we show that two species of insectivorous gleaning bats perform badly when compelled to detect silent and immobile prey in clutter, but are very efficient at capturing noisy prey items among highly cluttered backgrounds, and both dead or live prey in uncluttered habitats. These findings suggest that the short, broadband FM echolocation calls associated with gleaning bats are not adapted to detecting prey in clutter.</p> <p>Predators of herbivorous insects play important roles in tropical ecosystems as herbivory may affect structure and diversity of plant populations. Although insectivorous bats are particularly abundant and diverse in the tropics, their impact on herbivorous insects is little understood. To assess prey consumption, we observed the gleaning bat <i>Micronycteris microtis</i> (Phyllostomidae) continuously for 3 months including 16 full nights at a nightly feeding roost on Barro Colorado Island in Panama using infrared videolapping combined with collection of prey remains. Individual bats consumed about 61–84% of their body mass in arthropods per night. Diet analysis revealed a high percentage of herbivorous insects, constituting more than half (51%) of all prey and over 70% of prey biomass. Dominant prey were caterpillars (33% of prey biomass), and other herbivores including crickets, katydids, scarab beetles and phasmids. Furthermore, a novel feeding behaviour was observed as <i>M. microtis</i> selectively discarded parts of intestines of phytophagous insects before consumption, probably to avoid intake of plant material either for ballast reduction and/or for protection from secondary plant compounds. Combined with estimated feeding rates of insects in sympatric bat species, our data suggest that gleaning bats are important predators of herbivorous insects and might be underestimated reducers of herbivory in the tropics.</p>
<p>Cost of Habituation</p>		
<p>Interpreting short-term behavioural responses to disturbance within a longitudinal perspective</p>	<p>Bejder L, Samuels A, Whitehead H, Gales N, 2006, Interpreting short-term behavioural responses to disturbance within a longitudinal perspective. Animal Behaviour 72:1149-1158</p> <p>Notes: Dolphins exposed to boat traffic appeared to behavioural habituate in acute study but long-term population data indicates population significantly declined. Implication: sensitive individuals departed before behavioral study.</p>	<p>We documented immediate, behavioural responses of Indo-Pacific bottlenose dolphins (<i>Tursiops sp.</i>) to experimental vessel approaches in regions of high and low vessel traffic in Shark Bay, Western Australia. Experimental vessel approaches elicited significant changes in the behaviour of targeted dolphins when compared with their behaviour before and after approaches. During approaches, focal dolphin groups became more compact, had higher rates of change in membership and had more erratic speeds and directions of travel. Dolphins in the region of low vessel traffic (control site) had stronger and longer-lasting responses than did dolphins in the region of high vessel traffic (impact site). In the absence of additional information, the moderated behavioural responses of impact-site dolphins probably would be interpreted to mean that long-term vessel activity within a region of tourism had no detrimental effect on resident dolphins.</p>

<p>Decline in relative abundance of bottlenose dolphins exposed to long-term disturbance</p>	<p>See population study below.</p> <p>Bejder L, Samuels A, Whitehead H, Gales N, Mann J, Conner R, Heithaus M, Watson-Capps, Flaherty C and Krutzen M, 2006, Decline in relative abundance of bottlenose dolphins exposed to long-term disturbance. Conservation Biology 20(6): 1791-1798</p>	<p>However, another study showed that dolphin-watching tourism in Shark Bay has contributed to a long-term decline in dolphin abundance within the impact site (Bejder et al., in press, Conservation Biology). Those findings suggest that we documented moderated responses not because impact-site dolphins had become habituated to vessels but because those individuals that were sensitive to vessel disturbance left the region before our study began. This reinterpretation of our findings led us to question the traditional premise that short-term behavioural responses are sufficient indicators of impacts of anthropogenic disturbance on wildlife.</p> <p>Studies evaluating effects of human activity on wildlife typically emphasize short-term behavioral responses from which it is difficult to infer biological significance or formulate plans to mitigate harmful impacts. Based on decades of detailed behavioral records, we evaluated long-term impacts of vessel activity on bottlenose dolphins (<i>Tursiops sp.</i>) in Shark Bay, Australia. We compared dolphin abundance within adjacent 36-km² tourism and control sites, over three consecutive 4.5-year periods wherein research activity was relatively constant but tourism levels increased from zero, to one, to two dolphin-watching operators. A nonlinear logistic model demonstrated that there was no difference in dolphin abundance between periods with no tourism and periods in which one operator offered tours. As the number of tour operators increased to two, there was a significant average decline in dolphin abundance (14.9%; 95% CI=-20.8 to -8.23), approximating a decline of one per seven individuals. Concurrently, within the control site, the average increase in dolphin abundance was not significant (8.5%; 95% CI=-4.0 to +16.7). Given the substantially greater presence and proximity of tour vessels to dolphins relative to research vessels, tour-vessel activity contributed more to declining dolphin numbers within the tourism site than research vessels. Although this trend may not jeopardize the large, genetically diverse dolphin population of Shark Bay, the decline is unlikely to be sustainable for local dolphin tourism. A similar decline would be devastating for small, closed, resident, or endangered cetacean populations. The substantial effect of tour vessels on dolphin abundance in a region of low-level tourism calls into question the presumption that dolphin-watching tourism is benign.</p>
<p>Behavioural and ecological consequences of limited attention</p>	<p>Dukas, R, 2002, Behavioural and ecological consequences of limited attention. Phil. Tran. R. Soc. Lond. B 357:1539-1547</p> <p>Notes: Flip side of habituation. Cost of attending to anthropogenic sound is lost processing of more behavioral-</p>	<p>Ecological research in the past few decades has shown that most animals acquire and respond adaptively to information that affects survival and reproduction. At the same time, neurobiological studies have established that the rate of information processing by the brain is much lower than the rate at which information is encountered in the environment, and that attentional mechanisms enable the brain to focus only on the most essential information at any given time. Recent integration of the ecological and neurobiological approaches helps us</p>

	relevant cues.	to understand key behaviours with broad ecological and evolutionary implications. Specifically, current data indicate that limited attention affects diet choice and constrains animals' ability simultaneously to feed and attend to predators. Recent experiments also suggest that limited attention influences social interactions, courtship and mating behaviour.
<p>Why behavioural responses may not reflect the population consequences of human disturbance</p>	<p>Gill JA, Norris K and Sutherland WJ, 2001, Why behavioural responses may not reflect the population consequences of human disturbance. Biological Conservation 97:265-268</p> <p>Notes: Verbal argument that quality of resource and availability of alternative habitats profoundly influences disturbance and 'habituation' behavior</p>	<p>The effect of human disturbance on animals is frequently measured in terms of changes in behaviour in response to human presence. The magnitude of these changes in behaviour is then often used as a measure of the relative susceptibility of species to disturbance; for example species which show strong avoidance of human presence are often considered to be in greater need of protection from disturbance than those which do not. In this paper we discuss whether such changes in behaviour are likely to be good measures of the relative susceptibility of species, and suggest that their use may result in confusion when determining conservation priorities.</p>