

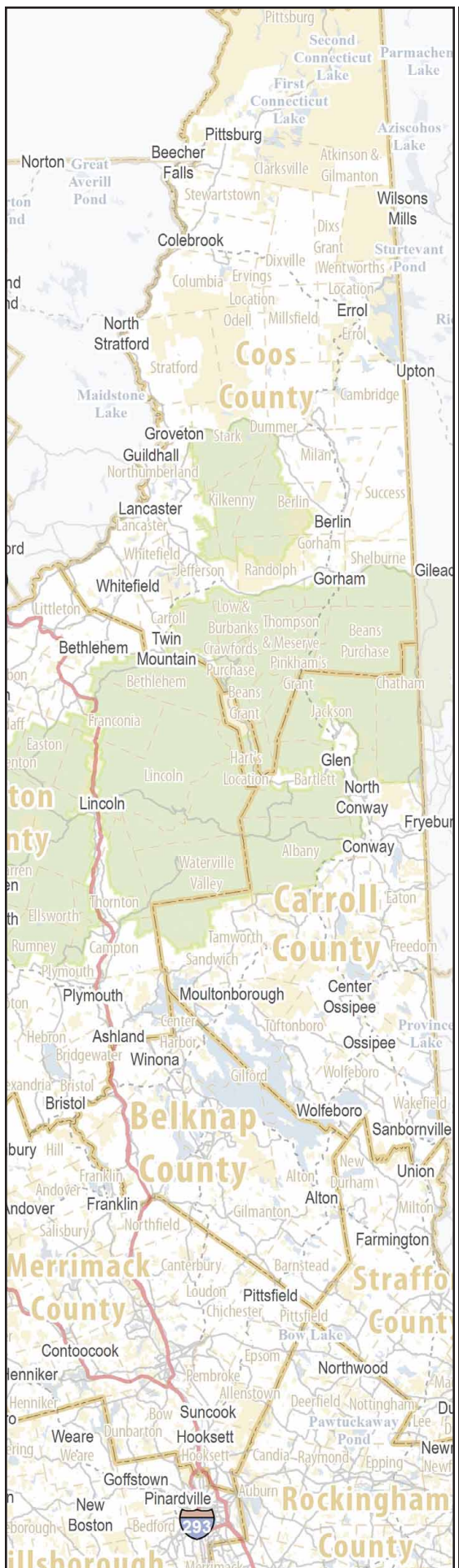


DOE/EIS-0463

***FINAL***  
**NORTHERN PASS  
TRANSMISSION LINE PROJECT  
ENVIRONMENTAL IMPACT  
STATEMENT  
VOLUME 2: APPENDICES A-K**

**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 2: Appendices A-K**

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**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](mailto: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](mailto: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  $\pm$ 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 K**  
**SECTION 106 DOCUMENTATION**

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## **APPENDIX K. SECTION 106 DOCUMENTATION**

Documentation related to Section 106 consultation presented in this appendix includes:

- Draft Programmatic Agreement
- NH SHPO Response to Initiation
- NH SHPO Engagement on Amended Application
- ACHP Invitation to Consult
- ACHP Decision to Participate
- VT SHPO Initiation
- VT SHPO Response to Initiation

**Additional Section 106 Documentation**

NH SHPO Response to Initiation

NH SHPO Engagement on Amended Application

ACHP Invitation to Consult

ACHP Decision to Participate

VT SHPO Initiation

VT SHPO Response to Initiation



**Feighner, Edna**

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**From:** Feighner, Edna  
**Sent:** Tuesday, February 15, 2011 10:25 AM  
**To:** 'Brian.Mills@hq.doe.gov'  
**Cc:** St.Louis, Christina; Peterson, Nadine; Wilson, Linda  
**Subject:** Notice of Intent-Northern Pass Transmission Line Project

Mr. Mills,

The Division of Historical Resources (DHR) has received the publication of Notice of Intent and Invitation for Comments for the Northern Pass Transmission Line Project.

Thank you for including the DHR in your outreach.

At this time we have no comment on the proposal; we are aware that archaeological surveys have been initiated, as well as surveys addressing the above ground resources.

The DHR looks forward to the Section 106 process and participating in consultation, I have filled out and returned the card provided in your package of information.

Edna Feighner

Edna Feighner  
Review and Compliance Coordinator/Historical Archaeologist  
NH Division of Historical Resources  
19 Pillsbury Street, Second Floor  
Concord, NH 03301  
603-271-2813

***About the New Hampshire Division of Historical Resources:***

*The New Hampshire Division of Historical Resources was established in 1974 as the "State Historic Preservation Office." The historical, archaeological, architectural and cultural resources of New Hampshire are among its most important environmental assets. Historic preservation promotes the use, understanding and conservation of such resources for the education, inspiration, pleasure and enrichment of New Hampshire's citizens. For more information, visit us online at [www.nh.gov/nhdhr](http://www.nh.gov/nhdhr) or by calling (603)271-3483.*



**Department of Energy  
Washington, DC 20585**

March 21, 2013

Elizabeth H. Muzzey  
Director, New Hampshire Division of Historical Resources  
State Historic Preservation Officer  
19 Pillsbury Street, 2<sup>nd</sup> Floor  
Concord, NH 03301-3570

Subject: Northern Pass Transmission, LLC Presidential Permit Application

Dear Ms. Muzzey:

As you are aware, the U.S. Department of Energy (DOE) is considering whether or not to grant a Presidential permit to Northern Pass Transmission, LLC (Northern Pass) for its proposed transmission facility crossing at the U.S.-Canada border in northern New Hampshire. Because a Presidential permit would be issued by DOE, the Department must meet the requirements for federal actions under Section 106 of the National Historic Preservation Act at 36 CFR Part 800. I am sending this letter to you to formally determine and document DOE's Area of Potential Effects (APE) for the southern 140 miles of the proposed Northern Pass transmission line route.

Following consultation with you and your staff on a February 4, 2013 phone call regarding only the southern 140 miles of the currently proposed Northern Pass route, DOE has determined the direct APE for identifying terrestrial historic properties and below grade archeological resources as approximately 200 feet wide, or the width of the Public Service Company of New Hampshire right-of-way (PSNH ROW). In addition, DOE proposes an indirect APE for assessing potential for adverse visual effects on terrestrial historic properties to be approximately one mile on either side of the center line (will vary with topography) of the PSNH ROW.

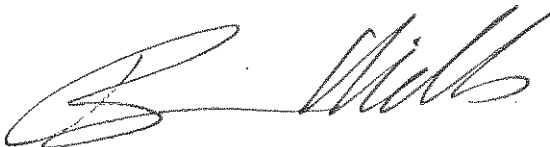
Northern Pass is expected to amend its Presidential permit application with an alternate route for the northern 40 miles of the proposed transmission line at a later date. DOE will make its direct and indirect APE determination(s) for the northern portion of the amended route after receiving the amendment and following further consultation with you and NH DHR staff.

Presently, DOE seeks your concurrence on its scope of efforts to identify historic properties and archeological resources and its proposed direct and indirect APE's for the southern 140 miles of the proposed Northern Pass transmission line. Please provide your

concurrence in writing so that it may be added to the administrative record to evidence DOE's compliance with its Section 106 consultation responsibilities.

If you have any questions or concerns, you may contact me at [Brian.Mills@hq.doe.gov](mailto:Brian.Mills@hq.doe.gov) or (202)586-8267. Please accept my thanks for your cooperation and assistance.

Sincerely,

A handwritten signature in black ink, appearing to read "Brian Mills". The signature is fluid and cursive, with a large initial "B" and "M".

Brian Mills  
National Electricity Delivery Division  
Office of Electricity Delivery and  
Energy Reliability  
U.S. Department of Energy  
1000 Independence Avenue, SW  
Washington, DC 20585



## Department of Energy

Washington, DC 20585

VIA ELECTRONIC MAIL

January 29, 2014

John Eddins  
Program Analyst  
Office of Federal Agency Programs  
Advisory Council on Historic Preservation  
1100 Pennsylvania Avenue, NW, Suite 803  
Old Post Office Building  
Washington, DC 20004

SUBJECT: Invitation to Consult on the Proposed Northern Pass Transmission Line Project

Dear Mr. Eddins,

The purpose of this letter is to ensure that the Advisory Council on Historic Preservation, Office of Federal Agency Programs is aware that Northern Pass Transmission, LLC (Northern Pass) applied to the U.S. Department of Energy (DOE) for a Presidential permit to construct, operate, maintain, and connect an electric transmission line across the U.S.-Canada border. Pursuant to Section 106 of the National Historic Preservation Act of 1966 (NHPA) and 36 CFR Part 800, "Protection of Historic Properties," the DOE is initiating the Section 106 consultation process on the proposed Northern Pass project to determine any potential adverse effects on historic properties. The purpose of this letter is to inquire whether you wish to be considered, or participate, in the DOE's Section 106 process for this project.

The DOE is meeting its obligations under the NHPA concurrently with the preparation of an environmental impact statement (EIS) pursuant to the National Environmental Policy Act of 1969 (NEPA). Northern Pass is also seeking authorizations from the U.S. Forest Service – White Mountain National Forest (USFS) and the U.S. Army Corps of Engineers – New England District (USACE); both the USFS and the USACE are cooperating agencies for NEPA review. For more information about the DOE's NEPA review and preparation of the EIS, please visit the DOE Northern Pass EIS website: [www.northernpasseis.us](http://www.northernpasseis.us).

The proposed project comprises a single circuit 300 kilovolt (kV) HVDC transmission line running approximately 153 miles from the U.S. border crossing between Quebec, Canada and Pittsburg, NH, to a new HVDC-to-AC transformer facility to be constructed in Franklin, NH. From Franklin, NH to the project terminus at Public Service of New Hampshire's existing Deerfield Substation located in Deerfield, NH, the proposed project would consist of 34 miles of 345 kV AC electric transmission line. The total length of the proposed transmission line would be approximately 187 miles. For more information about the proposed project, including project maps, please visit the Northern Pass project website: [www.northernpass.us](http://www.northernpass.us).

*The Amended Notice of Intent To Modify the Scope of the Environmental Impact Statement and Conduct Additional Public Scoping Meetings, and Notice of Floodplains and Wetlands Involvement for the Northern Pass Transmission Line Project (78 FR 54876) is*

available at [http://www.northernpasseis.us/media/documents/anoi\\_9-06-13.pdf](http://www.northernpasseis.us/media/documents/anoi_9-06-13.pdf). In addition, please note that Northern Pass project-related maps, documents, and other information are available on the DOE's Northern Pass EIS Web site ([www.northernpasseis.us](http://www.northernpasseis.us)) and on the Northern Pass Project website ([www.northernpass.us](http://www.northernpass.us)). Information regarding the Northern Pass Presidential permit application is also available on the DOE Web site at <http://energy.gov/oe/services/electricity-policy-coordination-and-implementation/international-electricity-regulatio-2> (see Docket PP-371).

If you would like to participate in the Section 106 consultation process, please confirm within 30 calendar days of the date of this letter by confirming or providing a primary point of contact for ACHP.

If you have questions regarding the DOE's on-going review of the proposed Northern Pass Transmission Project, or DOE's Section 106 efforts, please contact me via phone, (202) 586-8267, or email ([brian.mills@hq.doe.gov](mailto:brian.mills@hq.doe.gov)).

Sincerely,

A handwritten signature in blue ink that reads "Brian Mills". The signature is written in a cursive style with a large, stylized initial "B".

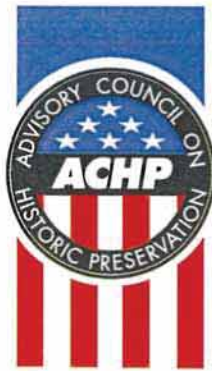
Brian Mills  
Senior Planning Advisor  
Northern Pass EIS NEPA Document Manager  
Office of Electricity Delivery & Energy Reliability

cc: Caitlin Callaghan, DOE

Milford Wayne Donaldson, FAIA  
Chairman

Clement A. Price, Ph.D.  
Vice Chairman

John M. Fowler  
Executive Director



*Preserving America's Heritage*

February 20, 2015

Dr. Ernest Moniz  
Secretary  
Department of Energy  
1000 Independence Avenue, SW  
Washington, DC 20585

***REF: Proposed Northern Pass Transmission Project, Presidential Permit, New Hampshire***

Dear Secretary Moniz:

In response to a request from the New Hampshire State Historic Preservation Office, the Advisory Council on Historic Preservation (ACHP) will participate in consultation to develop a Programmatic Agreement for the proposed permit for the Northern Pass Transmission Line project, New Hampshire. Our decision to participate in this consultation is based on the *Criteria for Council Involvement in Reviewing Individual Section 106 Cases*, contained within our regulations. The criteria are met for this proposed undertaking because it has the potential for presenting procedural problems.

Section 800.6(a)(1)(iii) of our regulations requires that we notify you, as the head of the agency, of our decision to participate in consultation. By copy of this letter, we are also notifying Mr. Brian Mills, Senior Planning Advisor, Northern Pass EIS NEPA Document Manager, Office of Electricity Delivery and Energy Reliability, of this decision.

Our participation in this consultation will be handled by Mr. Brian Lusher who can be reached at (202) 517-0221 or via e-mail at [blusher@achp.gov](mailto:blusher@achp.gov). We look forward to working with your agency and other consulting parties to consider alternatives to this undertaking that could avoid, minimize, or mitigate potential adverse effects on historic properties and to reach a Programmatic Agreement.

Sincerely,

*for* John M. Fowler  
Executive Director



## Department of Energy

Washington, DC 20585

VIA ELECTRONIC MAIL

June 22, 2016

Laura Trieschmann  
State Historic Preservation Officer  
Vermont Division of Historic Preservation  
1 National Life Drive  
Davis Building, 6<sup>th</sup> Floor  
Montpelier, VT 05620-0501

SUBJECT: Invitation to Consult on the Proposed Northern Pass Transmission Line Project

Dear Ms. Trieschmann,

The purpose of this letter is to ensure that the Vermont Division of Historic Preservation is aware that Northern Pass Transmission, LLC (Northern Pass) applied to the U.S. Department of Energy (DOE) for a Presidential permit to construct, operate, maintain, and connect an electric transmission line across the U.S.-Canada border. Pursuant to Section 106 of the National Historic Preservation Act of 1966 (NHPA) and 36 CFR Part 800, "Protection of Historic Properties," the DOE is undergoing the Section 106 consultation process on the proposed Northern Pass project and DOE's undertaking (the issuance of a Presidential permit) to determine any potential adverse effects on historic properties. The DOE invites you to consult with us on the proposed project, as provided for by Section 106 and its implementing regulations.

The DOE is meeting its obligations under the NHPA concurrently with the preparation of an environmental impact statement (EIS) pursuant to the National Environmental Policy Act of 1969 (NEPA). Northern Pass is also seeking authorizations from the U.S. Forest Service – White Mountain National Forest (USFS) and the U.S. Army Corps of Engineers – New England District (USACE); both the USFS and the USACE are cooperating agencies for NEPA review. For more information about the DOE's NEPA review and preparation of the EIS, please visit the DOE Northern Pass EIS website: [www.northernpasseis.us](http://www.northernpasseis.us).

The proposed project (75 FR 50405, 80 FR 58725) would be capable of transmitting up to 1000 megawatts ("MW") of power across a single circuit 300 kilovolt ("kV") high-voltage direct current ("HVDC") transmission system extending approximately 158 miles from the U.S. border crossing with Canada near the community of Pittsburg, New Hampshire ("NH"), to a new HVDC-to-Alternating Current ("AC") converter facility to be constructed in Franklin, NH; and, from a new HVDC-to-AC converter facility in Franklin, NH, to the proposed Project terminus at the Public Service of New Hampshire's ("PSNH") existing Deerfield Substation located in Deerfield, NH, by means of a 345 kV AC electric transmission line extending 34 miles; and the total length of the proposed Project would be approximately 192 miles.

The proposed project's U.S. border crossing in Pittsburg, NH is in close proximity to the VT-NH border in the vicinity of Beecher's Falls, VT (see attached map). Northern Pass has not proposed any construction within the State of Vermont. However, because of this proximity, the indirect

Area of Potential Effects (APE) defined for the proposed project, in accordance with 36 CFR Part 800, extends into Vermont. The indirect APE for the proposed project is defined as two miles wide (one mile on either side of the centerline of the existing or proposed new right of way) and a one mile radius around any new facilities such as substations. The attached map depicts this indirect APE within the State of NH. For this reason, DOE would like to consult with the Vermont Division of Historic Preservation to discuss the indirect APE within the State of Vermont, identification of any potential consulting parties, and identification of cultural resources within the indirect APE in Vermont.

*The Amended Notice of Intent To Modify the Scope of the Environmental Impact Statement and Conduct Additional Public Scoping Meetings, and Notice of Floodplains and Wetlands Involvement for the Northern Pass Transmission Line Project* (78 FR 54876) is available at [http://www.northernpasseis.us/media/documents/anoi\\_9-06-13.pdf](http://www.northernpasseis.us/media/documents/anoi_9-06-13.pdf). In addition, please note that Northern Pass project-related maps, documents, and other information are available on the DOE's Northern Pass EIS Web site ([www.northernpasseis.us](http://www.northernpasseis.us)) and on Northern Pass' Project website ([www.northernpass.us](http://www.northernpass.us)). Information regarding the Northern Pass Presidential permit application is also available on the DOE Web site at <http://energy.gov/oe/services/electricity-policy-coordination-and-implementation/international-electricity-regulatio-2> (see Docket PP-371).

DOE would appreciate a response to this invitation to consult within 15 calendar days of the date of this letter. Please reply via email ([brian.mills@hq.doe.gov](mailto:brian.mills@hq.doe.gov) and [caitlin.callaghan@hq.doe.gov](mailto:caitlin.callaghan@hq.doe.gov)) or mail to Mr. Brian Mills, U.S. Department of Energy, OE-20, 1000 Independence Ave, SW, Washington, D.C. 20585. If no response is received within the time specified, the DOE will remove your organization from the Section 106 consulting party list for this project.

If you have questions regarding the DOE's on-going review of the proposed Northern Pass Transmission Project, or your participation as a Section 106 consulting party, please contact Caitlin Callaghan via phone, (202) 287-6345, or email ([caitlin.callaghan@hq.doe.gov](mailto:caitlin.callaghan@hq.doe.gov)) or me via phone, (202) 586-8267, or email ([brian.mills@hq.doe.gov](mailto:brian.mills@hq.doe.gov)).

Sincerely,

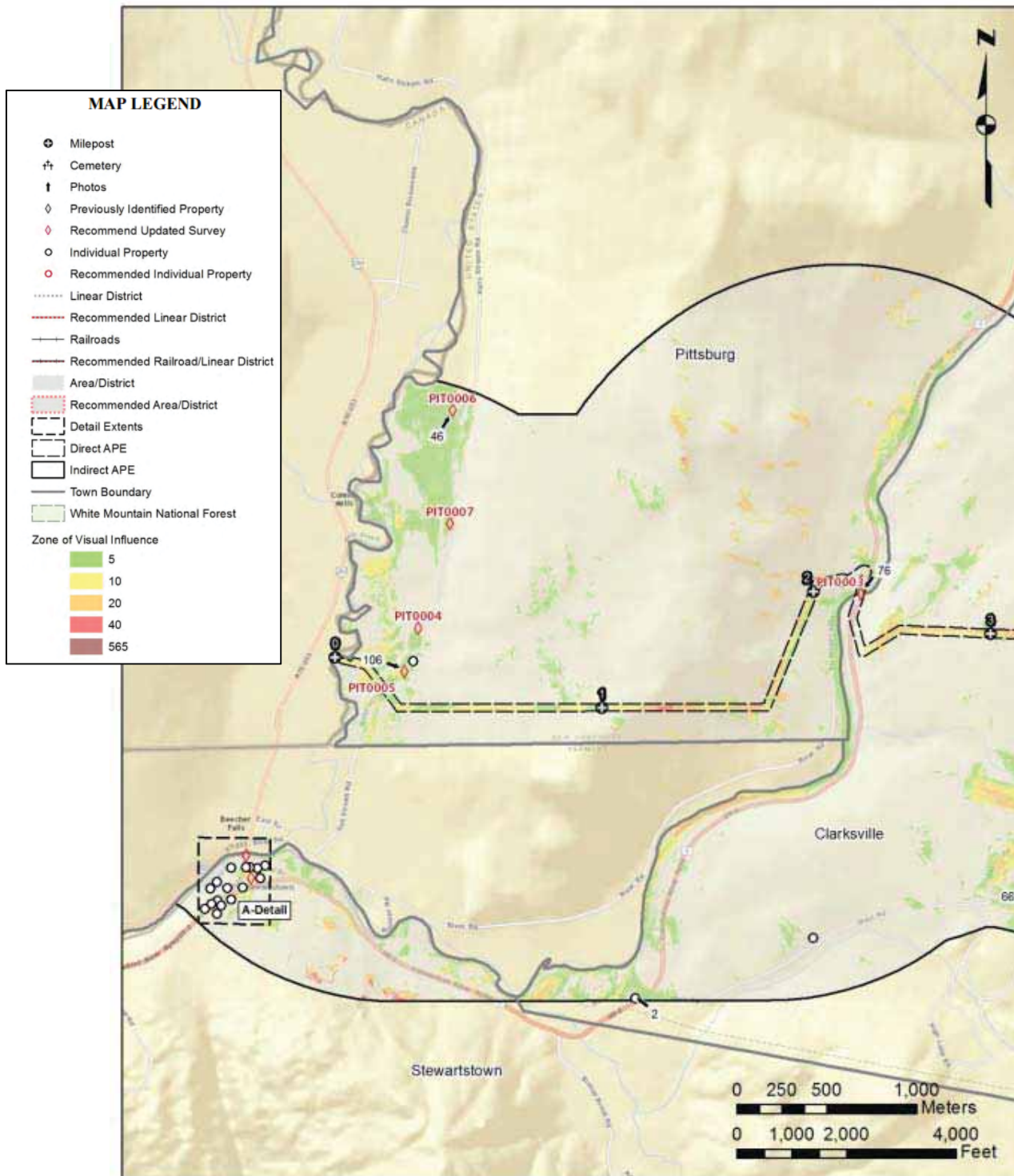


Brian Mills  
Senior Planning Advisor  
Northern Pass EIS NEPA Document Manager  
Office of Electricity Delivery & Energy Reliability

cc: Caitlin Callaghan, DOE



Attachment – Map of the indirect APE in the vicinity of Beecher’s Falls, VT





## Department of Energy

Washington, DC 20585

VIA ELECTRONIC MAIL

August 30, 2016

Laura Trieschmann  
State Historic Preservation Officer  
Vermont Division of Historic Preservation  
1 National Life Drive  
Davis Building, 6<sup>th</sup> Floor  
Montpelier, VT 05620-0501

**CONCUR**  
**Vermont Division for Historic Preservation**

e-Signed by Laura Trieschmann  
on 2016-09-08 21:16:10 GMT

**State Historic Preservation Office**

SUBJECT: Section 106 Consultation on the Area of Potential Effects and Level of Effort for Section 106 Identification Work in Vermont for the Proposed Northern Pass Transmission Project

Dear Ms. Trieschmann,

Thank you for meeting with the U.S. Department of Energy (DOE) team about the proposed Northern Pass Transmission (Northern Pass) Project on June 29, 2016. We appreciate your responsiveness regarding our Section 106 review for the portion of the indirect area of potential effects (APE) for the Northern Pass Project in the Town of Canaan, Essex County, VT, near the New Hampshire-Vermont border in the vicinity of Beecher's Falls, VT. We look forward to consultation with you during our Section 106 review.

The following information provides a summary of, and context for, the various topics raised during our June 29, 2016 discussion.

### **Regulatory Context**

Northern Pass Transmission, LLC (NPT) is seeking a Presidential permit from DOE for the Northern Pass Project to cross the U.S.-Canada border. DOE's issuance of a Presidential permit is a Presidential action pursuant to the authority delegated by the President of the United States under Executive Order 10485, as amended by Executive Order 12038, to DOE. DOE's authority is limited to the international border crossing.

In addition to a Presidential permit from DOE, the Northern Pass Project also requires authorizations from the U.S. Forest Service and the U.S. Army Corps of Engineers. Because the Northern Pass Project would cross the White Mountains National Forest (WMNF), Northern Pass is also seeking a special use permit from the U.S. Forest Service (USFS). The USFS has siting authority for the portion of the Northern Pass Project located within the WMNF. Additionally, because the Northern Pass Project would cross wetlands and waterbodies that fall under the regulatory jurisdiction of the U.S. Army Corps of Engineers, New England District (USACE), Northern Pass is also seeking permits in accordance with Section 10 of the Rivers and Harbors Act and Section 404 of the Clean Water Act from the USACE. The USFS, USACE, and DOE have agreed that DOE is the lead federal agency for purposes of Section 106 of the National

Historic Preservation Act of 1966, as amended (NHPA), in accordance with 36 CFR § 800.2(a)(2).

The Northern Pass project also requires a certificate from the New Hampshire Site Evaluation Committee (NH SEC), in accordance with NH RSA 162-H. The NH SEC's review of NPT's October 19, 2015 application filing is pending (SEC Docket No. 2015-06).

#### **Description of the Section 106 Undertaking and the Project**

NPT submitted an initial Presidential permit application to DOE in 2010 (76 FR 7828) and subsequently amended its application in July 2013 (75 FR 50405) and August 2015 (80 FR 58725). The applications are available on DOE's project website (<http://www.northernpasseis.us/>). In considering whether the issuance of a Presidential permit to NPT would be consistent with the public interest, DOE has determined to treat the issuance of a Presidential permit for the proposed project as an undertaking under Section 106, as defined in 36 CFR §800.16(y). Similarly, the issuance of a special use permit and a Section 404 or Section 10 permit are the undertakings for the USFS and USACE, respectively. Additionally, DOE is evaluating the impacts of the issuance of a Presidential permit for the proposed Northern Pass Project in an environmental impacts statement (EIS) that is being prepared in accordance with the National Environmental Policy Act of 1969 (NEPA). USFS and USACE are cooperating agencies for purposes of the NEPA review.

The proposed international border crossing for the Northern Pass Project is located in the Town of Pittsburg, NH, approximately 0.6 miles north of Stewartstown, NH, and approximately 0.5 miles north of Beecher Falls, VT. As of the 2015 Amended Application, the proposed project route consists a new electric transmission line located entirely within NH, extending approximately 192 miles (mi) from the U.S.-Canada border in Pittsburg, NH, south to Deerfield, NH (see Attachment A). The proposed project comprises:

- approximately 32 miles of new overhead HVDC transmission line located within new transmission corridor (approximate mileposts [MPs] 0.0 to 2.0; 2.5 to 5.5; and 13.0-40.0);
- approximately 60 miles of new underground HVDC transmission line located beneath existing public roadways or the Connecticut River (approximate MPs 2.0 to 2.5; 5.5 to 13.0; and 80.5 to 132.0);
- approximately 100 miles of new overhead HVDC or AC transmission line located within existing PSNH transmission corridor (approximate MPs 40.0 to 80.5; 132.0 to 192.0);
- a total of six proposed new aboveground transition stations where the new transmission line transitions between overhead and underground (approximate MPs 2.0 and 2.5; 5.5 and 13.0; and 80.5 and 132.0);
- one proposed new aboveground converter station, the Franklin Converter Station in Franklin, NH, where the HVDC transmission is converted to HVAC transmission (approximate MP 156.0); and
- upgrades to the existing Deerfield Substation in Deerfield, NH at approximate MP 192.0 to serve as the terminus for the new overhead HVAC transmission line (these upgrades are within the existing substation yard).

Additionally, a number of upgrades to existing AC transmission facilities south of the terminus of the proposed Northern Pass Project in Deerfield, NH have been identified by ISO-NE and are required to support connection of the proposed Northern Pass Project to the New England electricity system. These upgrades are collectively referred to as the AC Upgrades.

At the northern end of the project, near the international border crossing and in the vicinity of the New Hampshire-Vermont border (see Attachment B), the Northern Pass Project comprises:

- the proposed international border crossing located in the Town of Pittsburg, NH, approximately 0.6 mile north of Stewartstown, NH, and approximately 0.5 mile north of Beecher Falls, VT;
- approximately 2 miles of new overhead HVDC transmission line located within new transmission corridor in NH from the international border crossing to the vicinity of the Route 3 bridge crossing of the Connecticut River near Clarksville, NH (approximate MPs 0.0 to 2.0);
- approximately 0.5 mile of new underground HVDC transmission line located beneath the Connecticut River in NH (approximate MPs 2.0 to 2.5);
- two proposed new aboveground transition stations on each side of the Connecticut River crossing where the new transmission line transitions between overhead and underground (one in NH near Beecher's Falls Road at approximate MP 2.0 and one in NH near U.S. Route 3/Daniel Webster Highway) at approximate MP 2.5); and,
- a portion of an approximately 3-mile segment of new overhead HVDC transmission line located within new transmission corridor in NH from the Connecticut River crossing to Wiswell Road in Clarksville, NH (3-mile segment is located between approximate MPs 2.5 to 5.5; the portion of this segment that is located within approximately one mile of the New Hampshire-Vermont border is located between approximate MPs 2.5 to 3.5).

#### **Status of Section 106 Consultation**

DOE initiated consultation with the NH Division of Historical Resources, in its capacity as the NH State Historic Preservation Office (NH SHPO), in anticipation of receiving the 2013 Amended Application. In January 2014, DOE identified and invited several representatives of local governments with jurisdiction over the area in which the effects of the undertaking may occur, historic and cultural resources organizations, federal and state agencies, federally-recognized tribes, and other parties that have a demonstrated interest to participate in the Section 106 review as Consulting Parties.

To date, approximately 60 Consulting Parties are participating in the Section 106 process. These Consulting Parties include federal agencies (DOE, USFS, USACE, and the National Park Service [for the Appalachian National Scenic Trail]), the Advisory Council on Historic Properties (ACHP), the NH SHPO, representatives of local governments with jurisdiction over areas crossed by the project route, NPT (the applicant), and additional Consulting Parties comprising national, state, local, and private entities and individuals with a demonstrated interest in the effects of the Northern Pass Project on historic properties in NH (36 CFR § 800.2(c)(5)). No federally recognized Indian tribes have expressed an interest, to DOE or USFS, in consulting on the Northern Pass Project; however, the Cowasuck Band – Pennacook/Abenaki People and the Nulhegan Band of the Coosuk - Abenaki Nation are participating as Consulting Parties in the Section 106 process.

DOE has maintained regular contact with Section 106 Consulting Parties, including formal correspondence, regular (generally monthly) electronic updates delivered by email, as needed in-person Consulting Party meetings and Consulting Party conference calls or webinars, maintaining a Section 106 website for the public on which publicly accessible information for Section 106 can be viewed by non-Consulting Parties (<http://www.northernpasseis.us/consultations/section106/>), and maintaining a Consulting Party Website on which information specific to Section 106 and specifically for Consulting Parties can be viewed

(<http://www.northernpasseis.us/consultations/section-106-private>). DOE's consultation under Section 106 for the Northern Pass Project is ongoing.

DOE appreciates your recommendations with respect to identifying and engaging Consulting Parties from the State of Vermont. Per your recommendations, DOE will invite the following additional parties to participate in DOE's Section 106 review as Consulting Parties:

- Town of Canaan, VT  
Vernon Crawford, Chairperson  
Town of Canaan Board of Selectmen  
PO Box 159  
318 Christian Hill  
Canaan, VT 05903
- The Canaan Historical Society  
Dennis Fuller, Chairman  
PO Box 28  
Canaan, VT 05903
- The Preservation Trust of Vermont  
Paul Bruhn, Executive Director  
104 Church Street  
Burlington, VT 05401
- Northeastern Vermont Development Association  
David Snedeker, Executive Director  
36 Eastern Avenue  
PO Box 630  
St Johnsbury, VT 05819
- Vermont Commission on Native American Affairs  
Lucy Cannon-Neel, Chair  
1 National Life Drive, Davis Bldg, 6th Floor  
Montpelier, VT 05620-0501

If you have any additional information that could facilitate engaging these prospective Consulting Parties, or if you have suggestions for additional consulting parties, please let us know.

#### **Definition of the APE**

In accordance with 36 CFR § 800.4(a)(1), DOE, in consultation with NH SHPO, determined and documented the APE. Additionally, other Consulting Parties to the Section 106 process were invited to comment on the definition of the APE for the Northern Pass Project. DOE considered the comments it received from Consulting Parties in NH on the definition of the APE.

The direct APE for the Northern Pass Project is defined as the entire width of new transmission right-of-way (ROW) (generally 100 feet wide), the entire width of existing legally defined PSNH ROW (generally 200 feet wide with variations), a 20 foot wide area extending away from the edge of pavement on both sides of existing roads, within which portions of the proposed Project may be buried (generally roadway burial of the transmission line will occur in an area 8-10 feet wide and 6 feet deep), and the footprints of access roads, laydown areas, and the new converter station. These are the areas within which direct impacts and effects of the new underground and aboveground components on cultural resources and/or historic properties will be considered. The direct APE for the Northern Pass Project is located entirely within New Hampshire; the direct APE does not extend into Vermont.

The indirect APE for the Northern Pass Project is defined as a one mile wide area on both sides of the centerline of clearing for new ROW and/or the centerline of the legally defined PSNH ROW and/or a one mile radius around the edge of the construction footprint for new aboveground facilities associated with the proposed Project (e.g., the proposed new transition stations and the proposed new Franklin Converter Station). For new underground components of the Northern Pass Project, generally associated with burial within existing public roadways, the indirect APE is defined as an approximately 200 foot wide area extending away from the edge of pavement on both sides of the existing roads, within which architectural or built resources are visible from the roadways. These are the areas within which indirect impacts and effects of new ROW and new aboveground and buried project components on cultural resources and/or historic properties will be considered.

The indirect APE for the Northern Pass Project is located almost entirely within New Hampshire. A portion of the indirect APE for the Northern Pass Project extends into the Town of Canaan in Essex County, VT, near the New Hampshire-Vermont border in the vicinity of Beecher's Falls, VT. The portion of the indirect APE that crosses into Vermont is approximately 1.25 square miles. The attached map depicts the portion of the indirect APE within Vermont (see Attachment B).

DOE requests your written concurrence with the determination of the portion of the indirect APE for the Northern Pass project (approximately 1.25 square miles) that extends into the Town of Canaan in Essex County, VT, near the New Hampshire-Vermont border in the vicinity of Beecher's Falls, VT.

#### **Identification Efforts in Vermont**

As we discussed during our June 29, 2016 meeting, DOE will conduct an initial identification effort within the indirect APE in Vermont in a manner that is generally consistent with DOE's level of effort for similar identification efforts within the indirect APE in New Hampshire. As you will recall from our discussion, DOE will require NPT to complete the identification and evaluation effort as stipulated in the terms of the programmatic agreement (PA) for the Northern Pass Project.

DOE is proposing the following approach to identification of cultural and historic resources within the approximately 1.25 square mile portion of the indirect APE that extends into Vermont in the vicinity of Beecher's Falls, VT. DOE's cultural resources contractor, SEARCH, will conduct initial background research and a site file search at the Vermont Division of Historic Preservation (VT DHP) and fieldwork sufficient to develop preliminary Historic Site and Structure Survey (HSSS) forms for architectural resources within the portion of the indirect APE that is located within the Town of Canaan, VT. DOE's team will submit the preliminary HSSS forms to the VT DHP for review.

As part of the preparation of preliminary HSSS forms, DOE will provide information for the following sections to the extent that information is available based on initial identification efforts, on an HSSS form for each architectural resource that appears to be 50 years old or older within the indirect APE in Vermont:

- Property Location Information (e.g., county, town, address, common name) and a corresponding map
- Property Type

- Whether the property is listed in the State Register, and if so the date on which it was listed
- The date the structure was built
- Information about accessibility to the public
- Information about the physical condition of the structure
- Information about the structure's level of significance, style, and general descriptive information
- Information about the property/structure's surrounding environment

DOE requests your written concurrence that the above information for the HSSS forms will be sufficient for DOE's initial identification efforts within the indirect APE for the Northern Pass Project in Vermont, with the understanding that NPT will be required to complete the identification and evaluation efforts as stipulated in the terms of the PA for the Northern Pass Project.

Specifically, DOE proposes to develop these preliminary HSSS forms based on the following methodology:

#### *Background Research*

Background research will focus on developing historic contexts associated with properties identified during field survey within the indirect APE in Vermont. Research shall include a review of previous cultural resources investigations and relevant architectural history studies within the indirect APE in Vermont. DOE's cultural resources contractor, SEARCH, shall conduct a review of documents and databases held at the Vermont Division of Historic Preservation (VT DHP) (e.g., Online Resource Center), as well as at federal, state, and local libraries and archives, as needed. Additional sources examined may include historic maps and photographs, local histories, census records, and secondary source materials. A variety of digital resources may also be consulted, including the Library of Congress American Memory Collection, Vermont State Archives, Vermont Historical Society, and online property records.

Site file research at VT DHP will include review of Individual Building HSSS forms, Historic District or Complex HSSS forms, historic context files, and Vermont State and National Register nomination forms. This research will identify properties located within the indirect APE in Vermont that are NRHP-listed or NRHP-eligible. The site file research will also identify properties that have been determined not eligible for the NRHP, as well as properties that have not yet had a determination of eligibility. Because NRHP-eligibility may change over time, properties surveyed more than 10 years ago (pre-2005), even if determined not eligible for NRHP at that time, will be included in the study in order to re-evaluate NRHP-eligibility (e.g., previously did not meet age eligibility of >50 years of age, changes to integrity of the property, or not previously evaluated as a contributing or non-contributing building of a historic district).

Research will incorporate Geographic Information System (GIS) data such as U.S. Geological Survey (USGS) topographic maps, geo-referenced historic maps, aerial photography, and National Register Information System (NRIS) data, to facilitate the identification of architectural resources within the indirect APE in Vermont. SEARCH will develop a GIS map that includes these data as well as previously surveyed or identified above-ground resources on file with VT DHP. The geographic locations and addresses for previously identified historic properties and districts within the indirect APE in Vermont will be verified by available parcel data, geo-coding with ESRI World Geocoding Service, digital aerial photographs, and field observations.

### *Viewshed Analysis*

A viewshed model for the proposed transmission line project has been developed based on a 5-m gridded Digital Surface Model (DSM) of the study area created by TJ Boyle (Burlington, VT), a subcontractor to SE Group, DOE's prime contractor. The DSM data were acquired from Intermap (2012) (<http://www.intermap.com>). The viewsheds for the indirect APE were processed to include the screening effects of objects over 7 ft (2.1 m) in height (leaf-on tree conditions, buildings, etc.). Additionally, the viewshed includes areas of visibility from water surfaces (e.g., rivers, ponds and lakes). Surface viewsheds were created and calculated based on the visibility of all proposed Northern Pass Project components, including existing towers that will remain in place, new and/or relocated towers, new lattice structures, and areas of vegetation clearing. The number of potentially visible Northern Pass Project components (structures and/or ROW) within the indirect APE in Vermont is based on the proposed locations of these project components.

Above-ground architectural or built resources within the indirect APE that SEARCH identifies as meeting the survey requirements will be analyzed relative to the viewshed model parameters using a 164 ft (50 m) buffer zone, with each buffer zone based on the approximate center point of an identified property or resource (i.e., individual or groups of building or structure). A 50-m buffer zone will be used to apply a consistent viewshed area for each identified property or resource. If any portion of the buffer zone intersects the viewshed, the property or resource will be treated as having a view of the Project.

### *Field Survey*

Field survey methods shall: 1) re-locate previously recorded above-ground architectural or built resources, 2) identify previously undocumented architectural or built resources, and 3) identify properties that maintain architectural integrity and/or historical significance, which are located within the indirect APE in Vermont. All fieldwork will be conducted by staff meeting the Secretary of the Interior's qualifications for architectural historians, and by consultants approved by the VT DHP to conduct architectural history and cultural resource surveys in Vermont.

A driving or windshield survey shall cover public roads within the indirect APE in Vermont in order to examine and document existing buildings, structures, and other aspects of the built environment visible from roads and highways. Above-ground architectural or built resources that appear to be older than 50 years of age will be photographed, described, and mapped. Resources that are not visible from roadways because they were located beyond the indirect APE, concealed by vegetation, or situated on private roads, will not be captured during the field survey. The locations of resources will be documented by Global Positioning System (GPS) and noted on field maps, described in photo logs, and physical property addresses noted. Upon completion of fieldwork, the data will be processed and analyzed at SEARCH offices. Field photographs will be geo-tagged, GPS points examined for spatial accuracy, field logs transcribed, and the resulting data sets incorporated into an architectural history GIS for the proposed Project.

### *Section 106 Consulting Party Information*

As part of DOE's consultation with Vermont Consulting Parties to the Section 106 process for the Northern Pass Project and to be consistent with what has been done in NH, DOE will be requesting information on known cultural resources within the indirect APE from Consulting Parties in VT. Additional desktop analysis and background research shall be performed by SEARCH to confirm cultural resources information received in statements and data from Consulting Parties in VT. This process of analyzing information from Consulting Parties in VT shall involve methodologies of historical investigation including review of relevant primary and



secondary sources obtained from libraries, archives, local historical societies, and online databases. Oral interview and fieldwork will also be conducted with Consulting Parties and/or property owners and informants with local knowledge, as needed, as part of the analysis of consulting party data. Finally, the locations of resources identified by Consulting Parties in VT will be mapped in GIS to determine whether they are within the indirect APE in Vermont. Where Consulting Party-identified cultural resources are confirmed within or adjacent to the indirect APE in Vermont, information about these cultural resources will also be included in HSSS forms.

#### *Recommendations*

SEARCH will use the findings of the background research, field survey, and viewshed analysis to make recommendations for the second phase of architectural surveys within the indirect APE, which will consist of the completion of any missing information from the HSSS forms. Recommendations shall consider NRHP eligibility for those architectural or built resources that are 1) located within the indirect APE in Vermont, 2) NRHP-listed, NRHP-eligible, or greater than 50 years old, and 3) are sufficiently intact (or retain sufficient integrity) to warrant completion of the HSSS forms. A previously inventoried property may be re-evaluated if, at the time of the original survey, 1) it did not meet the 50-year age requirement, 2) more than 10 years passed since the original survey or determination of NRHP-eligibility, or 3) the property has a character defining feature that was not addressed in the original survey. These features could include stone walls, mature trees, entrance gates, or other landscape features. Likewise, previously identified architectural resources located outside of the indirect APE in Vermont may be recommended for additional inventory if character-defining features that contribute to the significance of these resources are identified within the indirect APE.

While there may be architectural or built resources within the proposed Project's APE that are excellent and representative examples of specific architectural styles and historic contexts, recommendations for inventory will be limited to those architectural resources whose character-defining features include setting, viewshed, and/or landscape. Finally, if the initial survey and inventory of previously inventoried properties (within the viewshed of the project) was conducted more than 10 years ago (pre-2005), SEARCH may recommend inventory of these properties (even if initially determined not eligible by VT DHP), in order to re-evaluate any changes to the age and integrity of the property, or if Criterion A was never addressed in the original evaluation.

DOE requests your written concurrence with the methodology that DOE will employ to conduct its initial identification efforts within the indirect APE for the Northern Pass Project in Vermont.

#### **Programmatic Agreement**

During our June 29, 2016 discussion we noted that DOE is working to develop a PA to fulfill the steps of the Section 106 review process. The draft documents, comment response summaries, and other related information are available on DOE's Consulting Party Website:

<http://www.northernpasseis.us/consultations/section-106-private>. This website and its contents are intended for Consulting Party use only. You should have received an email from [info@northernpasseis.us](mailto:info@northernpasseis.us) with access information. If you have any issues or questions regarding accessing this website or the information posted to the website for all Consulting Parties, please let us know.

As part of the continued development of a PA for the Northern Pass Project, DOE would like to work with you to incorporate the additional identification and evaluation work for Vermont, beyond the preliminary HSSS forms developed by DOE, which would need to be included in the PA. Additionally, DOE would appreciate any additional comments or suggestions you have

regarding the PA to effectively incorporate appropriate considerations for the assessment of effects on historic properties that are identified within the indirect APE in Vermont.

Thank you again for your engagement in DOE's Section 106 review of the proposed Northern Pass Project. DOE would appreciate your written concurrence on the items noted in this letter by September 20, 2016.

If you have questions regarding the DOE's on-going Section 106 review of the proposed Northern Pass Project, please contact Caitlin Callaghan via phone, (202) 287-6345, or email ([caitlin.callaghan@hq.doe.gov](mailto:caitlin.callaghan@hq.doe.gov)) or me via phone, (202) 586-8267, or email ([brian.mills@hq.doe.gov](mailto:brian.mills@hq.doe.gov)).

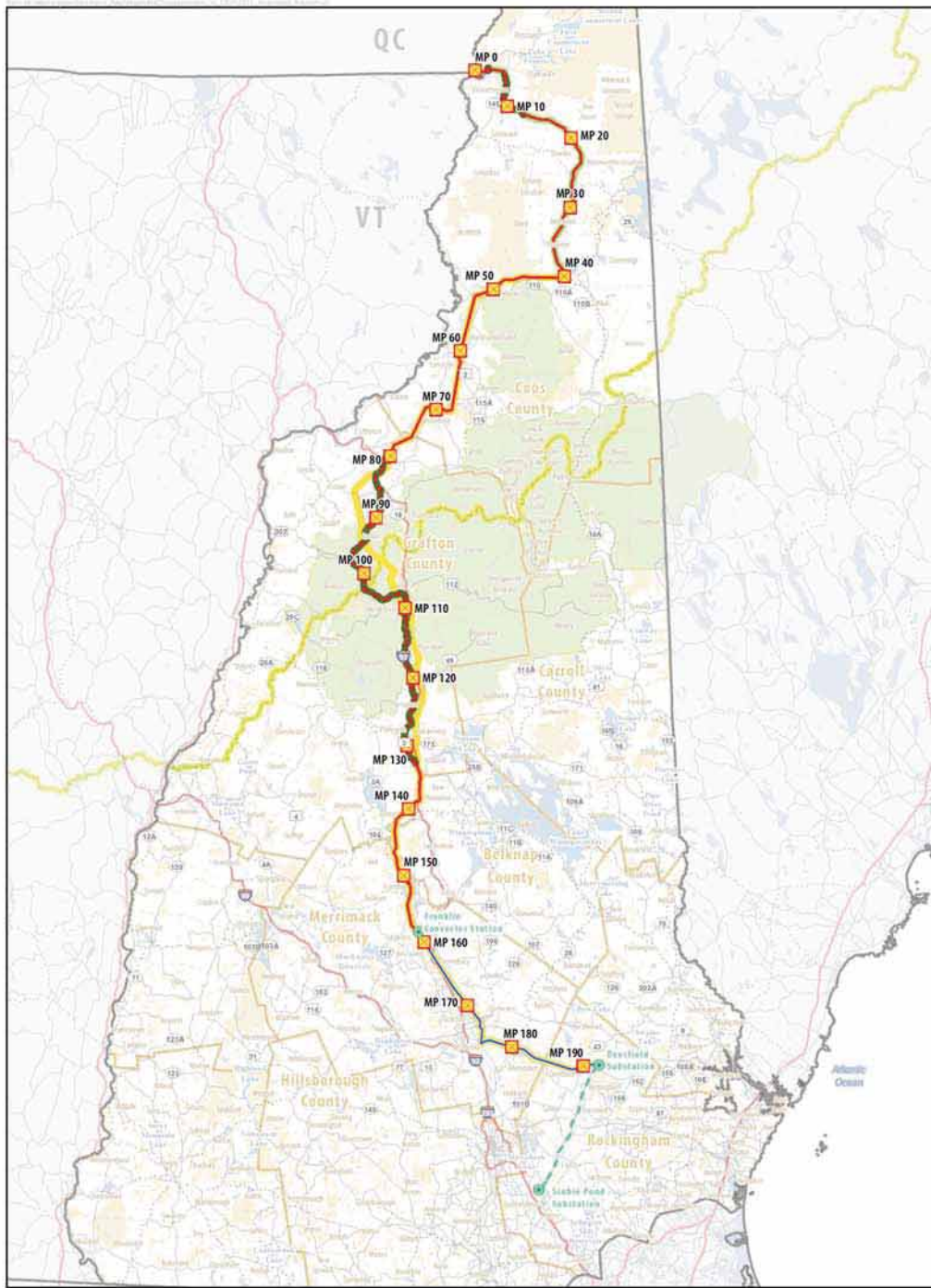
Sincerely,

A handwritten signature in blue ink that reads "Brian Mills". The signature is written in a cursive style with a long horizontal stroke extending to the left.

Brian Mills  
Senior Planning Advisor  
Northern Pass EIS NEPA Document Manager  
Office of Electricity Delivery & Energy Reliability

cc: Caitlin Callaghan, DOE

Attachment A – Map of the 2015 Amended Project Route



Legend

<p><b>Existing Conditions</b></p> <ul style="list-style-type: none"> <li>— State Boundary</li> <li>— County Boundary</li> <li>— Political Boundary</li> <li>— Freeway</li> <li>— Major Road</li> <li>— Secondary Road</li> </ul>	<ul style="list-style-type: none"> <li>Appalachian National Scenic Trail</li> <li>Waterbody</li> <li>NH Conservation Land (WMA, State Forest, Conservation Areas, etc.)</li> <li>White Mountain National Forest</li> <li>Existing PS/NH Transmission Route</li> </ul>	<p><b>NPT Project Components</b></p> <ul style="list-style-type: none"> <li>— New Transmission Route</li> <li>— Project in Roadway Corridor</li> <li>— Overhead High-Voltage Direct Current Centerline</li> <li>— Overhead High-Voltage Alternating Current Centerline</li> <li>— Underground High-voltage Direct Current Centerline</li> <li>— Existing Transmission Line Upgrades</li> </ul>	<ul style="list-style-type: none"> <li>Project Milepost</li> <li>Converter/Substation Location</li> </ul>	<p><b>2015 Amended Route</b> Northern Pass Transmission Line Project Environmental Impact Statement</p> <p>SCALE 0 5 10 Miles</p>
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SOURCE: ESRI 2011; GRANIT 2012; Burns and McDonnell 2011; USFS 2012; Ecology and Environment 2013

Attachment B – Map of the indirect APE in the vicinity of Beecher’s Falls, VT

