DOE/EIS-0463

DRAFT

NORTHERN PASS TRANSMISSION LINE PROJECT ENVIRONMENTAL IMPACT STATEMENT

VOLUME 2: APPENDICES

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

JULY 2015

Department of Energy
Washington, DC 20585
July 2015

Dear Sir/Madam:

Enclosed for your review and comment is the *Draft 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 U.S. Forest Service – White Mountain National Forest (USFS), the 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 proposed DOE action in the draft 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 draft 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.

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

You are invited to comment on this draft EIS during the 90-day comment period that will begin when 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 in the following locations: Tuesday, October 06, 2015 in Concord, NH; Wednesday, October 07, 2015 in Whitefield, NH; and Thursday, October 08, 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 is available on this website and DOE's NEPA website at http://nepa.energy.gov/draft_environmental_impact_statements.htm.

Comments on 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 by October 29, 2015. 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

DRAFT

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

Volume 2: Appendices

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

July 2015

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 draft 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:

Ms. Carol M. Borgstrom, Director
Office of NEPA Policy and Compliance, GC-54 7U.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 187-mile (301-km) electric transmission line across the United States (U.S.)/Canada border in northern New Hampshire (NH). This draft EIS addresses the potential environmental impacts of the Project (Proposed Action), the No Action Alternative, and nine additional action alternatives (Alternatives 3 through 6, with variations). The NH portion of the Project would be a single circuit ±300 kilovolt (kV) high voltage direct current (HVDC) transmission line running approximately 153 miles (246 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 187 miles (301 km).

PUBLIC COMMENTS: In preparing this draft 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). Additional comments were received during 11 public meetings that took place throughout the same time period in the following communities: Pembroke,

Franklin, Lincoln, Whitefield, Plymouth, Colebrook, Haverhill, and Concord, NH. Comments received during this period were considered during preparation of this draft EIS.

This draft 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 draft 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 draft 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 draft EIS are available for public review at 30 local libraries and town halls, or a copy can be requested from Mr. Brian Mills. The draft EIS is also available on the Northern Pass EIS website (http://www.northernpasseis.us/).

DOE invites comments on this draft EIS during the comment period that begins with the publication of the EPA's Notice of Availability in the *Federal Register*. 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.

The EIS website (http://www.northernpasseis.us/) provides information on public hearings to be held at several locations in New Hampshire during the comment period. Comments on the draft EIS and Section 106 may be submitted on the EIS website (http://www.northernpasseis.us/), sent via email to draftEIScomments@northernpasseis.us or Section106comments@northernpasseis.us, sent to Mr. Brian Mills at the physical address above, or provided verbally or in writing at a public hearing. Written and oral comments will be given equal weight, and any comments received after the comment period ends will be considered to the extent practicable.

APPENDIX A
MAPS

APPENDIX A: MAPS

Map 1: Vicinity Map and Project Sections

Map 2: Northern Section

Map 3: Central Section

Map 4: Southern Section

Map 5: Alternative 1 – No Action

Map 6: Alternative 2 – Proposed Action

Map 7: Alternative 3 – Underground Transmission Cable in Proposed Action Alignment

Map 8: Alternative 4a – Underground Transmission Cable in Roadway Corridors – *I-93 through Franconia Notch*

Map 9: Alternative 4b – Underground Transmission Cable in Roadway Corridors – *NH Routes 112 and 116 through WMNF*

Map 10: Alternative 4c – Underground Transmission Cable in Roadway Corridors – *NH Routes 112 and 116 through WMNF and US Route 3 from North Woodstock to Ashland*

Map 11: Alternative 5a – Proposed Action except Underground Transmission Cable along *I-93 through Franconia Notch*

Map 12: Alternative 5b – Proposed Action except Underground Transmission Cable along *NH Routes 112 and 116 through WMNF*

Map 13: Alternative 5c – Proposed Action except Underground Transmission Cable along *NH Routes 18, 112 and 116 through Sugar Hill, Franconia, Easton and WMNF*

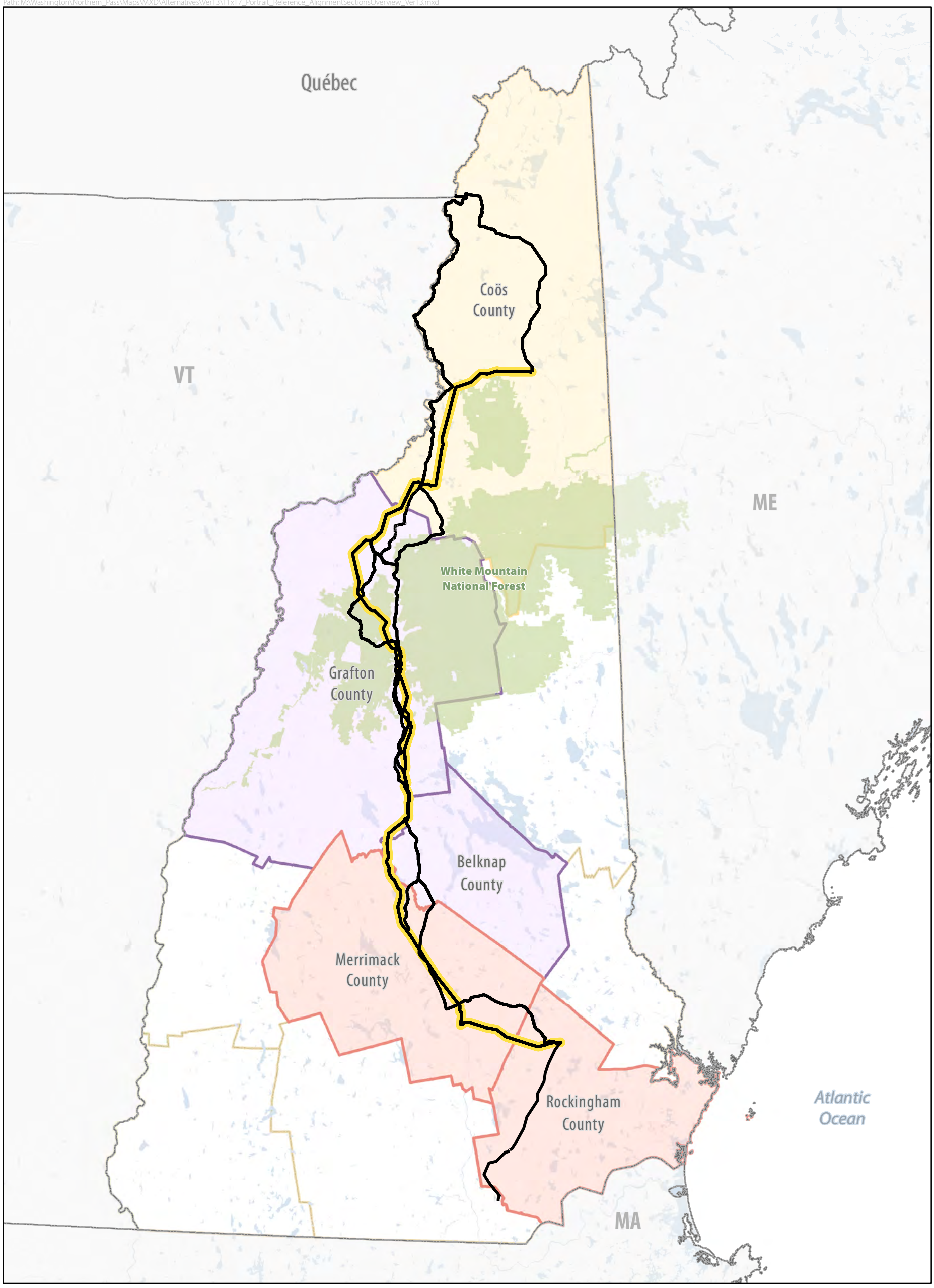
Map 14: Alternative 6a – Underground Transmission Cable in Roadway Corridors (*I-93 through Franconia Notch*) and Co-located HVAC

Map 15: Alternative 6b – Underground Transmission Cable in Roadway Corridors (*NH Routes 112 and 116 through WMNF*) and Co-located Overhead HVAC

Map 16: Alternative 4 and 6 Variations in Vicinity of WMNF

Map 17: Alternative 5 Variations in Vicinity of WMNF

Path: M:\Washington\Northern_Pass\Maps\MXD\Alternatives\Ver13\11x17_Portrait_Reference_AlignmentSectionsOverview_Ver13.mxd



Legend

- State Boundary
- County Boundary
- Alternative Project Alignment
- Waterbody
- White Mountain National Forest

Section Boundaries

- Northern Section
- Central Section
- Southern Section
- Existing PSNH Transmission Route

Map 1:
Vicinity Map and Project Sections
Northern Pass Transmission Line Project
Environmental Impact Statement

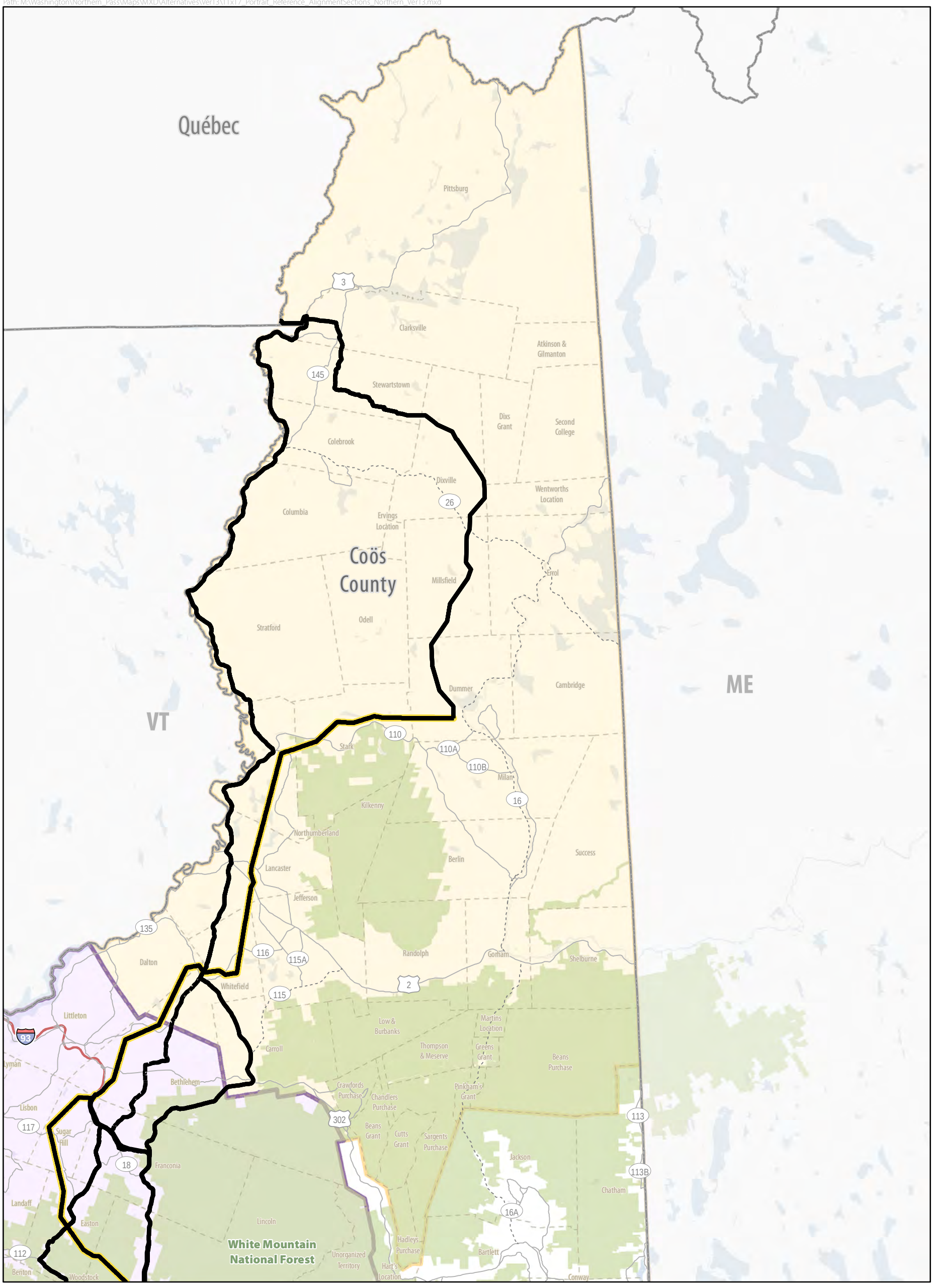
N

SCALE

0 8 16 Miles

SOURCE: ESRI 2011; Ecology and Environment 2014.

Path: M:\Washington\Northern_Pass\Maps\MXD\Alternatives\Ver13\11x17_Portrait_Reference_AlignmentSections_Northern_Ver13.mxd



Legend

- State Boundary
- Political Boundary
- County Boundary
- Alternative Project Alignment
- Waterbody
- White Mountain National Forest

Section Boundaries

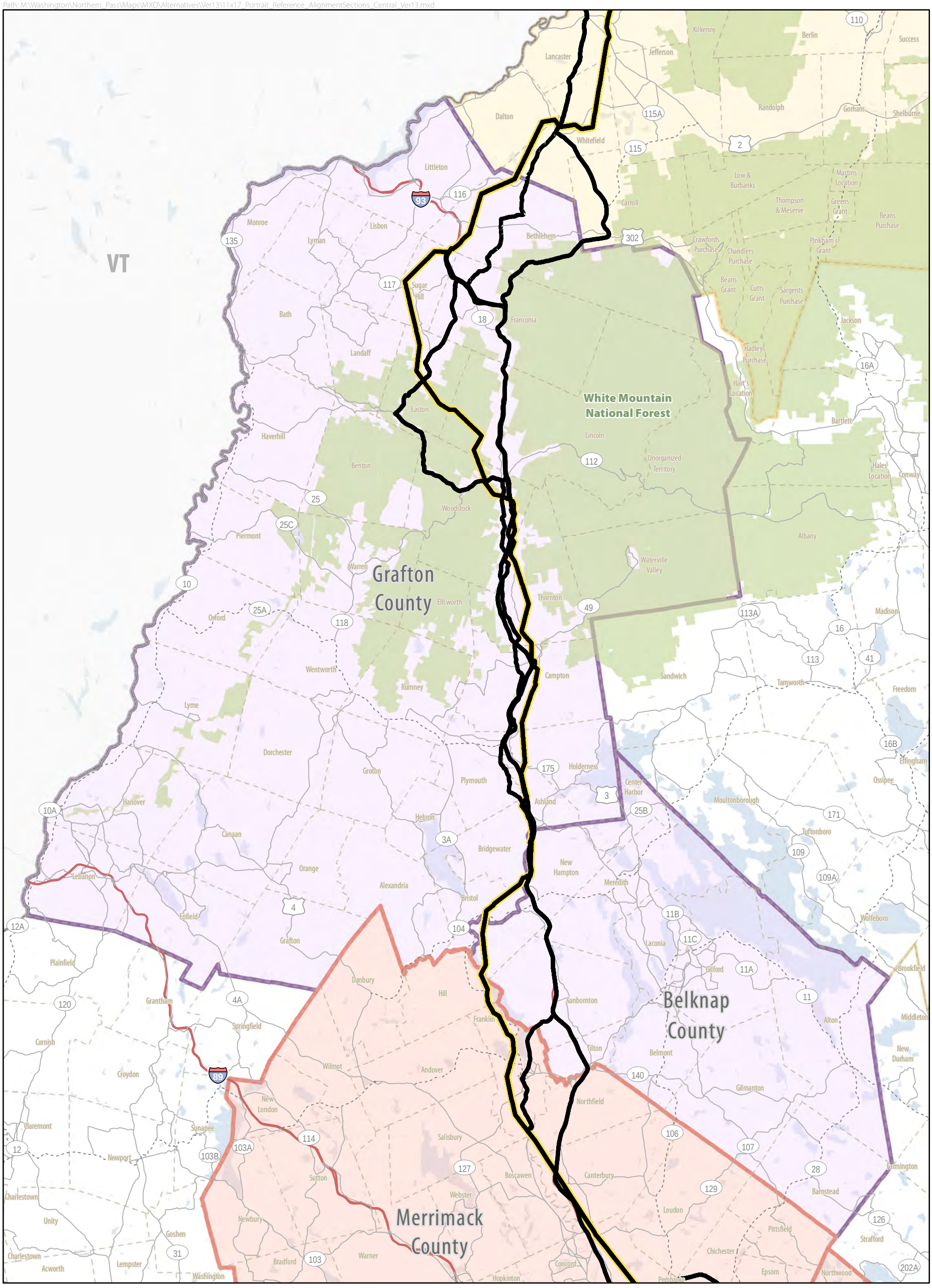
- Northern Section
- Central Section
- Southern Section
- Existing PSNH Transmission Route

Map 2:
Northern Section
Northern Pass Transmission Line Project
Environmental Impact Statement

SCALE
0 5 10 Miles

SOURCE: ESRI 2011; Ecology and Environment 2014.

Path: M:\Washington\Northern_Pass\Maps\MXD\Alternatives\Ver13\11x17_Portrait_Reference_AlignmentSections_Central_Ver13.mxd



Legend

- State Boundary
- Political Boundary
- County Boundary
- Alternative Project Alignment
- Waterbody
- White Mountain National Forest

Section Boundaries

- Northern Section
- Central Section
- Southern Section
- Existing PSNH Transmission Route

Map 3:
Central Section
Northern Pass Transmission Line Project
Environmental Impact Statement

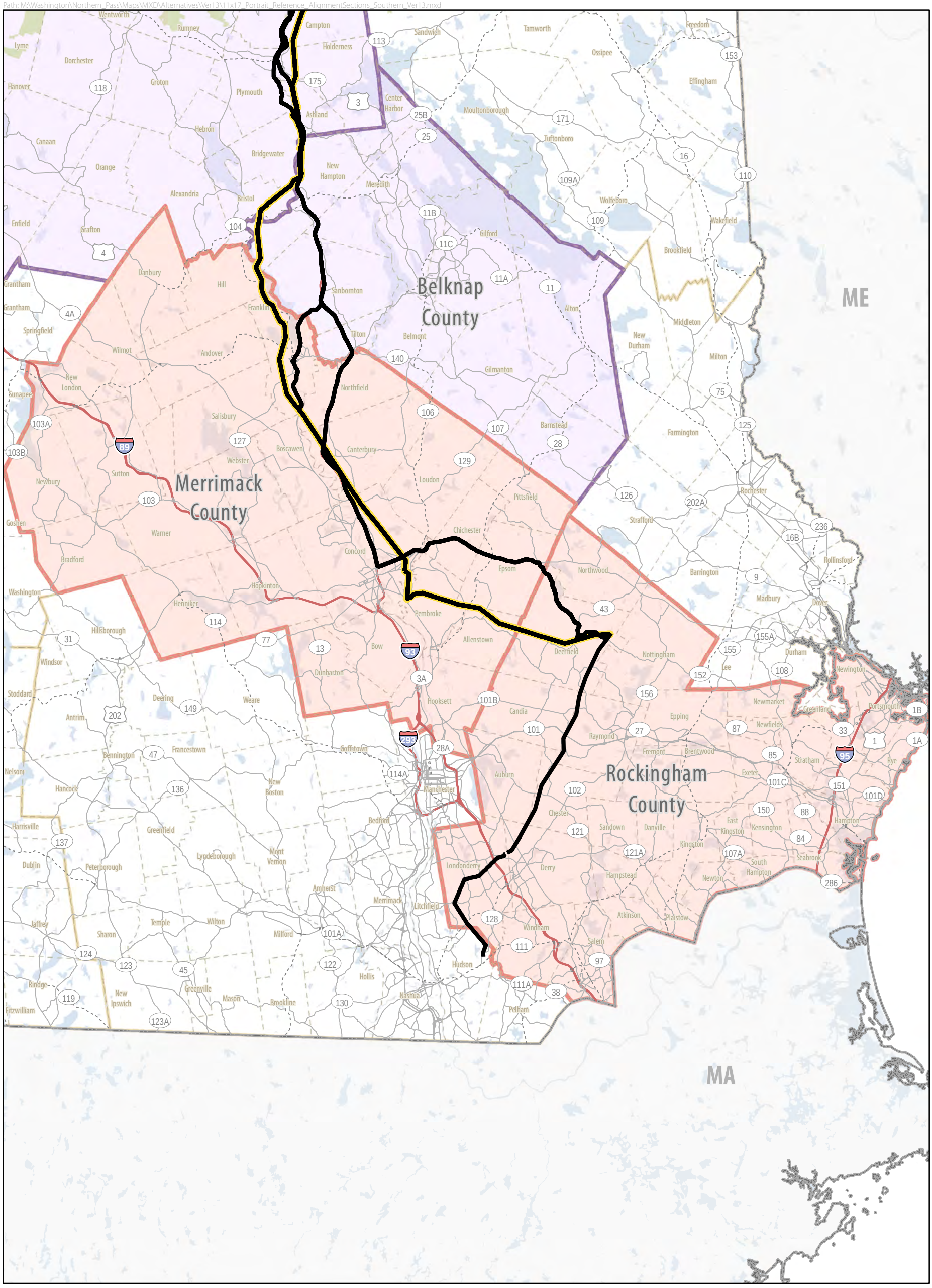
N

SCALE

0 5 10 Miles

SOURCE: ESRI 2011; Ecology and Environment 2014.

Path: M:\Washington\Northern_Pass\Maps\MXD\Alternatives\Ver13\11x17_Portrait_Reference_AlignmentSections_Southern_Ver13.mxd



Legend

- State Boundary
- Political Boundary
- County Boundary
- Alternative Project Alignment
- Waterbody
- White Mountain National Forest

Section Boundaries

- Northern Section
- Central Section
- Southern Section
- Existing PSNH Transmission Route

Map 4:
Southern Section
Northern Pass Transmission Line Project
Environmental Impact Statement

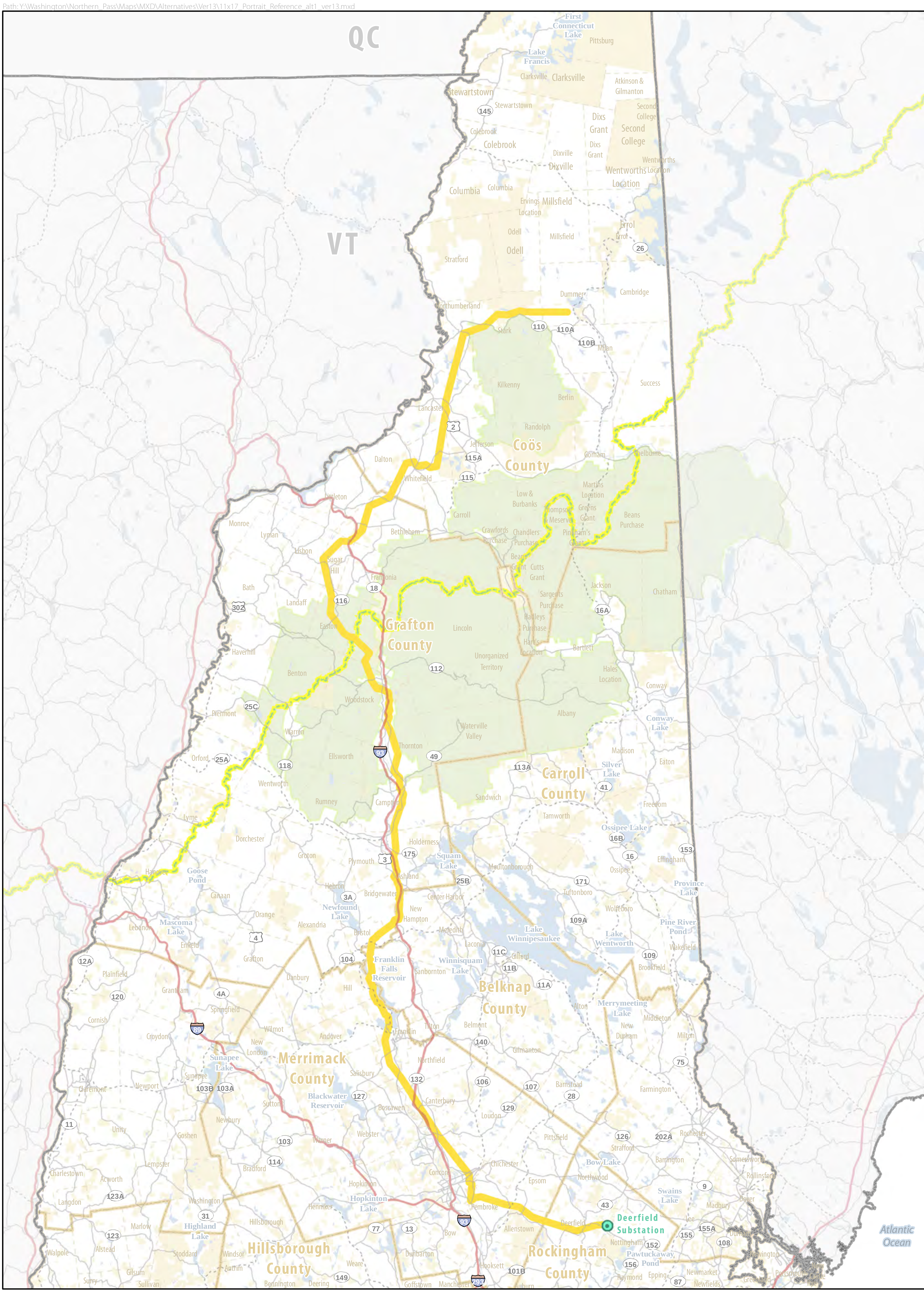
N

SCALE

0 5 10 Miles

SOURCE: ESRI 2011; Ecology and Environment 2014.

Path: Y:\Washington\Northern_Pass\Maps\MXD\Alternatives\Ver13\11x17_Portrait_Reference_alt1_ver13.mxd



Legend

Existing Conditions

- State Boundary
- County Boundary
- Political Boundary
- Freeway
- Major Road
- Secondary Road
- Appalachian National Scenic Trail
- Waterbody
- NH Conservation Land (WMA, State Forest, Conservation Areas, etc.)
- White Mountain National Forest
- Existing PSNH Transmission Route
- Converter/Substation Location

SOURCE: ESRI 2011; GRANIT 2012; Burns and McDonnell 2013; USFS 2012; Ecology and Environment 2013

Map 5:

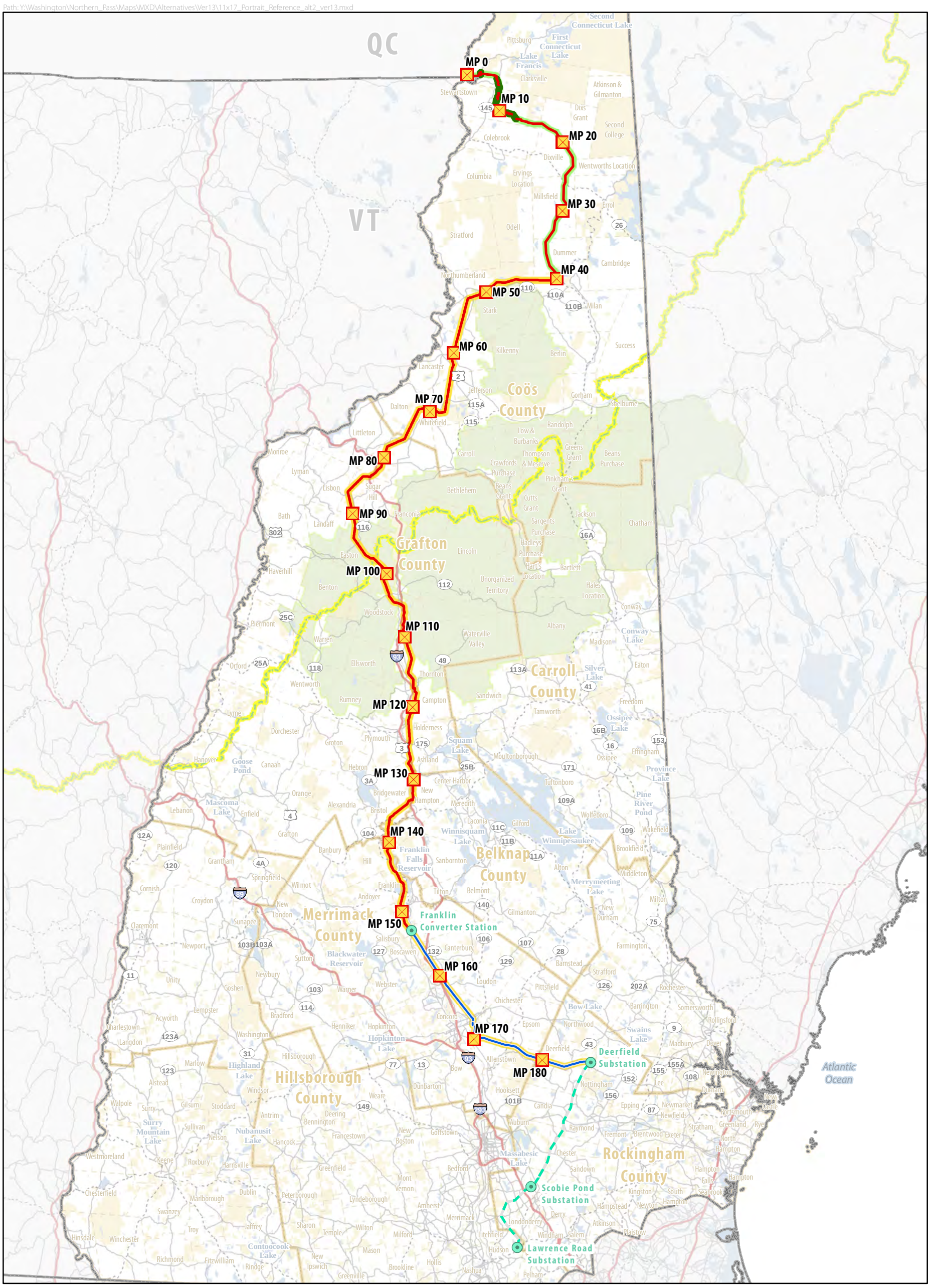
Alternative 1 - No Action

Northern Pass Transmission Line Project
Environmental Impact Statement

SCALE

0 5 10 Miles

Path: Y:\Washington\Northern_Pass\Maps\MXD\Alternatives\Ver13\11x17_Portrait_Reference_alt2_ver13.mxd



Legend

Existing Conditions

- State Boundary
- County Boundary
- Political Boundary
- Freeway
- Major Road
- Secondary Road
- Appalachian National Scenic Trail
- Waterbody
- NH Conservation Land (WMA, State Forest, Conservation Areas, etc.)
- White Mountain National Forest
- Existing PSNH Transmission Route

Alternative 2 Projects

- New Transmission Route
- Project in Roadway Corridor
- Overhead High-Voltage Direct Current Centerline
- Overhead High-Voltage Alternating Current Centerline
- Underground High-Voltage Direct Current Centerline
- Existing Transmission Line Upgrades
- Project Milepost
- Converter/Substation Location

SOURCE: ESRI 2011; GRANIT 2012; Burns and McDonnell 2013; USFS 2012; Ecology and Environment 2013

Map 6:

Alternative 2 - Proposed Action

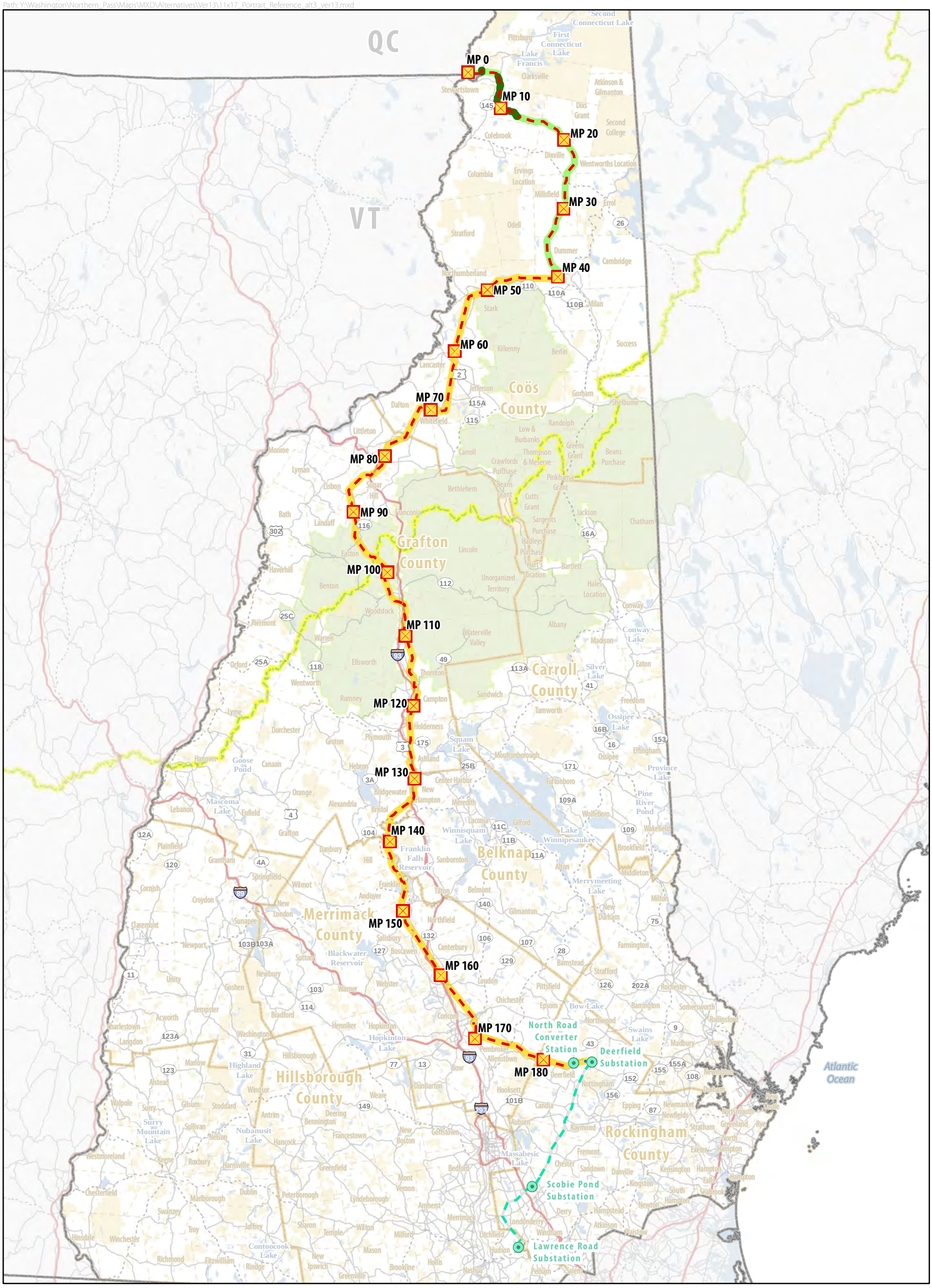
Northern Pass Transmission Line Project
Environmental Impact Statement

N

SCALE

0 5 10 Miles

Path: Y:\Washington\Northern_Pass\Maps\MXD\Alternatives\Ver13\11x17_Portrait_Reference_alt3_ver13.mxd



Legend

Existing Conditions
- State Boundary
- County Boundary
- Political Boundary
- Freeway
- Major Road
- Secondary Road
- Appalachian National Scenic Trail
- Waterbody
- NH Conservation Land (WMA, State Forest, Conservation Areas, etc.)
- White Mountain National Forest
- Existing PSNH Transmission Route

Alternative 3 Projects
- New Transmission Route
- Project in Roadway Corridor
- Underground High-Voltage Direct Current Centerline
- Underground High-Voltage Alternating Current Centerline
- Existing Transmission Line Upgrades
- Project Milepost
- Converter/Substation Location

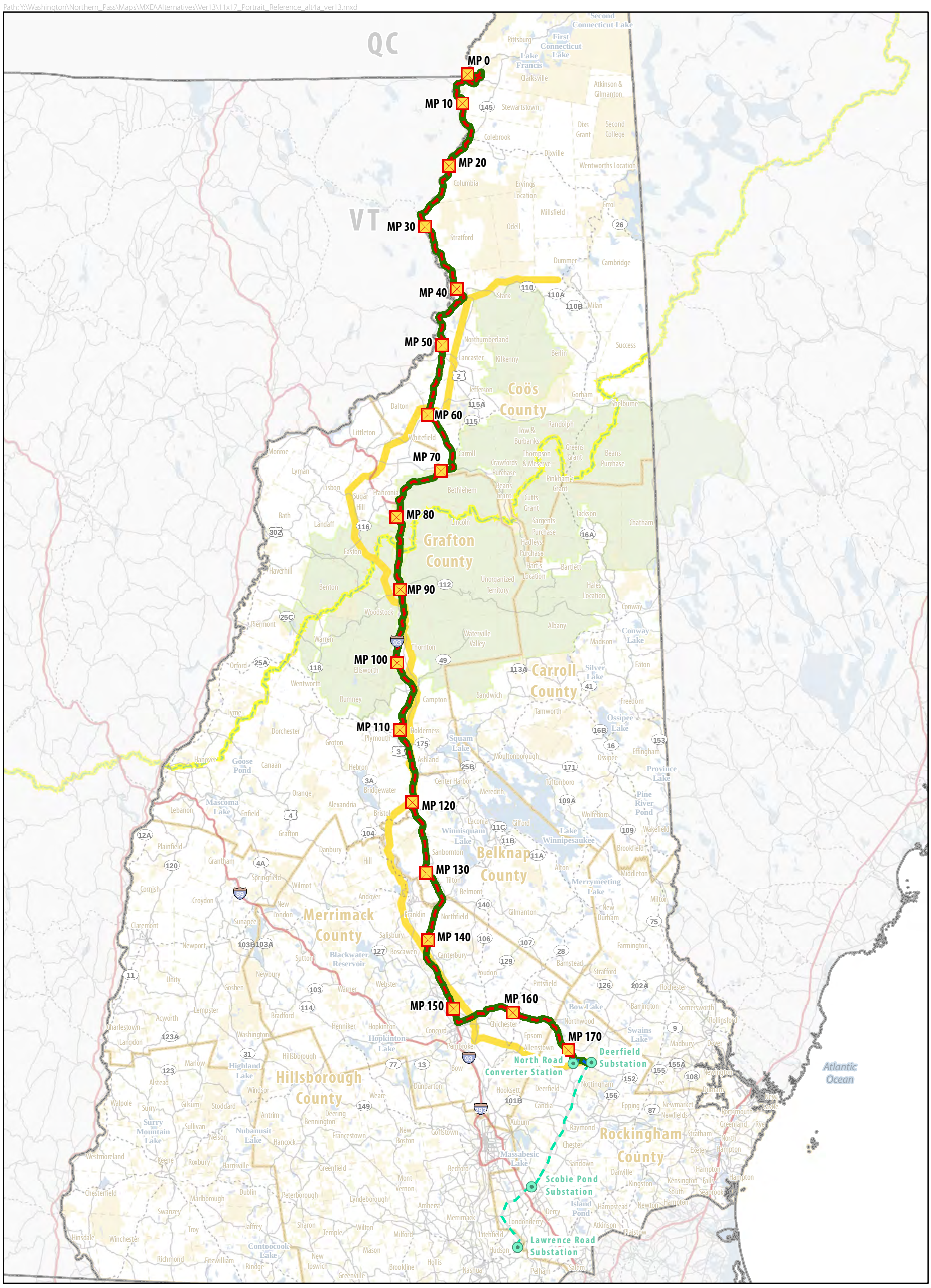
SOURCE: ESRI 2011; GRANIT 2012; Burns and McDonnell 2013; USFS 2012; Ecology and Environment 2013

Map 7:
Alternative 3 - Underground Transmission Cable in Proposed Action Alignment
Northern Pass Transmission Line Project
Environmental Impact Statement

N

SCALE
0 5 10 Miles

Path: Y:\Washington\Northern_Pass\Maps\MXD\Alternatives\Ver13\11x17_Portrait_Reference_alt4a_ver13.mxd



Legend

Existing Conditions

- State Boundary
- County Boundary
- Political Boundary
- Freeway
- Major Road
- Secondary Road
- Appalachian National Scenic Trail
- Waterbody
- NH Conservation Land (WMA, State Forest, Conservation Areas, etc.)
- White Mountain National Forest
- Existing PSNH Transmission Route

Alternative 4a Projects

- New Transmission Route
- Project in Roadway Corridor
- Underground High-Voltage Direct Current Centerline
- Underground High-Voltage Alternating Current Centerline
- Existing Transmission Line Upgrades
- Project Milepost
- Converter/Substation Location

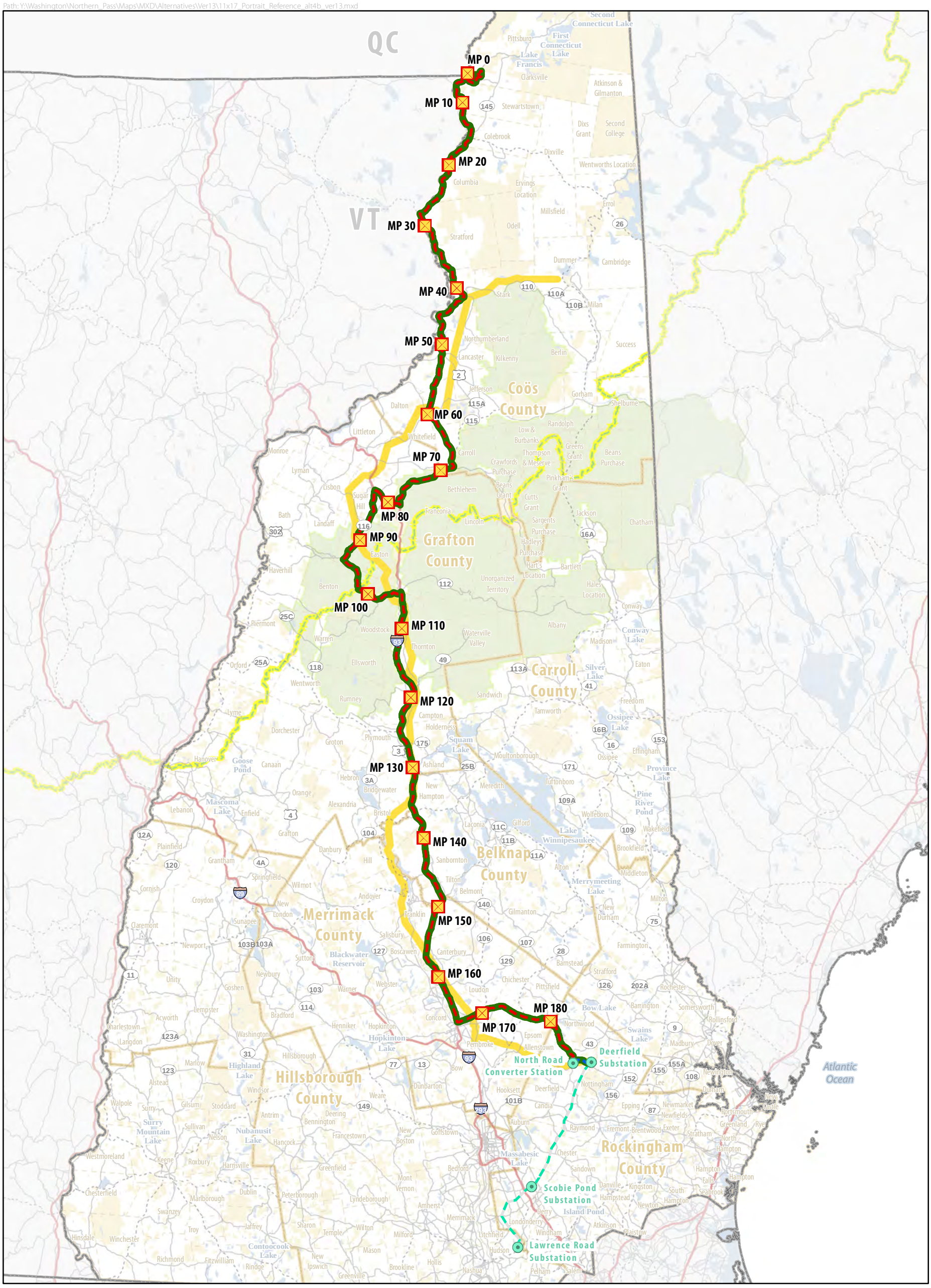
SOURCE: ESRI 2011; GRANIT 2012; Burns and McDonnell 2013; USFS 2012; Ecology and Environment 2013

Map 8:
Alternative 4a - Underground Transmission Cable in Roadway Corridors -
I-93 through Franconia Notch
Northern Pass Transmission Line Project
Environmental Impact Statement

N

SCALE
0 5 10 Miles

Path: Y:\Washington\Northern_Pass\Maps\MXD\Alternatives\Ver13\11x17_Portrait_Reference_alt4b_ver13.mxd



Legend

Existing Conditions

- State Boundary
- County Boundary
- Political Boundary
- Freeway
- Major Road
- Secondary Road
- Appalachian National Scenic Trail
- Waterbody
- NH Conservation Land (WMA, State Forest, Conservation Areas, etc.)
- White Mountain National Forest
- Existing PSNH Transmission Route

Alternative 4b Projects

- New Transmission Route
- Project in Roadway Corridor
- Underground High-Voltage Direct Current Centerline
- Underground High-Voltage Alternating Current Centerline
- Existing Transmission Line Upgrades
- Project Milepost
- Converter/Substation Location

SOURCE: ESRI 2011; GRANIT 2012; Burns and McDonnell 2013; USFS 2012; Ecology and Environment 2013

Map 9:

Alternative 4b - Underground Transmission Cable in Roadway Corridors -

NH Routes 112 and 116 through WMNF

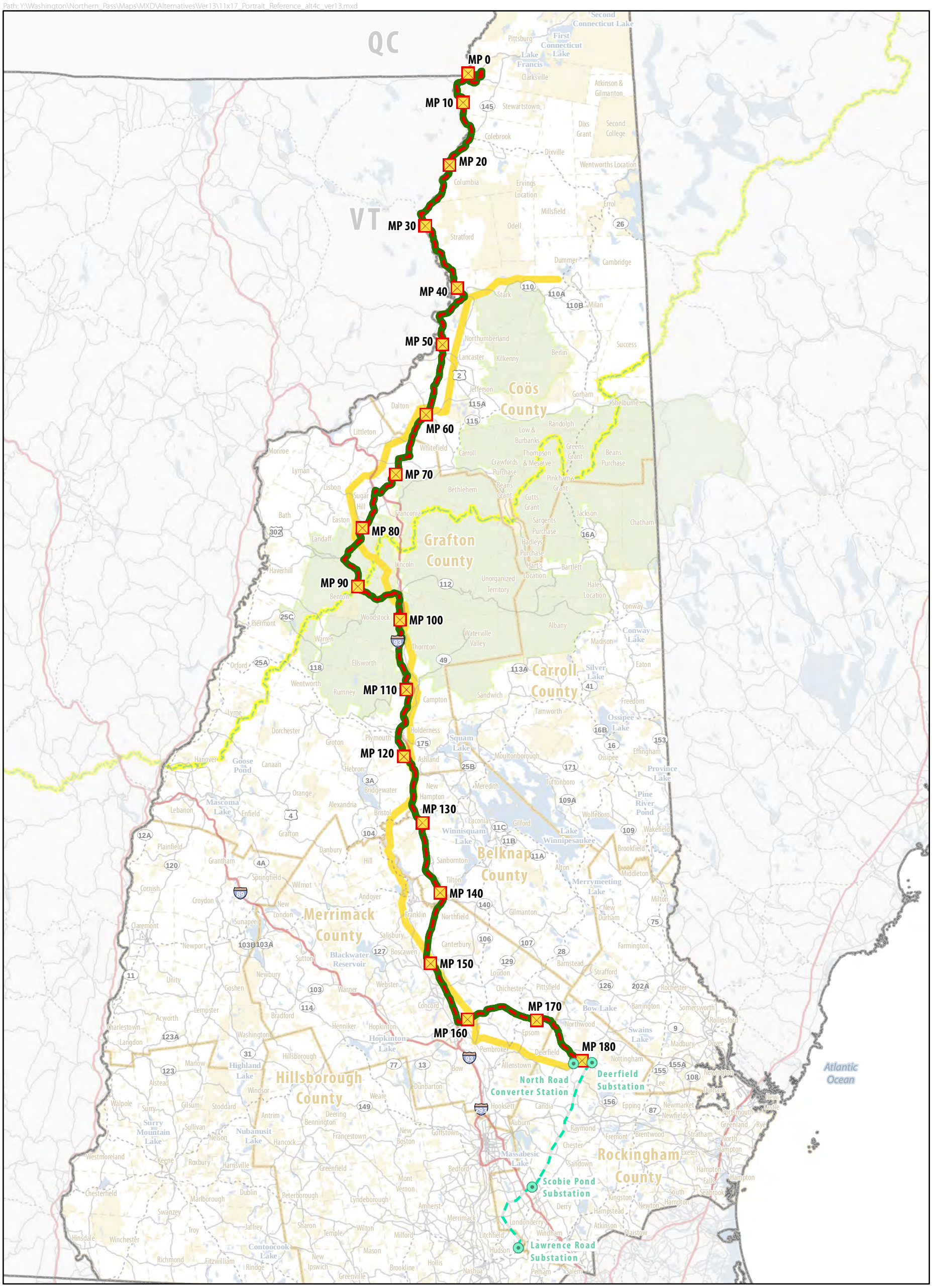
Northern Pass Transmission Line Project
Environmental Impact Statement

N

SCALE

0 5 10 Miles

Path: Y:\Washington\Northern_Pass\Maps\MXD\Alternatives\Ver13\11x17_Portrait_Reference_alt4c_ver13.mxd



Legend

Existing Conditions
- State Boundary
- County Boundary
- Political Boundary
- Freeway
- Major Road
- Secondary Road
- Appalachian National Scenic Trail
- Waterbody
- NH Conservation Land (WMA, State Forest, Conservation Areas, etc.)
- White Mountain National Forest
- Existing PSNH Transmission Route

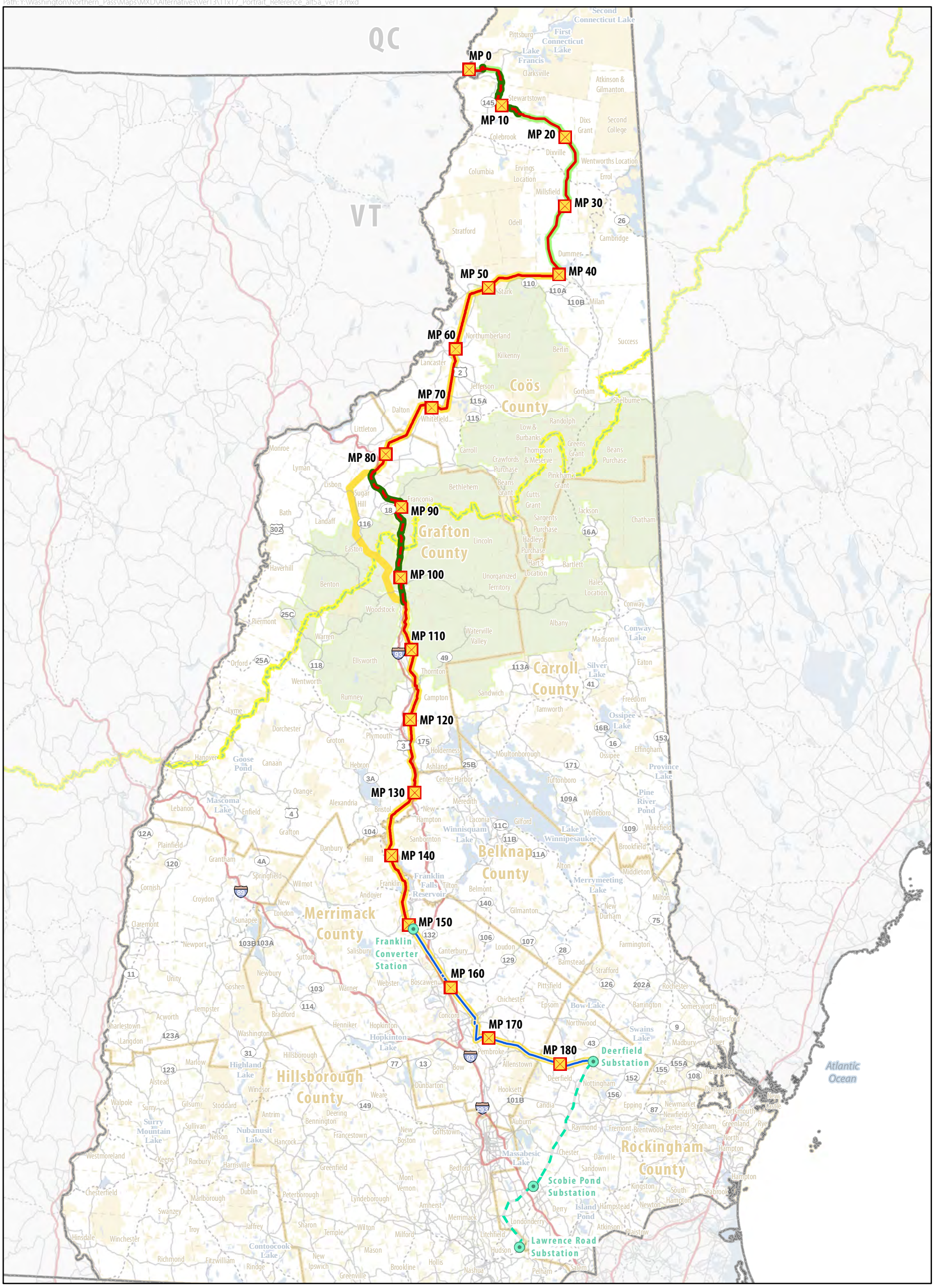
Alternative 4c Projects
- New Transmission Route
- Project in Roadway Corridor
- Underground High-Voltage Direct Current Centerline
- Underground High-Voltage Alternating Current Centerline
- Existing Transmission Line Upgrades
- Project Milepost
- Converter/Substation Location

SOURCE: ESRI 2011; GRANIT 2012; Burns and McDonnell 2013; USFS 2012; Ecology and Environment 2013

Map 10:
Alternative 4c - Underground Transmission Cable in Roadway Corridors -
NH Routes 112 and 116 through WMNF and US Route 3 from North Woodstock to Ashland
Northern Pass Transmission Line Project
Environmental Impact Statement

SCALE
0 5 10 Miles

Path: Y:\Washington\Northern_Pass\Maps\MXD\Alternatives\Ver13\11x17_Portrait_Reference_alt5a_ver13.mxd



Legend

Existing Conditions

- State Boundary
- County Boundary
- Political Boundary
- Freeway
- Major Road
- Secondary Road
- Appalachian National Scenic Trail
- Waterbody
- NH Conservation Land (WMA, State Forest, Conservation Areas, etc.)
- White Mountain National Forest
- Existing PSNH Transmission Route

Alternative 5a Projects

- New Transmission Route
- Project in Roadway Corridor
- Overhead High-Voltage Direct Current Centerline
- Overhead High-Voltage Alternating Current Centerline
- Underground High-Voltage Direct Current Centerline
- Existing Transmission Line Upgrades

- Project Milepost
- Converter/Substation Location

SOURCE: ESRI 2011; GRANIT 2012; Burns and McDonnell 2013; USFS 2012; Ecology and Environment 2013

Map 11:

Alternative 5a - Proposed Action except Underground Transmission Cable along *I-93 through Franconia Notch*

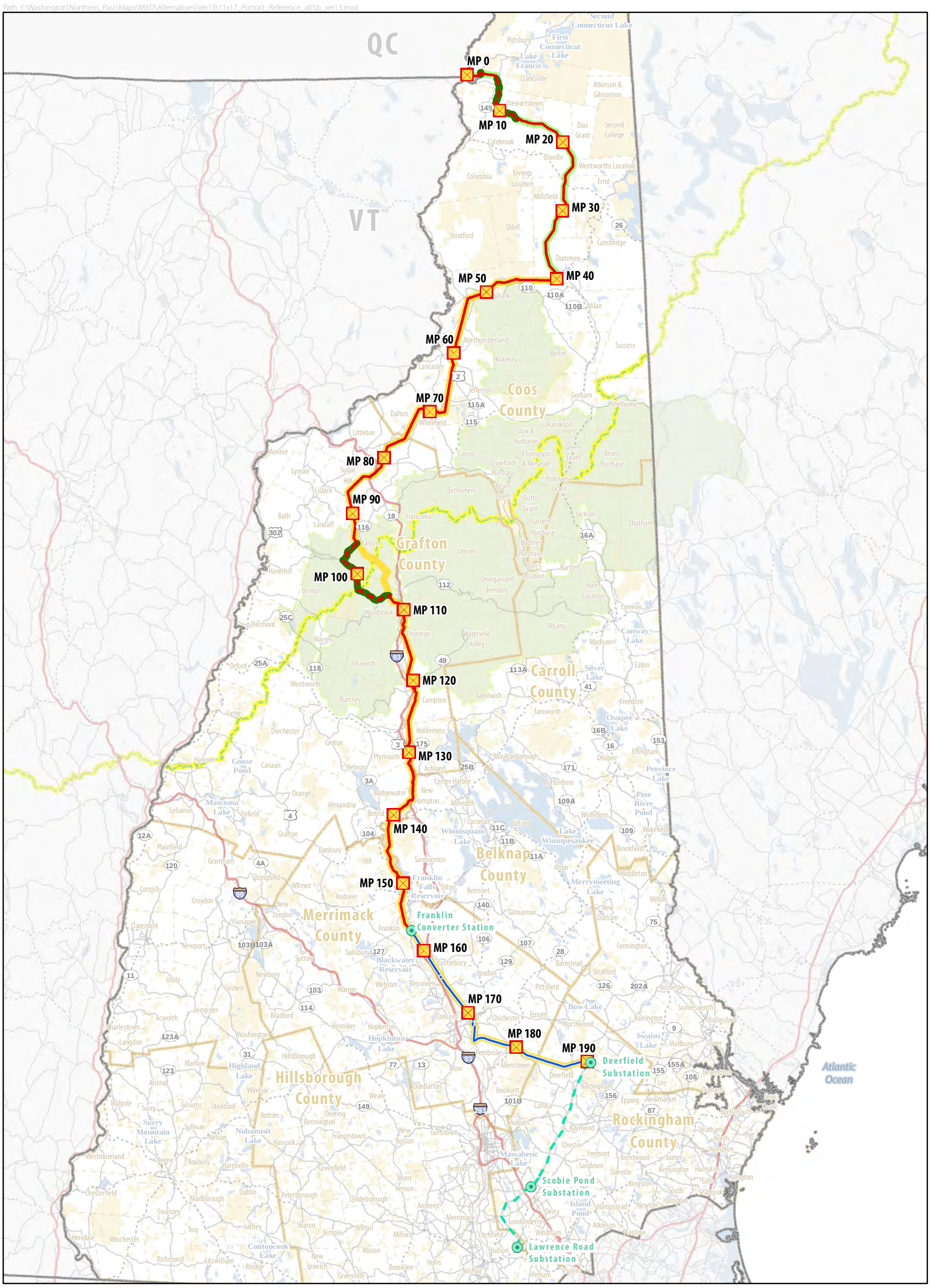
Northern Pass Transmission Line Project
Environmental Impact Statement

N

SCALE

0 5 10 Miles

Path: Y:\Washington\Northern_Pass\Maps\MXD\Alternatives\Ver13\11x17_Portrait_Reference_alt5b_ver13.mxd



Legend

Existing Conditions

- State Boundary
- County Boundary
- Political Boundary
- Freeway
- Major Road
- Secondary Road
- Appalachian National Scenic Trail
- Waterbody
- NH Conservation Land (WMA, State Forest, Conservation Areas, etc.)
- White Mountain National Forest
- Existing PSNH Transmission Route

Alternative 5b Projects

- New Transmission Route
- Project in Roadway Corridor
- Overhead High-Voltage Direct Current Centerline
- Overhead High-Voltage Alternating Current Centerline
- Underground High-Voltage Direct Current Centerline
- Existing Transmission Line Upgrades
- Project Milepost
- Converter/Substation Location

SOURCE: ESRI 2011; GRANIT 2012; Burns and McDonnell 2013; USFS 2012; Ecology and Environment 2013

Map 12:

Alternative 5b - Proposed Action except Underground Transmission Cable along *NH Routes 112 and 116 through WMNF*

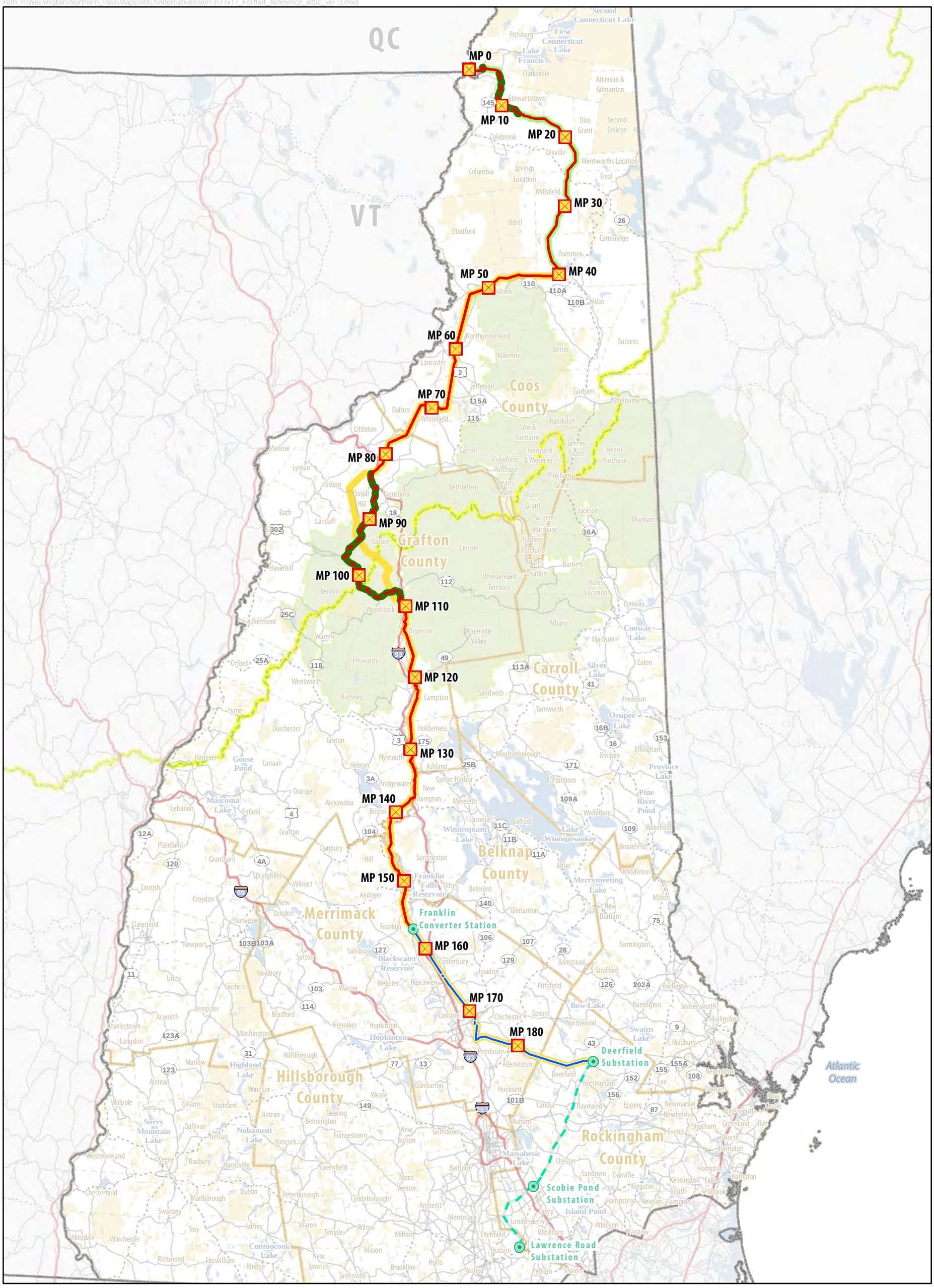
Northern Pass Transmission Line Project
Environmental Impact Statement

N

SCALE

0 5 10 Miles

Path: Y:\Washington\Northern_Pass\Maps\MXD\Alternatives\Ver13\11x17_Portrait_Reference_alt5c_ver13.mxd



Legend

Existing Conditions

- State Boundary
- County Boundary
- Political Boundary
- Freeway
- Major Road
- Secondary Road
- Appalachian National Scenic Trail
- Waterbody
- NH Conservation Land (WMA, State Forest, Conservation Areas, etc.)
- White Mountain National Forest
- Existing PSNH Transmission Route

Alternative 5c Projects

- New Transmission Route
- Project in Roadway Corridor
- Overhead High-Voltage Direct Current Centerline
- Overhead High-Voltage Alternating Current Centerline
- Underground High-Voltage Direct Current Centerline
- Existing Transmission Line Upgrades

- Project Milepost
- Converter/Substation Location

SOURCE: ESRI 2011; GRANIT 2012; Burns and McDonnell 2013; USFS 2012; Ecology and Environment 2013

Map 13:

Alternative 5c - Proposed Action except Underground Transmission Cable along *NH Routes 18, 112 and 116 through Sugar Hill, Franconia, Easton and WMNF*

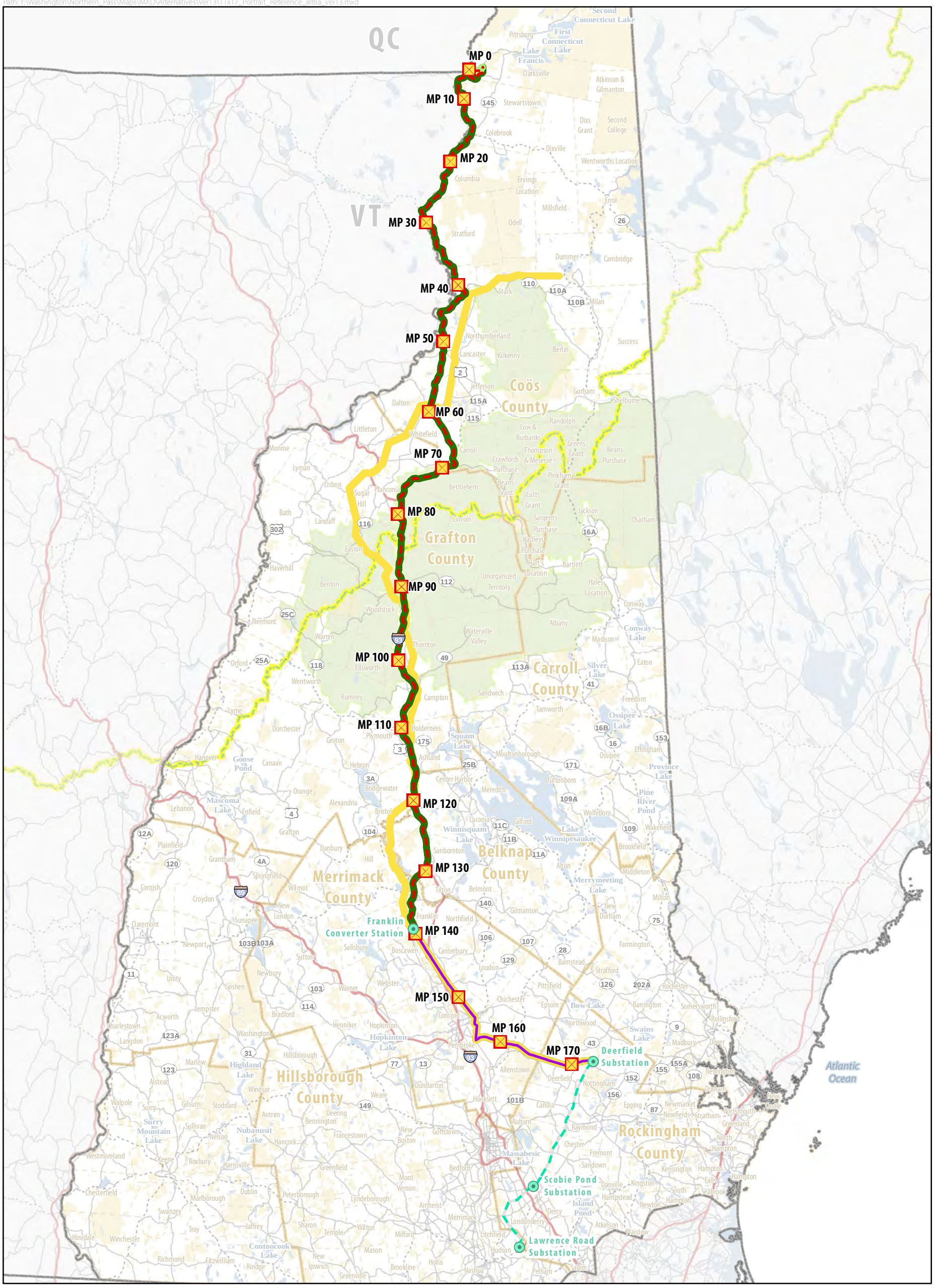
Northern Pass Transmission Line Project
Environmental Impact Statement

N

SCALE

0 5 10 Miles

Path: Y:\Washington\Northern_Pass\Maps\MXD\Alternatives\Ver13\11x17_Portrait_Reference_alt6a_ver13.mxd



Legend

Existing Conditions

- State Boundary
- County Boundary
- Political Boundary
- Freeway
- Major Road
- Secondary Road
- Appalachian National Scenic Trail
- Waterbody
- NH Conservation Land (WMA, State Forest, Conservation Areas, etc.)
- White Mountain National Forest
- Existing PSNH Transmission Route

Alternative 6a Projects

- New Transmission Route
- Project in Roadway Corridor
- Overhead Co-located High-Voltage Alternating Current Centerline
- Underground High-Voltage Direct Current Centerline
- Existing Transmission Line Upgrades
- Project Milepost
- Converter/Substation Location

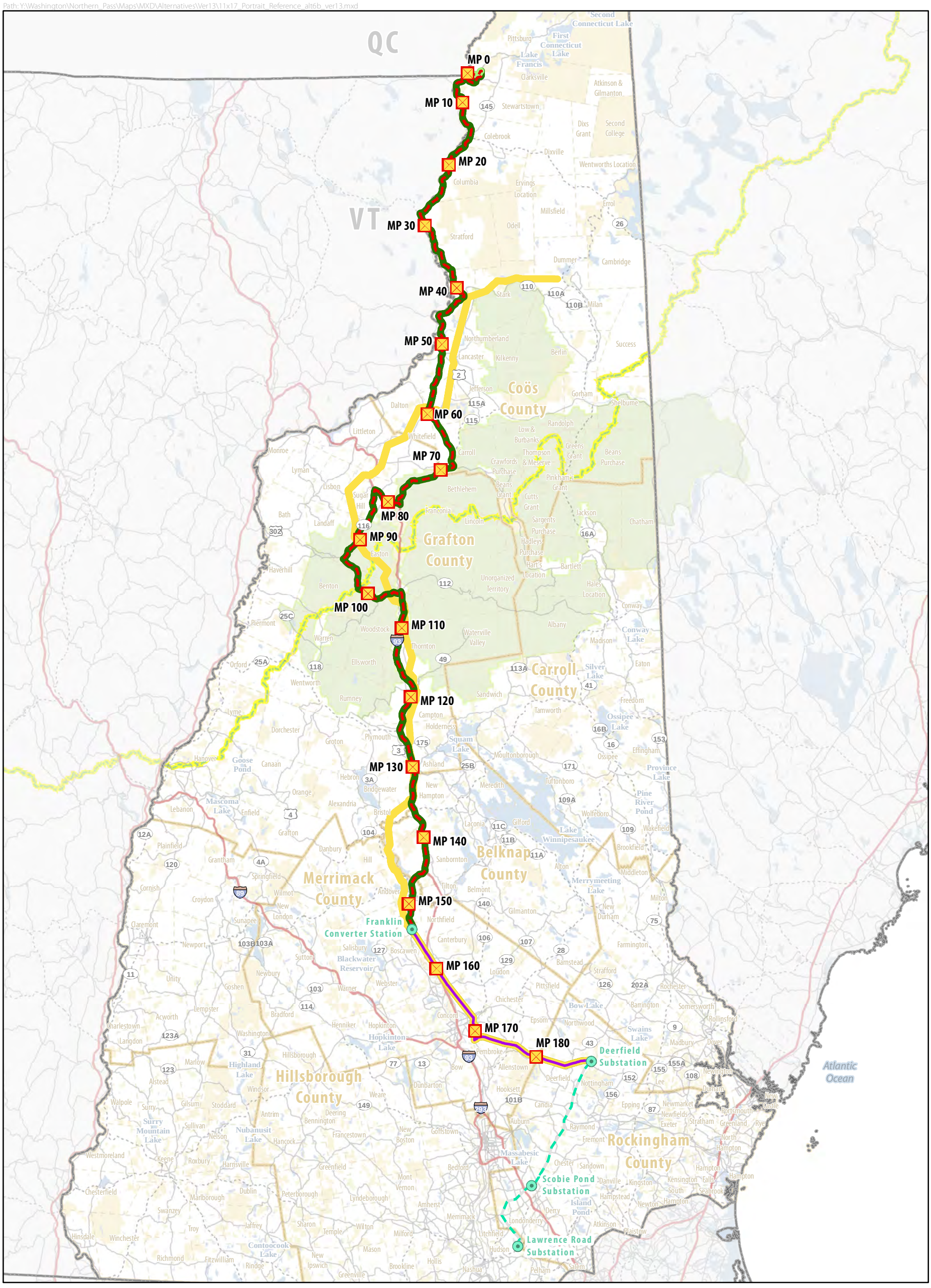
SOURCE: ESRI 2011; GRANIT 2012; Burns and McDonnell 2013; USFS 2012; Ecology and Environment 2013

Map 14:
Alternative 6a - Underground Transmission Cable in Roadway Corridors *(I-93 through Franconia Notch)* and Co-located HVAC
Northern Pass Transmission Line Project
Environmental Impact Statement

N

SCALE
0 5 10 Miles

Path: Y:\Washington\Northern_Pass\Maps\MXD\Alternatives\Ver13\11x17_Portrait_Reference_alt6b_ver13.mxd



Legend

Existing Conditions

- State Boundary
- County Boundary
- Political Boundary
- Freeway
- Major Road
- Secondary Road
- Appalachian National Scenic Trail
- Waterbody
- NH Conservation Land (WMA, State Forest, Conservation Areas, etc.)
- White Mountain National Forest
- Existing PSNH Transmission Route

Alternative 6b Projects

- New Transmission Route
- Project in Roadway Corridor
- Overhead Co-located High-Voltage Alternating Current Centerline
- Underground High-Voltage Direct Current Centerline
- Existing Transmission Line Upgrades
- Project Milepost
- Converter/Substation Location

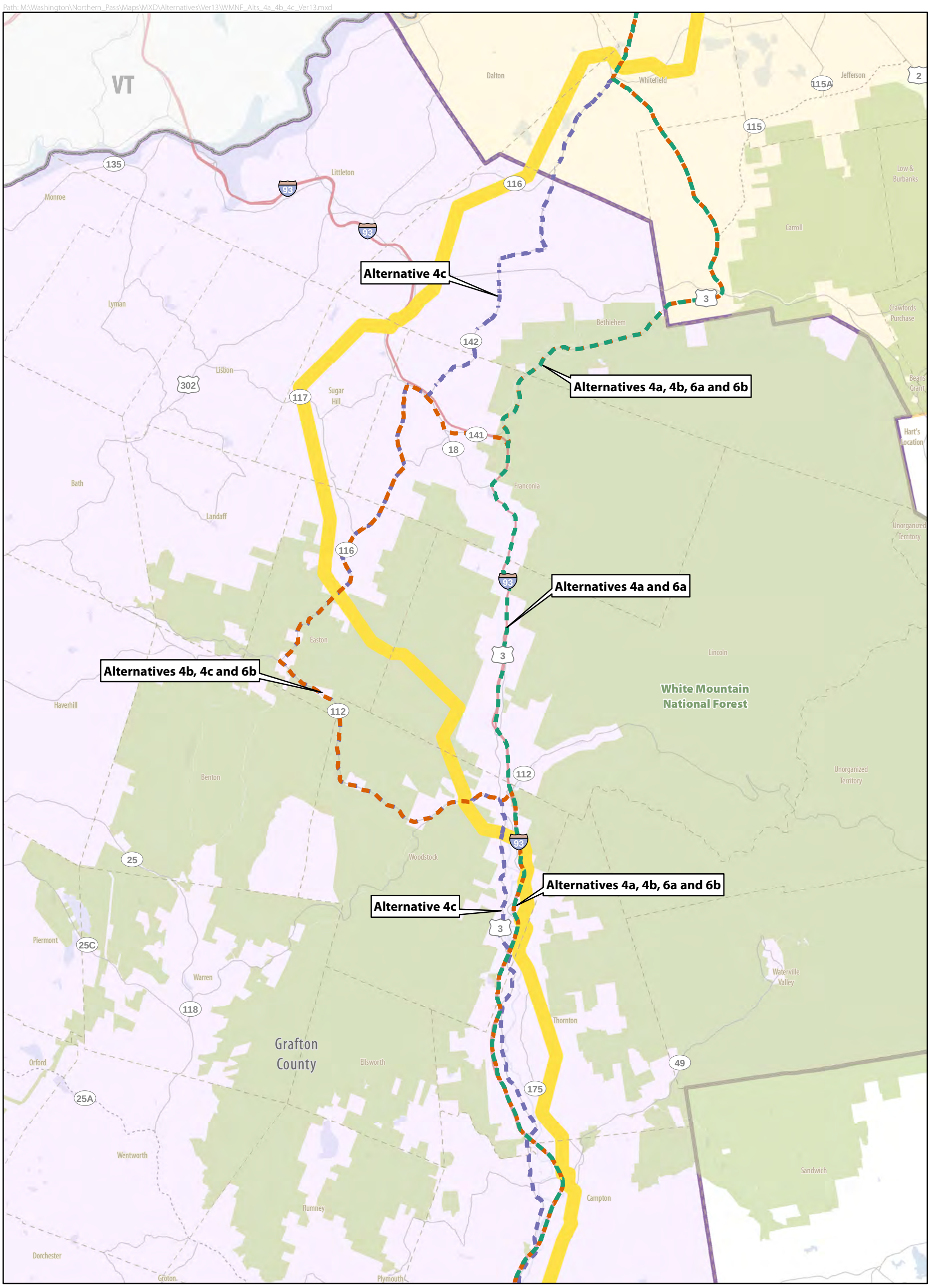
SOURCE: ESRI 2011; GRANIT 2012; Burns and McDonnell 2013; USFS 2012; Ecology and Environment 2013

Map 15:
Alternative 6b - Underground Transmission Cable in Roadway Corridors
(NH Routes 112 and 116 through WMNF)
and Co-located Overhead HVAC
Northern Pass Transmission Line Project
Environmental Impact Statement

N

SCALE
0 5 10 Miles

Path: M:\Washington\Northern_Pass\Maps\MXD\Alternatives\Ver13\WMNF_Alts_4a_4b_4c_Ver13.mxd



Legend

- State Boundary
- Political Boundary
- County Boundary
- Alternatives 4a and 6a
- Alternatives 4b and 6b
- Alternative 4c
- Waterbody
- White Mountain National Forest
- Existing PSNH Transmission Route

Section Boundaries

- Southern Section
- Central Section
- Northern Section

SOURCE: ESRI 2011; Ecology and Environment 2014.

Map 16:

Alternative 4 and 6 Variations in Vicinity of WMNF

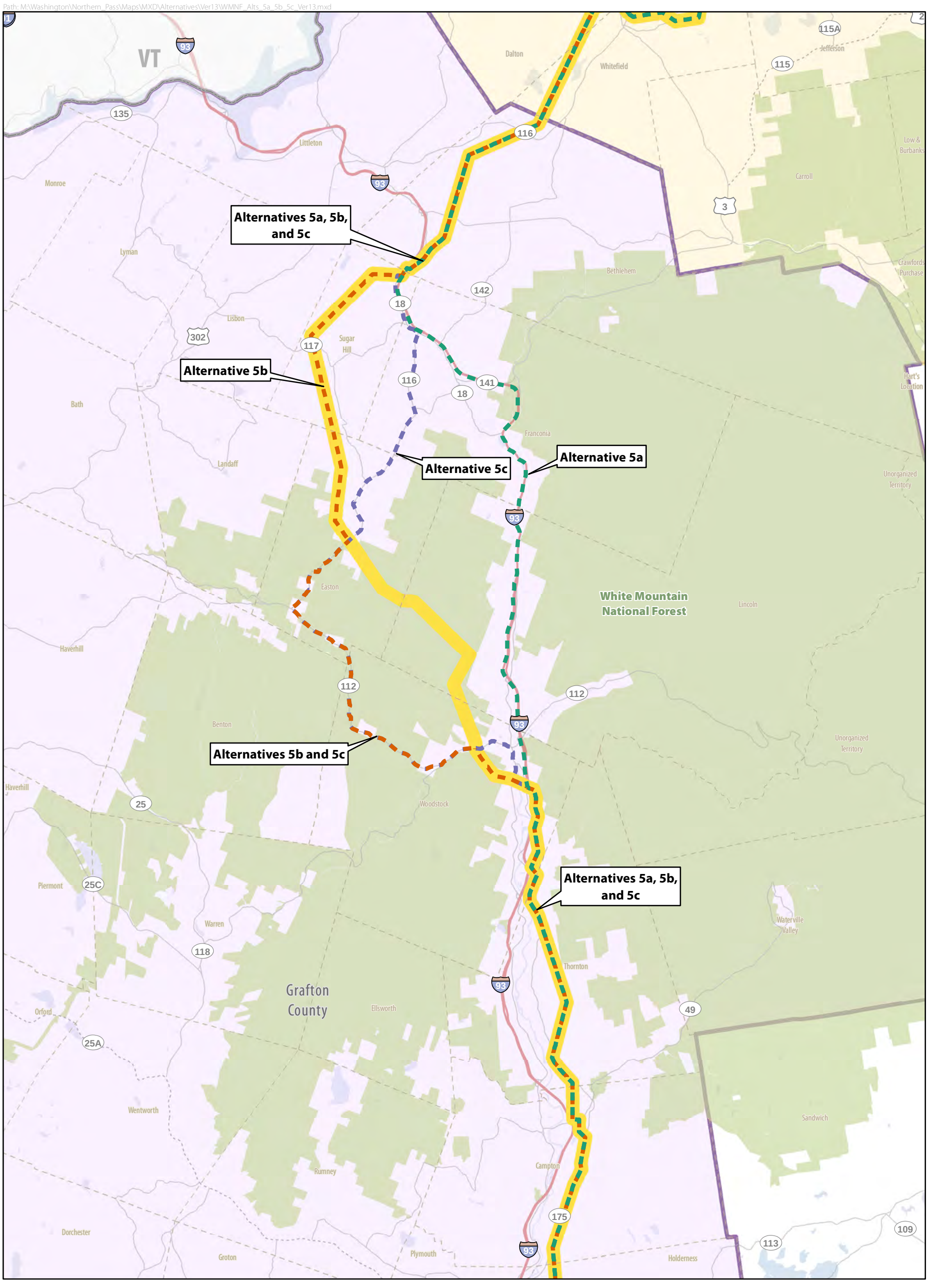
Northern Pass Transmission Line Project
Environmental Impact Statement

N

SCALE

0 1 2 Miles

Path: M:\Washington\Northern_Pass\Maps\MXD\Alternatives\Ver13\WMNF_Alts_5a_5b_5c_Ver13.mxd



Legend

- State Boundary
- Political Boundary
- County Boundary

Alternative Project Alignment

- Alternative 5a
- Alternative 5b
- Alternative 5c

- Waterbody
- White Mountain National Forest
- Existing PSNH Transmission Route

Section Boundaries

- Southern Section
- Central Section
- Northern Section

SOURCE: ESRI 2011; Ecology and Environment 2014.

Map 17:

Alternative 5 Variations in Vicinity of WMNF

Northern Pass Transmission Line Project
Environmental Impact Statement

N

SCALE

0 1 2 Miles

APPENDIX B
SCOPING ISSUE STATEMENTS

APPENDIX B: SCOPING ISSUE STATEMENTS

Through the public scoping process, commenters expressed concerns over a broad range of topics, including, but not limited to, the NEPA process, the federal agencies' purpose and need, the range of alternatives to be considered in the EIS, potential socioeconomic impacts in the region, potential visual impacts, potential impacts to wildlife, and potential impacts to tourism. Listed here is a summary of all issues considered in this draft EIS, including issues analyzed in detail as well as issues that were determined to be outside the scope of this draft EIS or otherwise did not warrant detailed analysis. These issues eliminated from detailed study, including the rationale for not analyzing them in detail, are discussed in **Section B.2**. Issues retained for detailed analysis are discussed in **Chapter 4**.

B.1 ISSUES RETAINED FOR DETAILED ANALYSIS

The following issues are analyzed in detail in this draft EIS. Developed through information received through public as well as internal agency scoping, these issue statements have guided the analysis for this draft EIS.

B.1.1 Visual Resources

- The Project could lead to visual impacts within and throughout the Project corridors' viewsheds on private and public lands, including the WMNF and scenic by-ways. Comments suggest that these impacts could affect tourism, recreation, property values, and the New Hampshire economy.

B.1.2 Socioeconomics

- The Project could impact the local and regional economies in terms of expenditures on electricity, job creation, property values, tax revenues, and construction and ancillary spending.
- The Project could impact existing employment levels and future job creation during both the construction period and subsequent operation/maintenance phase. Comments suggest that the analysis should evaluate the nature of the jobs which would be created in terms of short-term verses permanent, and differentiate among jobs created locally (within New Hampshire) and those which would be imported from out-of-state.
- The Project could change the local/regional electricity generation mix affecting existing generation facilities. Comments suggest that development of the Project could put independent generation facilities out of business and create an energy monopoly or form an unacceptable reliance upon a single generation source, potentially leading to higher energy rates.
- The analysis should determine whether New Hampshire residents, primarily affected by the construction and operation of the Project, would receive electricity provided by the Project. Comments suggest that the analysis should specifically evaluate how, if at all, electricity rates would be affected for New Hampshire residents.
- The Project could provide annual tax benefits to state and local communities throughout New Hampshire. Comments suggest that current and future tax abatement appeals (on behalf of the utility) could affect estimated tax benefits. Comments suggest that the analysis should evaluate, and contrast, the potential increases in taxes paid to the state, and communities, by the proponent (as a function of the value of the construction/operation of the Project) against potential decreases in property tax revenues as a result of potential changes to property values diminished by the Project.
- The visual impacts of the Project could impact property values throughout New Hampshire.

- Comments suggest that if property values are impacted, property tax revenues could be proportionately affected. Comments suggest that this evaluation should specifically acknowledge that New Hampshire does not collect sales taxes, nor does the state have a wage-based income tax, and that property taxes are a substantial portion of state and local government revenue.
- Effects to visual resources resulting from the Project could impact local, regional, and state tourism and resultant impacts to tourism-based businesses, and New Hampshire's tourism-dependent economy.
- The Project could impact tourism related to cultural and historic sites.

B.1.3 Appalachian National Scenic Trail[1]

- The Project could lead to physical impacts on the ANST, which is eligible for the NRHP, and audible, visual, and recreational impacts to the trail users. These impacts could occur in the short-term (during construction) and long-term (operation). Visual resources and recreational user experiences, including the sense of primitiveness and remoteness, could be impacted at numerous locations along the Kinsman and Franconia ridge sections of the ANST through the WMNF.

B.1.4 Recreation

- The Project could physically and/or visibly impact the recreational experience for users across the entire length of the Project on both public and private lands.
- The Project could impact land availability for recreational use (e.g., hiking and snowmobiling) within the Project corridors and current recreational uses of the land.

B.1.5 Health and Safety

- Operation of the Project could produce EMFs that could impact the health of persons, particularly children, spending time near the Project.
- The Project could be susceptible to damage from extreme weather such as wind, ice-loading, and other natural disasters, potentially resulting in line collapse and associated safety concerns.
- The Project could create local safety risks associated with power surges, increased lightning strikes, and line-induced fires.
- The Project could impact the safety of people using recreational trails or otherwise travelling in proximity to the transmission lines through exposure to EMFs and potential infrastructure collapse.
- The Project could impact public health from the use and/or discovery of hazardous materials during construction, operation, and maintenance.
- The Project could create a safety hazard due to proximity to a natural gas pipeline in the Project corridor.
- The Project could create safety concerns for workers during construction and maintenance.
- The Project could cause interference with communication infrastructure and impact the operation of electronic devices.

[1] The analysis of this issue is not specific to a single resource topic so discussion is provided, as appropriate, within the visual resources, recreation, and historic and cultural resources analyses in **Chapter 3** and **Chapter 4**.

- The Project would locate HVDC and HVAC lines within the same transmission route. Comments suggest that this could result in health impacts due to interference between EMFs.

B.1.6 Traffic and Transportation

- The Project could cause road closures, construction-related traffic impacts, and impacts to transportation infrastructure (including air traffic and flight instrumentation proximate to the Concord Airport).

B.1.7 Land Use

- Construction related to the installation and/or relocation of lines within the existing transmission route on the WMNF could be inconsistent with the Forest Plan.
- The Project could impact the characteristics of proximate IRAs.
- The Project could impact the landscape, viewshed, recreation, and conservation values of lands managed by the federal government, the state government, municipal governments, and private land trusts and land held under conservation easement.
- The Project could impact the eligibility and potential future designation of Wild and Scenic Rivers.
- The Project could impact the current or future/planned use of existing private lands, including residential, commercial, and industrial properties.
- The Project could impact public ROWs.

B.1.8 Electricity System Infrastructure[2]

- The Project could affect characteristics of the electricity supply in the New England region.
- The Project could impact existing and future sources of electricity generation within New England.
- The Project could impact regional transmission system reliability.

B.1.9 Noise

- The Project could cause noise impacts related to blasting and other construction activities.
- The Project could result in increased noise levels caused by sound from the HVDC line and associated infrastructure, particularly during inclement weather conditions.

B.1.10 Environmental Justice

- The Project could result in disproportionately high and adverse human health or environmental effects on minority or low-income populations in communities proximate to new facilities.

B.1.11 Air Quality

- The Project could impact regional air quality and emissions due to construction and operation of the Project.
- The Project could impact regional air quality and greenhouse gas emissions as a result of changes in diversity of local/regional electricity generation sources. Comments suggest that the Project

[2] Discussion of this issue is provided within the socioeconomic analysis in **Chapter 3** and **Chapter 4**.

could affect the achievement of emissions reductions goals established in regional agreements and policy.

- The Project could impact greenhouse gas emissions and the ability of the forest to sequester carbon as a result of the clearing of forest and vegetation.

B.1.12 Wildlife

- The Project could impact wildlife and aquatic species, including individuals and the habitat of federally threatened, endangered, and proposed species, USFS management indicator species, and state-listed species.
- The Project could impact areas designated as "critical habitat" in the New Hampshire Wildlife Action Plan.
- The Project could lead to the fragmentation of wildlife habitat and/or the subsequent disruption of terrestrial and aquatic species.
- The Project could impact wildlife habitat, specifically that of hunting game, which are important to the local economy and way of life.

B.1.13 Vegetation

- The Project could lead to the fragmentation of large, contiguous blocks of forest that are important to wildlife, plants, watershed, and recreation.
- The Project could impact federal and state threatened and endangered plant species, and exemplar natural communities along the Project corridor.
- The Project could result in the spread of invasive terrestrial and aquatic plant species as a result of ground disturbance and construction-related activities.
- The Project could impact the ability of habitat, proximate to the Project corridor, to sustain biodiversity.

B.1.14 Water Resources

- The Project could increase erosion and sedimentation sources, reduce stream bank stability, and affect riparian habitat, wetlands, and vernal pools due to ground disturbance associated with the construction and on-going operation.
- The Project could impact domestic wells, municipal water sources, groundwater, source water protection areas, wetlands, and watersheds due to construction and ground disturbing activities.
- The Project could lead to increased in-stream flows and water yield, which may create an increased risk of flooding.
- The Project could impact wetlands due to the potential need for adequate support for towers and subsequently impact the function of wetlands as a natural filter for water resources.

B.1.15 Geology and Soils

- The Project could impact soil stability and quality as a result of construction and vegetation removal. Erosion, water contamination, damage to water crossings, and land form stability issues could result from the construction and maintenance of the Project.

- The Project could lead to erosion and other resource impacts due to the potential construction of additional access and maintenance roads and staging areas for materials and equipment.

B.1.16 Historic and Cultural Resources

- The Project could directly (physically) and/or indirectly (visually or audibly) affect known and previously unidentified cultural resources and historic properties within the area of potential APE for the Project. These effects could occur, in the short-term (during construction) and long-term (operation).

B.2 ISSUES OUTSIDE THE SCOPE OF THIS DRAFT EIS OR DISMISSED FROM FURTHER DETAILED ANALYSIS

The following issues were raised during scoping, but were determined to be outside the scope of this draft EIS or otherwise did not warrant detailed analysis. Rationale for dismissing these issues is provided.

B.2.1 Purpose and Need

- The Project does not meet the qualification requirements of the Renewable Portfolio Standard (RPS) and its goals, as the energy may not be considered "clean" and would not be generated within New Hampshire.

This issue was dismissed from further detailed analysis because the qualification status of the energy potentially delivered by the Project is not relevant to the analysis of the Project's potential environmental impacts.

- DOE's purpose and need statement is too narrowly defined and would not adequately consider a reasonable range of alternatives for analysis.

This issue was dismissed from further detailed analysis because DOE's purpose and need for agency action is to respond to an application for a transmission project and related border crossing in accordance with its responsibilities under DOE's Presidential permit regulations at 10 CFR Part 250.

B.2.2 Socioeconomics

- The Project could impact specific existing energy suppliers and efforts towards renewable energy generation, and non-generation alternatives, resulting in impacts to local competition, impact efforts to reduce energy use, and impact energy rates and reliability.

This issue was dismissed from further detailed analysis because the impact of the Project on individual energy suppliers, renewable energy generation, and non-generation alternatives is beyond the scope of this draft EIS. The socioeconomic analysis contained in this document discusses impacts to the energy economy.

- The Project could impact specific businesses and industries located both near and far from the Project corridor, in particular the recreation, forest products, agriculture, real estate, ski resort, and scenic flight industries.

This issue was dismissed from further detailed analysis because the potential impacts of the Project on the general economy of the region are discussed in the socioeconomic analysis contained in this draft EIS.

- The Project could result in an increased frequency of forest fires. More frequent forest fires would increase the cost of fighting forest fires, and result in economic impacts from lost homes and lost tax revenue on the local economy.

This issue was dismissed from further detailed analysis because the potential economic impacts of forest fire response efforts are unknown and would be highly speculative. The potential for increased risk of forest fire is described in the health and safety analysis contained in this draft EIS.

- Comments stated that the Project could negatively impact property values and the amount of taxes paid by property owners to the government, which could result in increased taxes on other residents.

This issue was dismissed from further detailed analysis because the establishment of specific tax rates depends on numerous variables and it would be impossible to accurately anticipate the potential effect of the Project or predict a specific response which a taxing jurisdiction might make. The potential impacts of the Project on the general economy, property values, and on tax revenues and payments are discussed in the socioeconomic analysis contained in this draft EIS.

- The Project could temporarily increase tax revenues, which could reduce funding from the state and federal governments even after local revenues are gone.

This issue was dismissed from further detailed analysis because it is not possible to predict future tax rates and therefore impossible to accurately predict any effect the Project could potentially have on such tax rates. The potential impacts of the Project on the general economy and on tax revenues and payments are discussed in the socioeconomic analysis contained in this draft EIS.

B.2.3 Land Use

- The Project could lead to loss of property value, which may not adequately be compensated by the Applicant.

This issue was dismissed from further detailed analysis because any compensation programs of the Applicant are beyond the scope of this draft EIS. The potential impact of the Project on residential property values is analyzed in the socioeconomic analysis contained in this draft EIS.

B.2.4 Wildlife

- The Project could require the use of herbicides to maintain a clear Project corridor, which could result in impacts to water resources, vegetation, wildlife habitat, and the health of humans and wildlife near the Project.

This issue was dismissed from further detailed analysis because herbicides are not included in PSNH's vegetation management program. Mechanical means would be employed for vegetation management, and the potential impacts of these activities are disclosed in this draft EIS.

- The Project could impact the health and navigation abilities of wildlife as a result of the potential effects of EMFs and noise from the Project.

This issue was dismissed from further detailed analysis because the best available data do not support these claims or indicate that they warrant further investigation. Studies show that some species of birds use "magnetoreception" for navigation as they migrate over long distances (Mouritsen et al. 2005a). However, magnetoreception is only one of a number of mechanisms that birds use for navigation (Wiltschko et al. 2012a). An evaluation of peer-reviewed scientific literature revealed no studies which document that EMF from transmission lines has any effects on migrating birds. Additionally, the EMF levels produced by the Project would decrease rapidly with distance from the lines. While the magnetic field from the HVDC portion of the line could produce subtle effects on the behavior of animals close to the line, there is no

reason to believe that such effects would be adverse to the animals or affect migration over long distances. The noise analysis and health and safety analysis contained in this draft EIS include discussions of potential effects of EMFs and noise from the Project.

B.2.5 Vegetation

- Heat from the Project's overhead lines and underground cables may impact plant habitat near the Project corridor, and could result in establishment of invasive species.

This issue was dismissed from further detailed analysis because the heat generated by the overhead lines and underground cables would be negligible. Studies of plants in the presence of power transmission lines and cables do not indicate that these exposures have any significant influence on plants or the establishment of invasive species (PSC Wisconsin n.d.; Irle et al. 2011a).

- The Project could inhibit the ability of habitat proximate to the Project corridors to withstand the impacts of climate change.

This issue was dismissed from further detailed analysis because, while there would be some vegetation clearing required for the Project, most clearing would occur adjacent to existing cleared areas and is not anticipated to change the overall characteristics of nearby vegetated habitat. Moreover, the localized impacts of global climate change on particular New Hampshire habitats would be difficult to ascertain and require speculation. Impacts to vegetation resulting from the Project are discussed in the vegetation analysis contained in this draft EIS.

B.2.6 Water Resources

- The Project could impact surface and groundwater resources through the use of herbicides used in construction and maintenance
- The Project could impact drinking and household water supplies and private wells due to the use of herbicides.

These issues were dismissed from further detailed analysis because herbicides are not included in Eversource Energy's vegetation management program. Mechanical means would be employed for vegetation management, and the potential impacts of these activities are disclosed in this draft EIS.

B.2.7 Air Quality

- The Project could impact regional air quality as a result of aerosol pollutants being attracted to the transmission lines.

This issue was dismissed from further detailed analysis. Studies of other HVDC projects have shown that the amount of aerosol pollutants that would be attracted to the transmission lines would be negligible (EPRI 2003a; Exponent, Inc. 2011a). These studies indicate that there is no theoretical basis or empirical data to suggest the ambient air quality would be affected in this manner.

B.2.8 Geology and Soils

- The Project could impact the quality of a landfill cover in the vicinity of Campton, Thornton, and Ellsworth if new transmission towers are built on top of or in the immediate vicinity of the landfill cover.

This issue was dismissed from further detailed analysis because the precise location of individual towers has not yet been determined. Subsequent to the release of this draft EIS, state and local agencies would determine individual tower locations, at which time this issue could be considered.

B.2.9 NEPA Process

- DOE should consider potential biases of data collected by contract teams hired by the Applicant that might subsequently obstruct an open, fair, and impartial NEPA review of the Project.

This issue was dismissed from further detailed analysis because DOE, not the Applicant, selected the contractor which is supporting the DOE's preparation of this draft EIS, including all data collection. The Applicant selected a separate contractor to support the Applicant's permitting efforts with the State of New Hampshire. Disclosure statements indicating that neither the contractor selected by DOE nor any of the sub-consultants have a financial or other interest in the outcome of the Project are included in **Appendix I**. In accordance with 40 CFR 1506.5(c), DOE has determined that the selected contractor and its sub-consultants have no conflict of interest with respect to the preparation of this draft EIS.

B.2.10 Design Criteria/Mitigation Measures

- The transmission line for the Project could be an inefficient design resulting in energy loss.

This issue was dismissed from further detailed analysis. All transmission mediums result in some energy loss. Overhead transmission lines are the most cost effective form of transmission when compared with other forms based on the Project life cycle cost of capital and losses (i.e., lost energy). The Project would be designed according to applicable industry standards and the design would incorporate good utility practices, such that the energy loss would be minimized based on project economics and life cycle costs.

B.2.11 Impacts in Canada.

- Various impacts in Canada should be addressed in the EIS. These include: economic impacts of the Project on Canadian taxpayers, increase in greenhouse gas emissions from the reservoirs used to generate the hydroelectric power, impacts to river ecosystems and the culture of native people in Canada due to the flooding needed for large scale hydropower dams in Canada, and the potential for hydroelectric reservoirs to cause geologic instability and earthquakes.

This issue was dismissed from further detailed analysis because, NEPA does not require an analysis of environmental impacts that occur within another sovereign nation that result from actions approved by that sovereign nation. For that reason, potential environmental impacts in Canada are not addressed in this draft EIS.

This approach is consistent with EO 12114, Environmental Effects Abroad of Major Federal Actions (January 4, 1979), which requires federal agencies to prepare an analysis of potentially significant impacts from a federal action in certain defined circumstances and exempts agencies from preparing analyses in others. Section 2-3[b] of the EO does not require federal agencies to evaluate impacts outside the U.S. when the foreign nation is participating with the U.S. or is otherwise involved in the action. The Government of Québec, through the Ministère du Développement durable, de l'Environnement, de la Faune et des Parcs, would conduct an environmental review for impacts of the Project in Québec as part of its authorization process associated with the facilities to be constructed in the province. The Canadian Government, through the National Energy Board, would also authorize the Project and consider the environmental impacts in its analysis. In both cases, Hydro-Québec would provide an environmental impact study to the authorities with the filings for the Project approval.

During scoping, public comments were received regarding the potential impacts of constructing the new hydroelectric facilities that would provide the power that the Project would transmit. The sources of power that would be transmitted on the Project transmission line are expected to be from the bulk electric transmission system. As such, the source of supply can be any generating station interconnected to the Hydro-Québec TransÉnergie electric transmission system. Among these sources would be the four-station,

1,500-MW Romaine hydroelectric generating complex that is currently under construction by Hydro-Québec in Canada. The development of this hydroelectric facility is independent of, and not connected to, the Project and would not be affected by the possible federal action of issuing a Presidential permit.

B.2.12 Cumulative Impacts

- The Project would not necessarily provide "clean, low carbon" electricity because Hydro-Québec, the energy provider, owns multiple fossil fuel-based generation facilities and cannot guarantee hydropower—only electricity or certain electricity rates in the future.

This issue was dismissed from further detailed analysis because, while the source of power transmitted by the Project can be any generating station interconnected to the Hydro-Québec TransÉnergie electric transmission system, DOE assumed that the power delivered by the Project would be primarily hydropower because approximately 98 percent of Hydro-Québec's energy generation capacity comes from hydropower (NESCOE 2013a). The air quality analysis in this draft EIS discusses potential impacts to regional air quality and carbon emissions. Additionally, the socioeconomic analysis contained in this draft EIS discusses potential impacts to electricity rates resulting from the Project.

- The Project should be considered within a larger context of regional energy needs (i.e., a Programmatic EIS) and should assess the nature of New England's need for Canadian energy imports and the most effective, least impactful way to meet those needs.

This issue was dismissed from further detailed analysis because the analysis of regional energy needs is beyond the scope of this draft EIS. DOE's purpose and need for agency action is to respond to an application for a single transmission project and related border crossing per its responsibilities under DOE's Presidential permit regulations at 10 CFR Part 250. DOE has not been asked to consider one or more applications for a program of projects and has no authority to determine regional energy needs. This draft EIS analyzes the direct, indirect, and cumulative impacts of the Project as a connected action to DOE's proposed federal action under NEPA to issue a Presidential permit for the proposed border crossing. Further, DOE does not have the authority to determine the underlying need for a transmission project within the New England regional transmission system. Regional energy transmission needs and a program of means to meet identified transmission needs within the New England region will be determined by ISO-NE in coordination with the New England states.

APPENDIX C
PROPOSED FOREST PLAN AMENDMENTS

APPENDIX C: PROPOSED FOREST PLAN AMENDMENTS

Forest Plan Amendments would only be required should Alternative 2 – Proposed Action or Alternative 5b be selected.

C.1 USFS DIRECTION FOR AMENDING FOREST PLANS

The USFS requirements for amending forest plans are included in agency regulations and policies. These require that proposed activities be consistent with forest plans and that proposed activities which may be in conflict with the Forest Plan either be denied or modified (so as to be consistent), or that the Forest Plan be amended. The USFS is authorized to implement amendments to forest plans in response to changing needs and opportunities, information identified during project analysis, or the results of monitoring and evaluation. The process to consider Forest Plan Amendments is contained in 36 CFR 219.13 and Forest Service Handbook 1909.12, Chapter 20.

The Forest Plan states, "Adjusting the Forest Plan requires an amendment, and the need for an amendment may result from…Determination by the Forest Supervisor that existing or proposed projects, contracts, etc. are appropriate and necessary, but not consistent with Forest Plan management direction" (USDA Forest Service 2005a).

The Forest Plan also states, "Standards and guidelines are the specific, technical direction for managing resources. A standard is a course of action that must be followed, or a level of attainment that must be reached, to achieve management goals and objectives, and can only be changed through an amendment to the Plan. A guideline also is a required course of action or level of attainment, but permits operational flexibility to respond to variations in conditions. Guidelines can be modified or not implemented, but the rationale for doing so must be documented in a project-level analysis and signed decision" (USDA Forest Service 2005a).

C.2 PROPOSED AMENDMENTS TO THE WMNF LAND AND RESOURCE MANAGEMENT PLAN

The alternatives considered in detail in this draft EIS were reviewed for consistency with the Forest Plan standards and guidelines (see **Appendix F**). Based on a review of the Forest Plan standards and guidelines and Project impacts, Alternative 2 would be inconsistent with four Forest Plan standards: 1) Forest-wide Recreation General Standard S-2, 2) MA 8.3 – Appalachian National Scenic Trail, Recreation Standard S-2, 3) MA 8.3 – Appalachian National Scenic Trail, Scenery Management Standard S-1, and 4) MA 8.3 – Appalachian National Scenic Trail, Scenery Management Standard S-2. Alternative 5b would be inconsistent with one standard: MA 8.3 – Appalachian National Scenic Trail, Scenery Management Standard S-1.

- Forest-wide Recreation General Standard S-2 states: "Current development levels in the backcountry will be maintained or lowered where appropriate." (USDA Forest Service 2005a)
- MA 8.3 – Appalachian National Scenic Trail, Recreation Standard S-2 states: "Management of the AT experience must be compatible with the prescribed recreation experience opportunity class. Lands within this management area should be managed under the semi-primitive non-motorized (SPNM) Recreation Opportunity Spectrum (ROS) class. There are situations where the AT crosses or follows public roads and snowmobile trails, and where developed facilities are present. Current

inconsistencies in this ROS Class, such as Appalachian Mountain Club huts, are acceptable but are managed to minimize impacts on the SPNM experience." (USDA Forest Service 2005a)

- MA 8.3 – Appalachian National Scenic Trail, Scenery Management Standard S-1 states: "The AT is a Concern Level 1 Travelway, and middleground and background areas on National Forest lands seen from the AT must be managed for scenery in accordance with Scenic Integrity Objectives identified through the Scenery Management System." (USDA Forest Service 2005a)
- MA 8.3 – Appalachian National Scenic Trail, Scenery Management Standard S-2 states: "All management activities will meet a Scenic Integrity Objective of High or Very High." (USDA Forest Service 2005a)

All other alternatives would be consistent with these standards, so no amendments would be necessary.

As identified in **Appendix F –** Forest Plan Consistency Analysis, consistency of all alternatives with Forest-wide, Lands – Land Use Authorizations (Special Uses) Standard S-1 and of Alternatives 2 and 5b with MA 8.3 – Appalachian National Scenic Trail, Lands – Special Uses Standard S-3 will be determined through the EIS process and will be documented in the Record of Decision.

C.2.1 Forest-wide, Recreation General Standard S-2

This standard is intended to help the Forest meet the Forest Plan goals and objectives of managing consistent with the ROS framework and minimizing increased development in the backcountry. Alternative 2 would be inconsistent with Forest-wide Recreation General Standard S-2 because the construction of additional, larger towers and lines within the existing transmission corridor would increase the development level in the backcountry and increase inconsistencies in some ROS classes.

Alternative 2 would require a Forest Plan Amendment for Forest-wide, Recreation General Standard S-2. Alternative 2 would site-specifically amend the Forest Plan to indicate that this Project does not need to meet this standard. The recreation impact from Alternative 2 to ROS classifications is disclosed in **Chapter 4**, **Section 4.5.3.2**.

C.2.2 MA 8.3 – Appalachian National Scenic Trail, Recreation Standard S-2

This standard protects the recreation experience of the ANST as it crosses the WMNF. Construction of additional, larger towers and lines within MA 8.3 results in additional inconsistencies in the SPNM ROS class. While existing inconsistencies are accepted, new inconsistencies would be contrary to this standard. Therefore, the Project would be inconsistent with this standard.

Alternative 2 would require a Forest Plan Amendment for MA 8.3 – Appalachian National Scenic Trail, Recreation Standard S-2. Alternative 2 would site-specifically amend the Forest Plan to indicate that this Project does not need to meet this standard. The recreation impact from Alternative 2 to ROS classifications is disclosed in **Chapter 4**, **Section 4.5.3.2**.

C.2.3 MA 8.3 – Appalachian National Scenic Trail, Scenery Management Standard S-1

This standard protects the middleground and background viewshed as seen from the ANST. The Project under Alternatives 2 and 5b would be consistent with the SIO of "Very Low," and inconsistent with all other SIOs. Consequently, the Project would be inconsistent with SIOs, including in some areas that could be visible in the middleground or background from the ANST; therefore, Alternatives 2 and 5b would be inconsistent with this standard.

Alternatives 2 and 5b would require a Forest Plan Amendment for MA 8.3 – Appalachian National Scenic Trail, Scenery Management Standard S-1. Alternatives 2 and 5b would site-specifically amend the Forest Plan to indicate that this Project does not need to meet this standard. The scenery impact from Alternative 2 and 5b is disclosed in **Chapter 4**, **Section 4.5.1.2** and **Section 4.5.1.8.**

C.2.4 MA 8.3 – Appalachian National Scenic Trail, Scenery Management Standard S-2

Alternative 2 would cross the ANST in the existing transmission route where existing PSNH transmission line infrastructure is present. At this specific intersection, the ANST and the Project are within Easement 965 and Forest Plan standards and guidelines do not apply. However, portions of the Project would be located within the MA 8.3 boundary in areas authorized under the SUP; therefore, Project consistency with MA 8.3 standards and guidelines is necessary in those areas.

Alternative 2 would be inconsistent with MA 8.3 – Appalachian National Scenic Trail, Scenery Management Standard S-2 because the Project would not meet a SIO of High or Very High. Alternative 2 would be consistent with a SIO of Very Low.

The Proposed Action would require a Forest Plan Amendment for MA 8.3 – Appalachian National Scenic Trail, Scenery Management Standard S-2. Alternative 2 would site-specifically amend the Forest Plan to indicate that this Project does not need to meet this standard. The visual impact from Alternative 2 to the ANST is disclosed in **Chapter 4**, **Section 4.5.1.2.**

APPENDIX D
CUMULATIVE EFFECTS PROJECTS

APPENDIX D. CUMULATIVE EFFECTS PROJECTS

D.1 INTRODUCTION

This appendix contains a list of all past, present, and reasonably foreseeable future projects considered for cumulative impacts in the draft Northern Pass Transmission Line Project EIS. The analysis of cumulative effects is contained in **Chapter 5** of the draft EIS

D.2 PAST, PRESENT, AND REASONABLY FORESEEABLE FUTURE PROJECTS

Table D-1. Past, Present, and Reasonably Foreseeable Future Projects

Project	Project Location	Project Description	Project Status	Project Area (acres/length)	Resources Potentially Affected
Transportation Projects					
NHDOT Transportation Projects	Project-wide	A database of approximately 6,000 past, present, and reasonably foreseeable future NHDOT projects is available online at: http://gis.dot.nh.gov/projectviewer/. These projects include actions such as road improvements and repair. These projects are considered, at the appropriate spatial and temporal scale, for all resources potentially affected.	Varies	Varies	Health and Safety Traffic and Transportation Noise Historic and Cultural Resources Environmental Justice Air Quality Wildlife Vegetation Water Resources Geology and Soils
Energy Projects					
Granite Reliable Wind Park	Millsfield, NH	A 99-MW wind farm with 33 turbines located on Dixville Peak, Mount Kelsey, Owlhead Mountain, and Fishbrook Ridge.	Constructed in 2011 and currently operating	Varies	Visual Resources Recreation Land Use Historic and Cultural Resources Wildlife
Jericho Power Wind	Berlin, NH	A wind farm consisting of up to 6 wind turbines to be located on the western slope of Jericho Mountain and Mount Forist. The turbines would be between 450 and 500 feet tall.	Approved and construction occurring in 2015	Varies	Visual Resources Recreation Land Use Historic and Cultural Resources Wildlife
Groton Wind Power	Groton, NH	A 48-MW wind farm located on Tenney Mountain and Fletcher Mountain. The project consists of 24, 2.0 MW wind turbines.	Constructed in 2012 and currently operating	4,180 acres	Visual Resources Recreation Land Use Historic and Cultural Resources Wildlife

Table D-1. Past, Present, and Reasonably Foreseeable Future Projects

Project	Project Location	Project Description	Project Status	Project Area (acres/length)	Resources Potentially Affected
Champlain Hudson Power Express	From Canada through VT to NY	A 1,000-MW HVDC transmission line project that will deliver power from Canada to New York City. Transmission cables will be buried underground or underwater for the length of the project.	Approved in 2014 and construction yet to occur	333 miles	Socioeconomics Air Quality
New England Clean Power Link	From Canada to VT	A 1,000-MW HVDC transmission line project that will deliver power from Canada to Vermont. Transmission cables will be buried underground or underwater for the length of the project.	NEPA process started in August 2014 and is currently under review	154 miles	Socioeconomics Air Quality
National Grid/ Anbaric Green Line	ME and MA	A 1000-MW HVDC transmission line project that will deliver power from Maine to Massachusetts. Transmission cables will be buried underground or underwater for the length of the project.	Conceptual	300 miles	Socioeconomics
Northeast Utilities/National Grid AC Plan	Pelham, Hudson, Windham, and Londonderry, MA	New overhead transmission lines in existing ROWs, two new underground cables through several Massachusetts communities, and upgrades to existing lines.	Approved in 2015 and operation expected in 2017	43 miles	Socioeconomics
Tennessee Gas Pipeline Northeast Energy Direct	17 towns in southern NH	A gas pipeline running 80 miles through 17 towns in southern NH, and through MA, CT, NY, and PA. Seventy-two miles in NH would be in an existing PSNH ROW.	Construction and operation expected in 2018	80 miles	Socioeconomics

Table D-1. Past, Present, and Reasonably Foreseeable Future Projects

Project	Project Location	Project Description	Project Status	Project Area (acres/length)	Resources Potentially Affected
Regional Projects					
General Regional/County Growth	Coös, Grafton, Belknap, Merrimack, and Rockingham Counties, NH	General, on-going growth and development that has and will continue to occur in associated counties the Project is within. Population growth results in additional residential and commercial development, development of additional infrastructure and traffic.	On-going	Five county area	Visual Resources Socioeconomics Recreation Traffic and Transportation Land Use Noise Historic and Cultural Resources Air Quality Wildlife Vegetation Water Resources Geology and Soils
Forest Plan	WMNF (Coös and Grafton Counties, NH)	Provides guidance for managing and protecting natural resources and visitors' experiences on the WMNF; sets goals, objectives, and desired future conditions for all lands managed by the WMNF.	Decision authorized in 2005 and implementation/construction is on-going	750,852 acres	Visual Resources Recreation Land Use Noise Historic and Cultural Resources Air Quality Wildlife Vegetation Water Resources
Miscellaneous Projects					
City of Franklin Brownfield Project – Former Guay's Garage	Franklin, NH	Cleanup of hazardous materials located on the property of the former Guay's Garage on South Main Street in Franklin, NH.	Completed in 2013	2.4 acres	Health and Safety Water Resources

APPENDIX E
KEY OBSERVATION POINT VISUAL SIMULATIONS

APPENDIX E: KEY OBSERVATION POINT (KOP) VISUAL SIMULATIONS

The visual simulations for 15 key observation points (KOPs) are presented here to represent how the Project might appear after approximately five growing seasons. Each KOP is identified by a code that is composed of two letters representing the town where the viewpoint is located and a number representing its location within the town. After the number, a sheet designated with the lower case "a" documents the viewpoint and simulation attributes. The sheet designated with a lower case "b" shows the existing visual condition; "c" represents the Proposed Action's visual condition, and "d" represents another alternative, as indicated. The KOPs are arranged alphabetically in this appendix and their locations are shown on Map E-1.

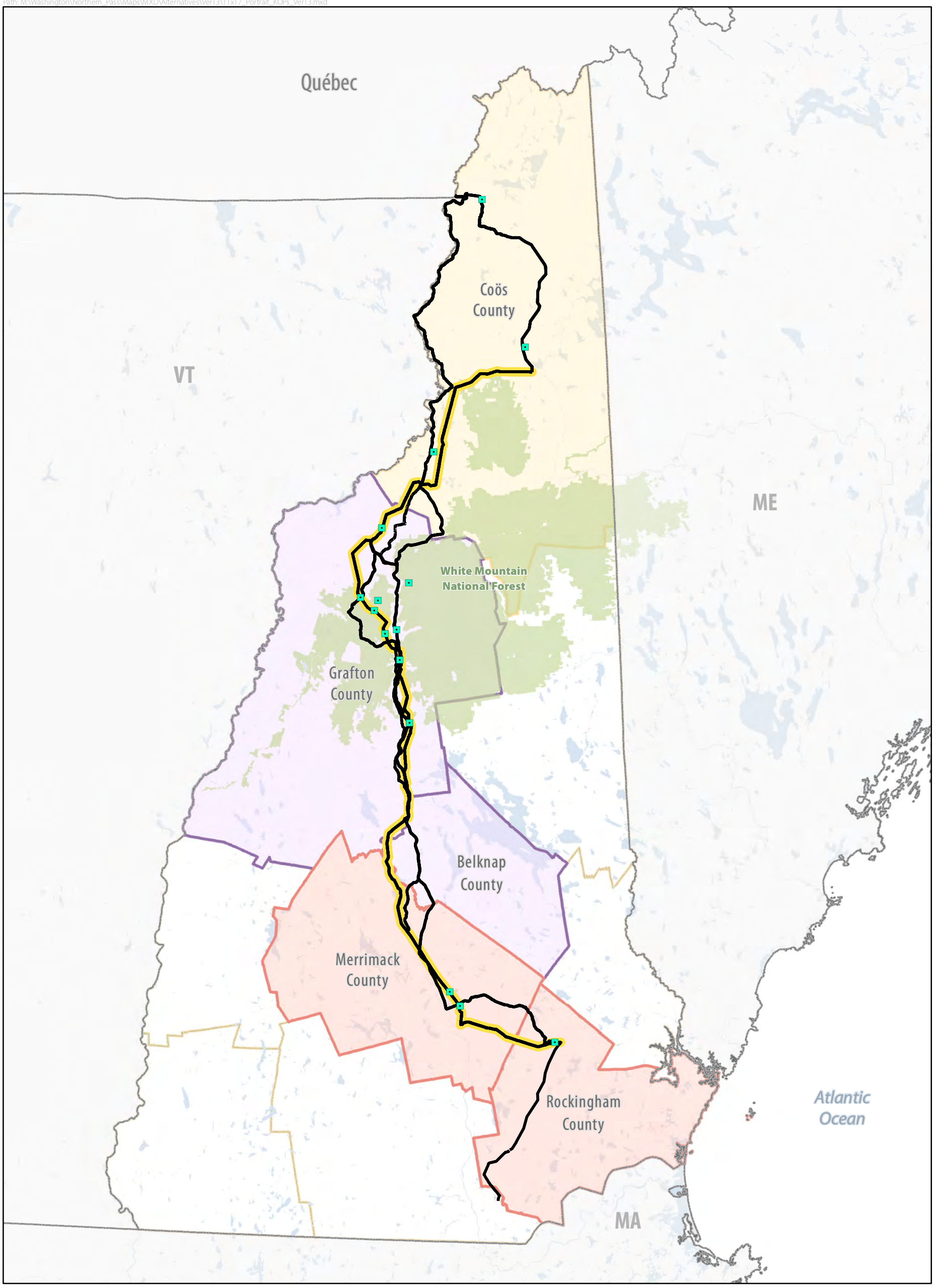
Additional information about the visual simulations and KOPs is available on the EIS website (http://www.northernpasseis.us/library/draft-eis/visual-impact-assessment), and in the Visual Impact Assessment (http://www.northernpasseis.us/library/draft-eis/technical-reports).

KOP selection. These 15 KOPs represent the geographic distribution and landscape diversity of views toward the Project. They were selected from 65 photographic simulations prepared for the visual impact assessment to represent impacted views from a range of distances and landscape contexts, with some emphasis placed on designated scenic resources. These viewpoints were selected from among more than a thousand viewpoints documented photographically and with systematic field observations during both leaf-on and leaf-off conditions. In general, the contrast of lattice structures with green leaf-on conditions is higher than with the grayer leaf-off conditions. However, when there is snow cover, the transmission route becomes more apparent from greater distances. Simulation photographs were selected to represent conditions with greater visual impact.

Limitations to simulation veracity. Simulations use the best available information as of March 2014 and represent the visual condition after approximately five growing seasons. If the Northern Pass Transmission Project specifications change, the visual conditions may be different.

Simulation viewing notes. The simulation is properly printed on an 11-by-17 inch sheet at actual size. If viewed on a computer monitor, use the highest screen resolution. The simulated image is at the proper perspective when viewed at 23.5 inches from the eye, or at a distance of approximately twice the image height.

Path: M:\Washington\Northern_Pass\Maps\MXD\Alternatives\Ver13\11x17_Portrait_KOPs_Ver13.mxd



Legend

- Key Observation Point
- State Boundary
- County Boundary
- Alternative Project Alignment
- Waterbody
- White Mountain National Forest

Section Boundaries

- Northern Section
- Central Section
- Southern Section
- Existing PSNH Transmission Route

Map E-1:
Key Observation Point Locations
Northern Pass Transmission Line Project
Environmental Impact Statement

N

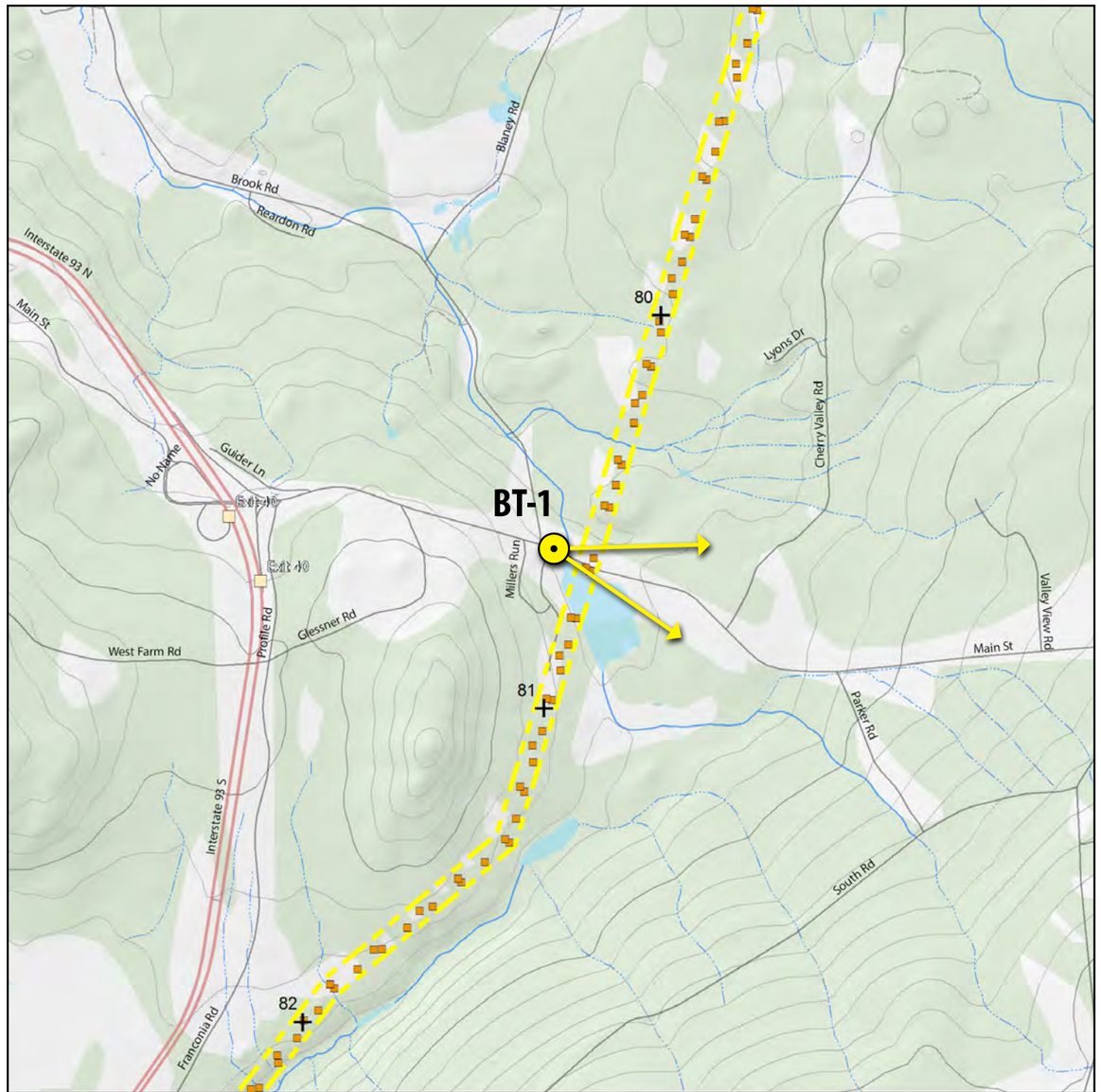
SCALE

0 5 10 Miles

SOURCE: ESRI 2011; Ecology and Environment 2014.

US Route 302 at Rocks Edge Road - Bethlehem, New Hampshire

Viewpoint BT-1a



Legend

- Viewpoint
- Existing PSNH ROW
- Proposed New Northern Pass ROW
- Freeway
- Major Road
- Secondary Road
- Hiking Trails
- Mountain Peaks/Natural Features
- Alternative 2 Structure
- Alternative 2 Mile Marker

SOURCE: ESRI 2011; GRANIT 2012; Burns and McDonnell 2013; USFS 2012; Ecology and Environment 2013, DeLorme Data, T.J. Boyle Associates

0 0.25 0.5 Miles

Figure 1
Viewpoint Location Map
Northern Pass Transmission Line Project
Environmental Impact Statement

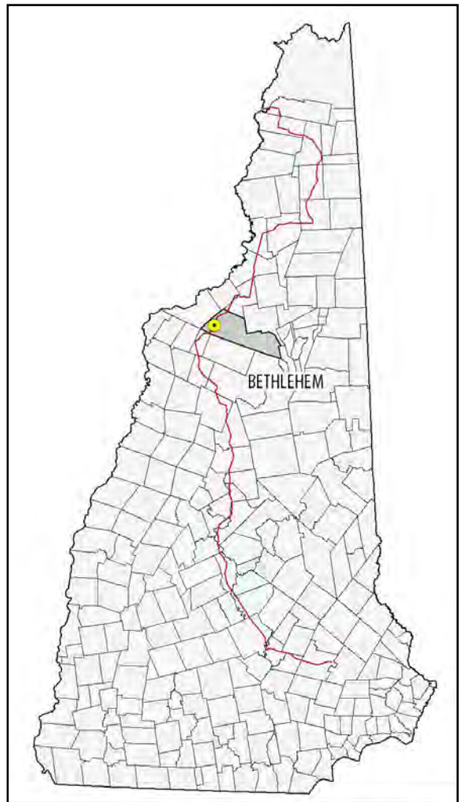


Figure 2 - Viewpoint Location
SCALE
0 20 40 Miles

Figure 3 - Aerial Context
SCALE
0 200 400 600 Feet

General Information

Base Photograph
Date: 03-18-2013
Time: 1:29 pm
Meteorological Visibility:
Plymouth Airport - 10 miles
Image Size: 4,928 x 3,264 pixels

Camera Properties
Camera Make/Model: Nikon D7000
Sensor Dimensions: 23.6 mm x 15.6 mm
Lens Make/Model: Nikkor DX AF-S 35 mm
Lens Focal Length: 35 mm
35 mm Equivalent Focal Length: 52.5 mm
Approximate Angles of View:
37° wide and 25° high
Camera Height: 1.5 meters (5 feet)

Viewpoint Information
Location: US Route 302, Bethlehem
Latitude/Longitude: 44.282812°, -71.728359°
Viewpoint Elevation: 1,097 feet
Viewpoint Name: BT-1
Orientation: Looking Southeast
Looking toward Alternative 2 Mile Markers: 80-81

Simulation Viewing Notes
The simulation is properly printed on an 11-by-17 inches sheet at actual size. If viewed on a computer monitor, use the highest screen resolution. The simulated image is at the proper perspective when viewed at 23.5 inches from the eye, or at a distance of approx. twice the image height.

Project Design
The simulations are based on the best information available in March 2014.

Alternatives Simulated from this Viewpoint

Alternative 1 - No Action

Transmission Line Information
Distance to Nearest Visible Structure: 579 feet
Number of Visible Existing Structures: 2

Alternative 2 - Proposed Action

Transmission Line Information
Distance to Nearest Visible Structure: 509 feet
Number of Visible Transmission Structures: 3

Alternative 3

Transmission Line Information
The transmission line is buried in this view and there is no discernible visual change from the Existing Condition.

Alternatives 4a, 4b and 4c

Transmission Line Information
The Project is not visible from this viewpoint.

Alternatives 5a, 5b and 5c

Transmission Line Information
There is no visible change from the Proposed Action.

Alternatives 6a and 6b

Transmission Line Information
The Project is not visible from this viewpoint.

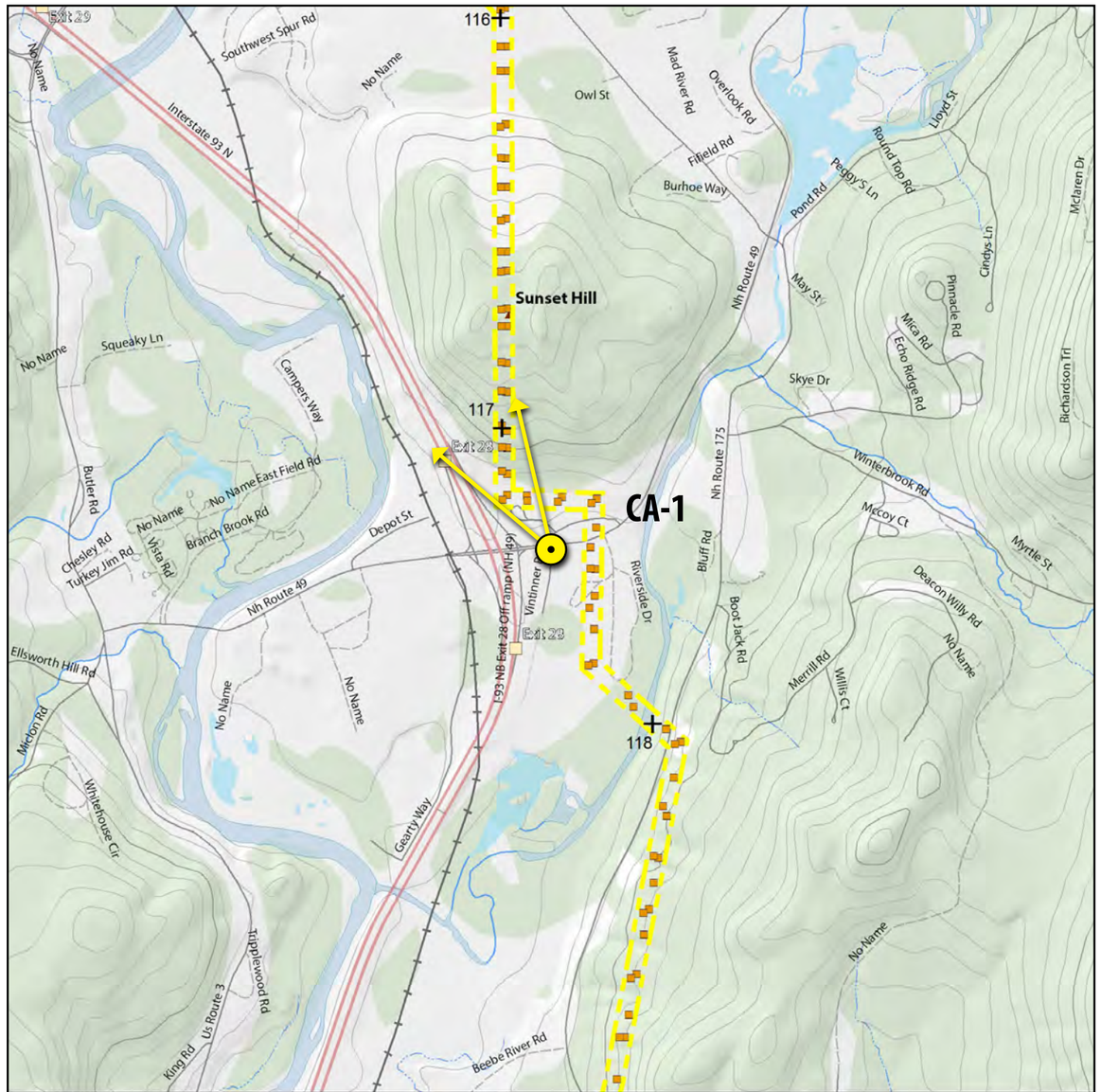
Alternatives 2, 5a, 5b and 5c
Simulated Conditions

Northern Pass Transmission Line Project Environmental Impact Statement
US Route 302 at Rocks Edge Road - Bethlehem, New Hampshire

BT-1c

Vintinner Road at NH Route 49 - Campton, New Hampshire

Viewpoint CA-1a



Legend

- Viewpoint
- Existing PSNH ROW
- Proposed New Northern Pass ROW
- Freeway
- Major Road
- Secondary Road
- Hiking Trails
- Mountain Peaks/Natural Features
- Alternative 2 Structure
- Alternative 2 Mile Marker

SOURCE: ESRI 2011; GRANIT 2012; Burns and McDonnell 2013; USFS 2012; Ecology and Environment 2013, DeLorme Data, T.J. Boyle Associates

0 0.25 0.5 Miles

Figure 1
Viewpoint Location Map
Northern Pass Transmission Line Project
Environmental Impact Statement

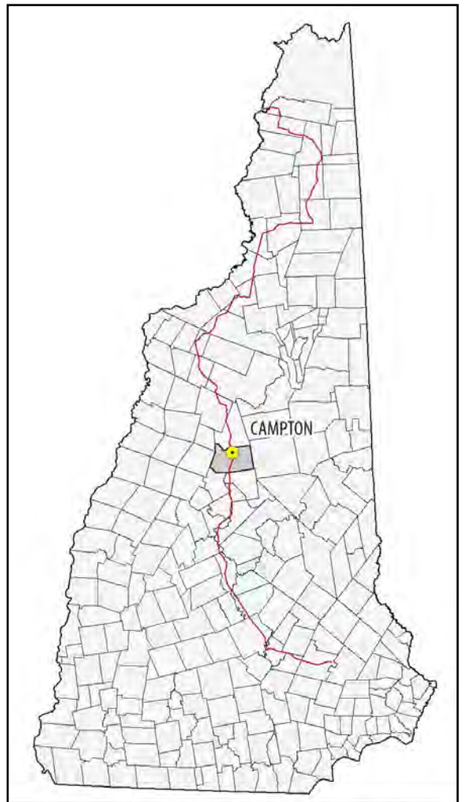


Figure 2 - Viewpoint Location
SCALE
0 20 40 60 Miles

Figure 3 - Aerial Context
SCALE
0 200 400 600 Feet

General Information

Base Photograph
Date: 11-14-2013
Time: 2:22 pm
Meteorological Visibility:
Plymouth Airport - 10 miles
Image Size: 4,928 x 3,264 pixels

Camera Properties
Camera Make/Model: Nikon D7000
Sensor Dimensions: 23.6 mm x 15.6 mm
Lens Make/Model: Nikkor DX AF-S 35 mm
Lens Focal Length: 35 mm
35 mm Equivalent Focal Length: 52.5 mm
Approximate Angles of View:
37° wide and 25° high
Camera Height: 1.5 meters (5 feet)

Viewpoint Information
Location: Vintinner Road at NH Route 49, Campton
Latitude/Longitude: 43.8508092°, -71.643359°
Viewpoint Elevation: 591 feet
Viewpoint Name: CA-1
Orientation: Looking Northwest
Looking toward Alternative 2 Mile Marker: 117

Simulation Viewing Notes
The simulation is properly printed on an 11-by-17 inches sheet at actual size. If viewed on a computer monitor, use the highest screen resolution. The simulated image is at the proper perspective when viewed at 23.5 inches from the eye, or at a distance of approx. twice the image height.

Project Design
The simulations are based on the best information available in March 2014.

Alternatives Simulated from this Viewpoint

Alternative 1 - No Action
Transmission Line Information
Distance to Nearest Visible Structure: 758 feet
Number of Visible Existing Structures: 4

Alternative 2 - Proposed Action
Transmission Line Information
Distance to Nearest Visible Structure: 649 feet
Number of Visible Transmission Structures: 12

Alternative 3
Transmission Line Information
The transmission line is buried in this view and there is no discernible visual change from the Existing Condition.

Alternatives 4a, 4b and 4c
Transmission Line Information
The Project is not visible from this viewpoint.

Alternatives 5a, 5b and 5c
Transmission Line Information
There is no visible change from the Proposed Action.

Alternatives 6a and 6b
Transmission Line Information
The Project is not visible from this viewpoint.

Alternatives 1, 3, 4a, 4b, 4c, 6a and 6b
Existing Conditions

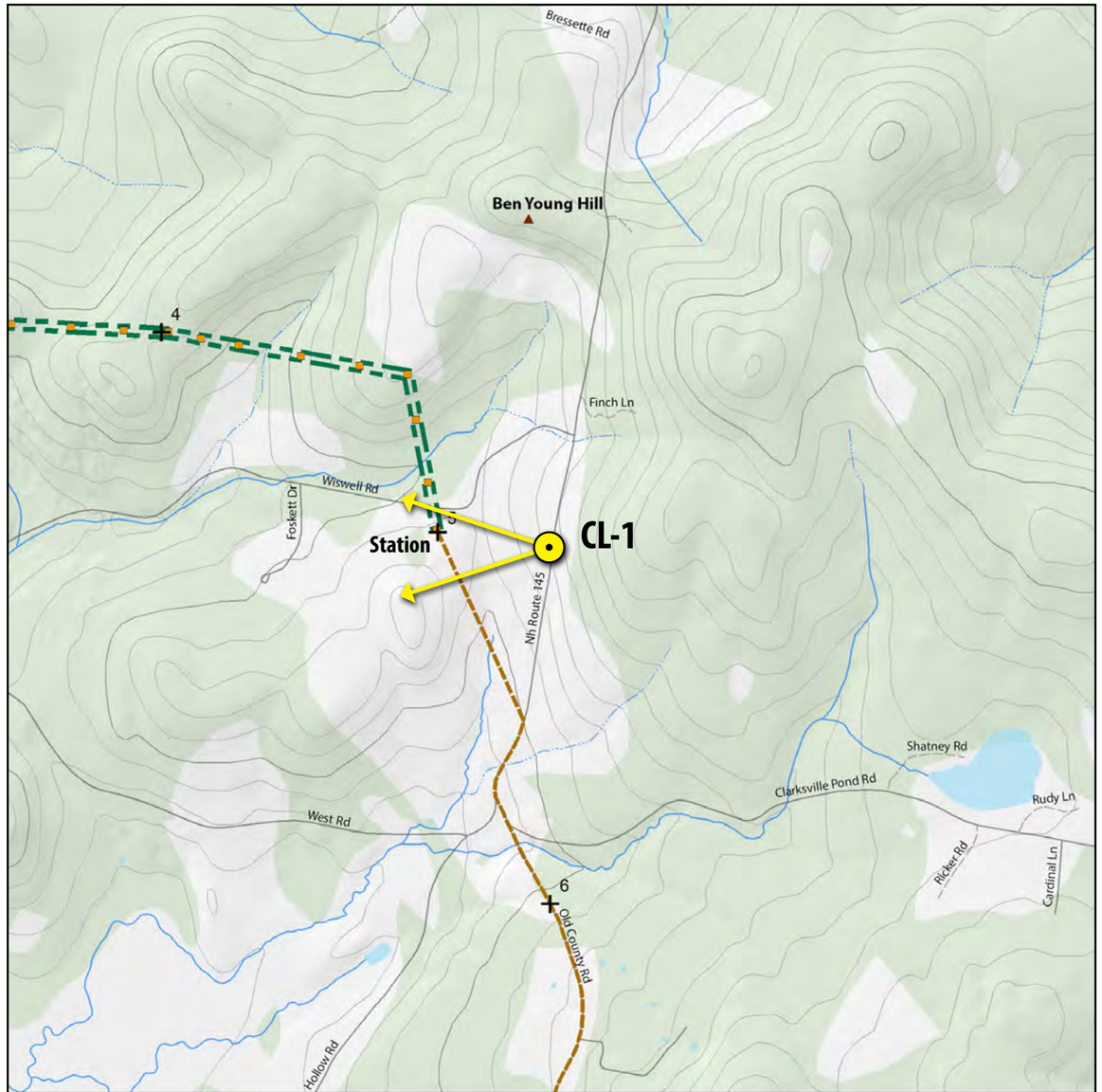
Alternatives 2, 5a, 5b and 5c
Simulated Conditions

Northern Pass Transmission Line Project Environmental Impact Statement
Vintinner Road at NH Route 49 - Campton, New Hampshire

CA-1c

NH Route 145 Looking West - Clarksville, New Hampshire

Viewpoint CL-1a



Legend

- Viewpoint
- Existing PSNH ROW
- Proposed New Northern Pass ROW
- Proposed Alternative 2 Burial
- Freeway
- Major Road
- Secondary Road
- Hiking Trails
- Mountain Peaks/Natural Features
- Alternative 2 Structure
- Alternative 2 Mile Marker

SOURCE: ESRI 2011; GRANIT 2012; Burns and McDonnell 2013; USFS 2012; Ecology and Environment 2013, DeLorme Data, T.J. Boyle Associates

0 0.25 0.5 Miles

Figure 1
Viewpoint Location Map
Northern Pass Transmission Line Project
Environmental Impact Statement

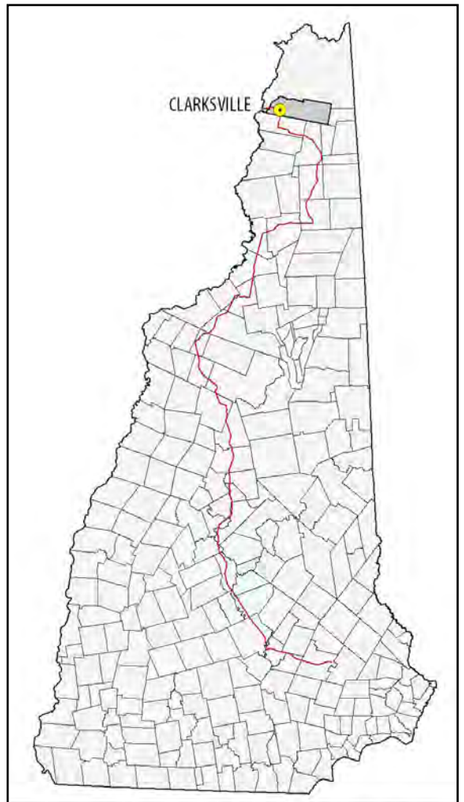


Figure 2 - Viewpoint Location
SCALE
0 20 40 60 Miles

Figure 3 - Aerial Context
SCALE
0 200 400 600 Feet

General Information

Base Photograph
Date: 09-26-2013
Time: 3:13 pm
Meteorological Visibility:
Berlin Airport - 10 miles
Image Size: 4,928 x 3,264 pixels

Camera Properties
Camera Make/Model: Nikon D7000
Sensor Dimensions: 23.6 mm x 15.6 mm
Lens Make/Model: Nikkor DX AF-S 35 mm
Lens Focal Length: 35 mm
35 mm Equivalent Focal Length: 52.5 mm
Approximate Angles of View:
37° wide and 25° high
Camera Height: 1.5 meters (5 feet)

Viewpoint Information
Location: NH Route 145 Looking West, Clarksville
Latitude/Longitude: 45.009515°, -71.6415941°
Viewpoint Elevation: 1,937 feet
Viewpoint Name: CL-1
Orientation: Looking West
Looking toward Alternative 2 Mile Marker: 5

Simulation Viewing Notes
The simulation is properly printed on an 11-by-17 inches sheet at actual size. If viewed on a computer monitor, use the highest screen resolution. The simulated image is at the proper perspective when viewed at 23.5 inches from the eye, or at a distance of approx. twice the image height.

Project Design
The simulations are based on the best information available in March 2014.

Alternatives Simulated from this Viewpoint

Alternative 1 - No Action
Transmission Line Information
Distance to Nearest Visible Structure: 0 feet
Number of Visible Existing Structures: 0

Alternative 2 - Proposed Action
Transmission Line Information
Distance to Nearest Visible Structure: 1,450 feet
Number of Visible Transmission Structures: 5

Alternative 3
Transmission Line Information
The transmission line is buried in this view and vegetation clearing in the ROW is discernible.

Alternatives 4a, 4b and 4c
Transmission Line Information
The Project is not visible from this viewpoint.

Alternatives 5a, 5b and 5c
Transmission Line Information
There is no visible change from the Proposed Action.

Alternatives 6a and 6b
Transmission Line Information
The Project is not visible from this viewpoint.

Northern Pass Transmission Line Project Environmental Impact Statement
NH Route 145 Looking West - Clarksville, New Hampshire

CL-1b

Alternatives 1, 4a, 4b, 4c, 6a and 6b
Existing Conditions

Alternatives 2, 5a, 5b and 5c
Simulated Conditions

Northern Pass Transmission Line Project Environmental Impact Statement
NH Route 145 Looking West - Clarksville, New Hampshire

CL-1c

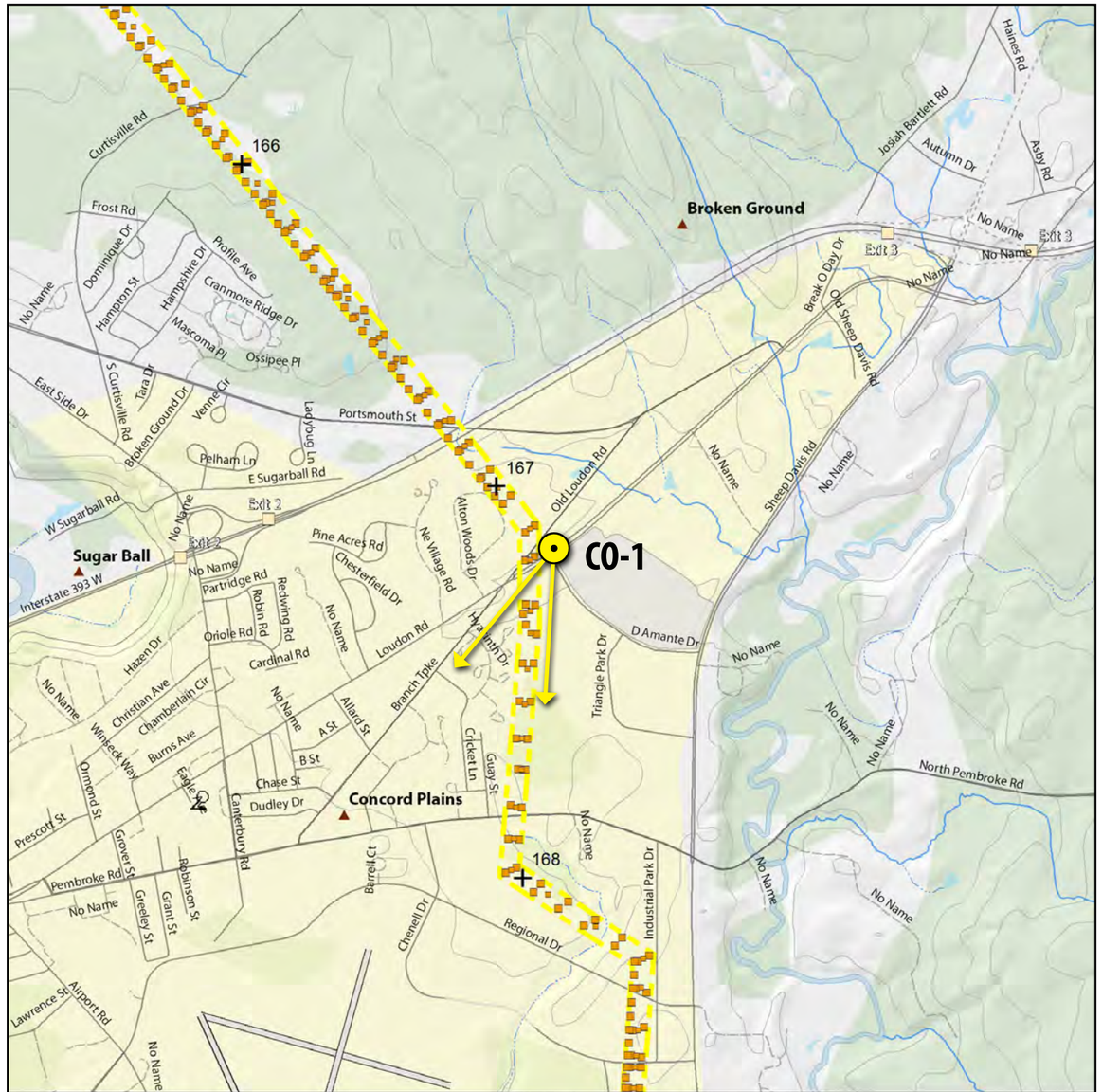
Alternative 3
Simulated Conditions

Northern Pass Transmission Line Project Environmental Impact Statement
NH Route 145 Looking West - Clarksville, New Hampshire

CL-1d

Loudon Road/NH Route 9 - Concord, New Hampshire

Viewpoint CO-1a



SOURCE: ESRI 2011; GRANIT 2012; Burns and McDonnell 2013; USFS 2012; Ecology and Environment 2013, DeLorme Data, T.J. Boyle Associates

Figure 1
Viewpoint Location Map
Northern Pass Transmission Line Project
Environmental Impact Statement

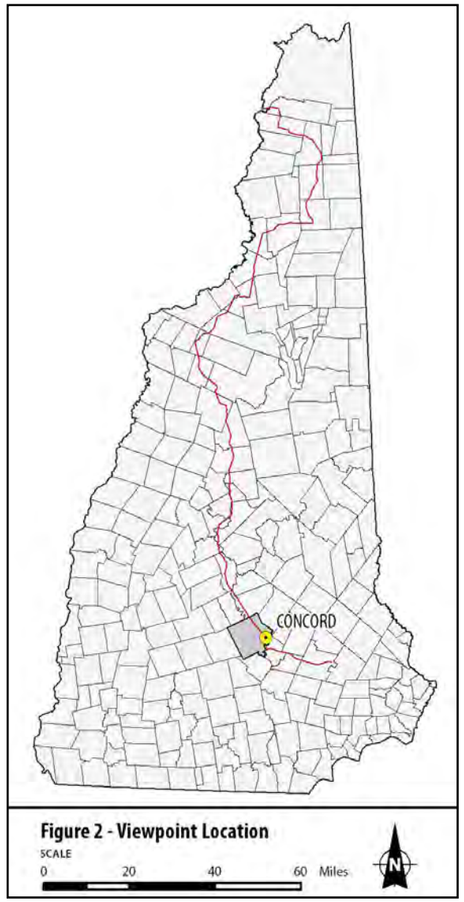


Figure 2 - Viewpoint Location

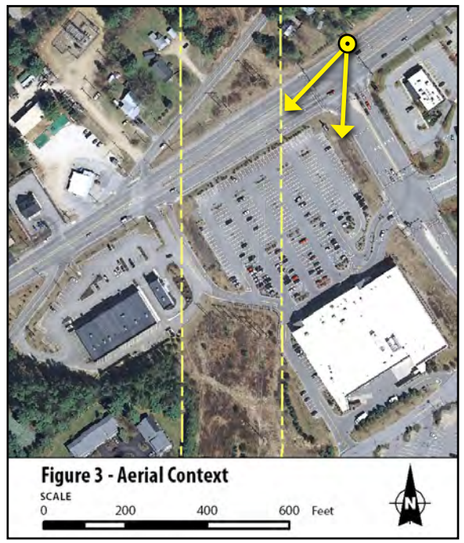


Figure 3 - Aerial Context

General Information

Base Photograph
Date: 11-14-2013
Time: 10:06 am
Meteorological Visibility:
Concord Airport - 10 miles
Image Size: 4,928 x 3,264 pixels

Camera Properties
Camera Make/Model: Nikon D7000
Sensor Dimensions: 23.6 mm x 15.6 mm
Lens Make/Model: Nikkor DX AF-S 35 mm
Lens Focal Length: 35 mm
35 mm Equivalent Focal Length: 52.5 mm
Approximate Angles of View:
37° wide and 25° high
Camera Height: 1.5 meters (5 feet)

Viewpoint Information
Location: Loudon Road/NH Route 9, Concord
Latitude/Longitude: 43.224149°, -71.490034°
Viewpoint Elevation: 346 feet
Viewpoint Name: CO-1
Orientation: Looking Southwest
Looking toward Alternative 2 Mile Marker: 168

Simulation Viewing Notes
The simulation is properly printed on an 11-by-17 inches sheet at actual size. If viewed on a computer monitor, use the highest screen resolution. The simulated image is at the proper perspective when viewed at 23.5 inches from the eye, or at a distance of approx. twice the image height.

Project Design
The simulations are based on the best information available in March 2014.

Alternatives Simulated from this Viewpoint

Alternative 1 - No Action
Transmission Line Information
Distance to Nearest Visible Structure: 737 feet
Number of Visible Existing Structures: 6

Alternative 2 - Proposed Action
Transmission Line Information
Distance to Nearest Visible Structure: 749 feet
Number of Visible Transmission Structures: 7

Alternative 3
Transmission Line Information
The transmission line is buried in this view and there is no discernible visual change from the Existing Condition.

Alternatives 4a, 4b and 4c
Transmission Line Information
The Project is not visible from this viewpoint.

Alternatives 5a, 5b and 5c
Transmission Line Information
There is no visible change from the Proposed Action.

Alternatives 6a and 6b
Transmission Line Information
There is insufficient transmission line engineering to realistically simulate how co-location would be implemented in this view.

Alternatives 1 , 3 , 4a , 4b and 4c
Existing Conditions

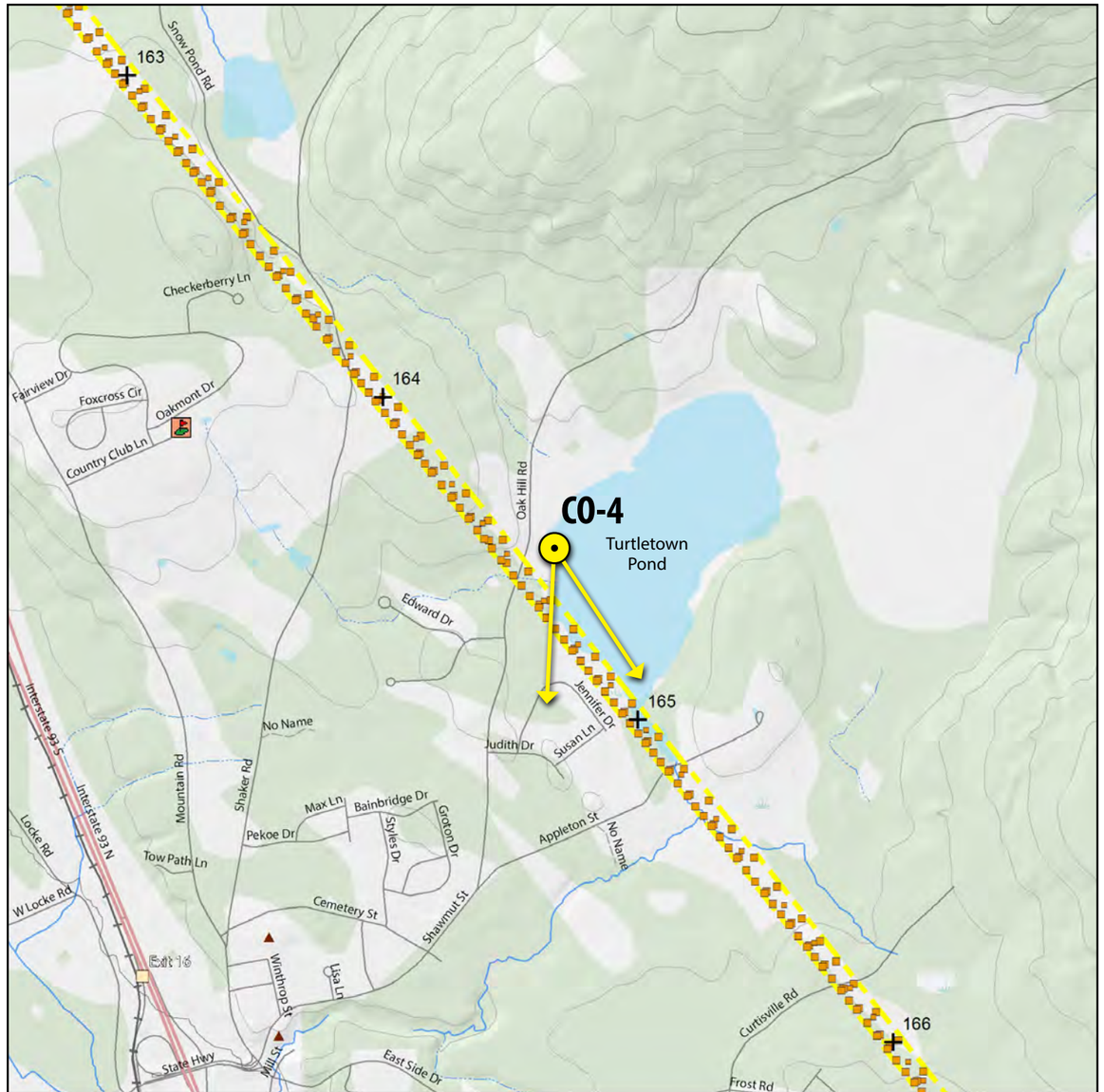
Alternatives 2, 5a, 5b and 5c
Simulated Conditions

Northern Pass Transmission Line Project Environmental Impact Statement
Loudon Road/NH Route 9 - Concord, New Hampshire

C0-1c

Turtletown Pond/Turtle Pond - Concord, New Hampshire

Viewpoint CO-4a



Legend

- Viewpoint
- Existing PSNH ROW
- Proposed New Northern Pass ROW
- Freeway
- Major Road
- Secondary Road
- Hiking Trails
- Mountain Peaks/Natural Features
- Alternative 2 Structure
- Alternative 2 Mile Marker

SOURCE: ESRI 2011; GRANIT 2012; Burns and McDonnell 2013; USFS 2012; Ecology and Environment 2013, DeLorme Data, T.J. Boyle Associates

0 0.25 0.5 Miles

Figure 1
Viewpoint Location Map
Northern Pass Transmission Line Project
Environmental Impact Statement

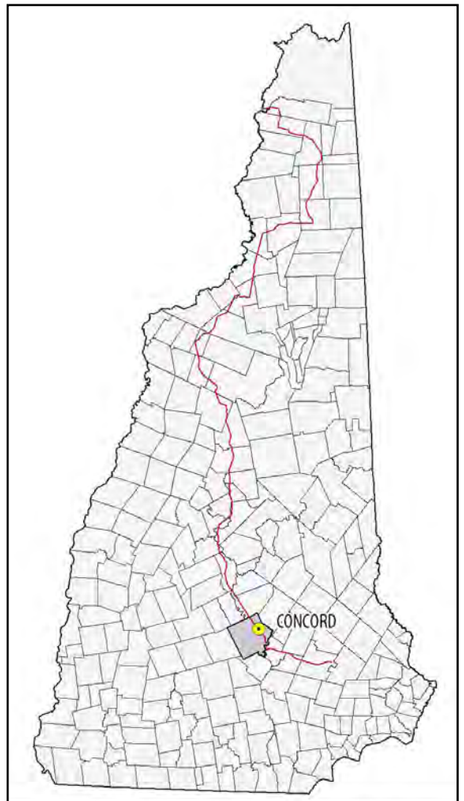


Figure 2 - Viewpoint Location
SCALE
0 20 40 60 Miles

Figure 3 - Aerial Context
SCALE
0 200 400 600 Feet

General Information

Base Photograph
Date: 04-25-2013
Time: 10:35 am
Meteorological Visibility:
Concord Airport - 10 miles
Image Size: 4,928 x 3,264 pixels

Camera Properties
Camera Make/Model: Nikon D7000
Sensor Dimensions: 23.6 mm x 15.6 mm
Lens Make/Model: Nikkor DX AF-S 35 mm
Lens Focal Length: 35 mm
35 mm Equivalent Focal Length: 52.5 mm
Approximate Angles of View:
37° wide and 25° high
Camera Height: 1.5 meters (5 feet)

Viewpoint Information
Location: Turtletown Pond/Turtle Pond, Concord
Latitude/Longitude: 43.225112°, -71.521308°
Viewpoint Elevation: 321 feet
Viewpoint Name: CO-4
Orientation: Looking Southeast
Looking toward Alternative 2 Mile Marker: 165

Simulation Viewing Notes
The simulation is properly printed on an 11-by-17 inches sheet at actual size. If viewed on a computer monitor, use the highest screen resolution. The simulated image is at the proper perspective when viewed at 23.5 inches from the eye, or at a distance of approx. twice the image height.

Project Design
The simulations are based on the best information available in March 2014.

Alternatives Simulated from this Viewpoint

Alternative 1 - No Action
Transmission Line Information
Distance to Nearest Visible Structure: 1,058 feet
Number of Visible Existing Structures: 10

Alternative 2 - Proposed Action
Transmission Line Information
Distance to Nearest Visible Structure: 1,058 feet
Number of Visible Transmission Structures: 13

Alternative 3
Transmission Line Information
The transmission line is buried in this view and there is no discernible visual change from the Existing Condition.

Alternatives 4a, 4b and 4c
Transmission Line Information
The Project is not visible from this viewpoint.

Alternatives 5a, 5b and 5c
Transmission Line Information
There is no visible change from the Proposed Action.

Alternatives 6a and 6b
Transmission Line Information
Distance to Nearest Visible Structure: 1,058 feet
Number of Visible Transmission Structures: 13

Alternatives 2, 5a, 5b and 5c
Simulated Conditions

Northern Pass Transmission Line Project Environmental Impact Statement
Turtletown Pond/Turtle Pond - Concord, New Hampshire

C0-4c

Nottingham Road - Deerfield, New Hampshire

Viewpoint DE-1a

Legend

- Viewpoint
- Existing PSNH ROW
- Proposed New Northern Pass ROW
- Freeway
- Major Road
- Secondary Road
- Hiking Trails
- Mountain Peaks/Natural Features
- Alternative 2 Structure
- Alternative 2 Mile Marker

Figure 1
Viewpoint Location Map
Northern Pass Transmission Line Project
Environmental Impact Statement

0 0.25 0.5 Miles

SOURCE: ESRI 2011; GRANIT 2012; Burns and McDonnell 2013; USFS 2012; Ecology and Environment 2013, DeLorme Data, T.J. Boyle Associates

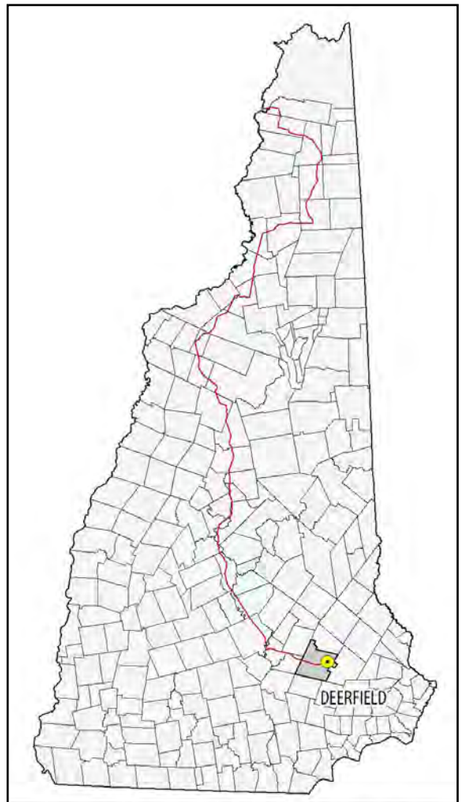


Figure 2 - Viewpoint Location
SCALE
0 20 40 60 Miles

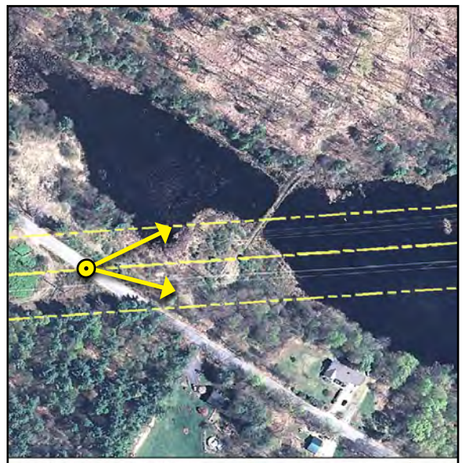


Figure 3 - Aerial Context
SCALE
0 200 400 600 Feet

General Information

Base Photograph
Date: 03-20-2013
Time: 9:25 am
Meteorological Visibility:
Concord Airport - 10 miles
Image Size: 4,928 x 3,264 pixels

Camera Properties
Camera Make/Model: Nikon D7000
Sensor Dimensions: 23.6 mm x 15.6 mm
Lens Make/Model: Nikkor DX AF-S 35 mm
Lens Focal Length: 35 mm
35 mm Equivalent Focal Length: 52.5 mm
Approximate Angles of View:
37° wide and 25° high
Camera Height: 1.5 meters (5 feet)

Viewpoint Information
Location: Nottingham Road, Deerfield
Latitude/Longitude: 43.142670°, -71.204117°
Viewpoint Elevation: 418 feet
Viewpoint Name: DE-1
Orientation: Looking East
Looking toward Alternative 2 Mile Marker: 186

Simulation Viewing Notes
The simulation is properly printed on an 11-by-17 inches sheet at actual size. If viewed on a computer monitor, use the highest screen resolution. The simulated image is at the proper perspective when viewed at 23.5 inches from the eye, or at a distance of approx. twice the image height.

Project Design
The simulations are based on the best information available in March 2014.

Alternatives Simulated from this Viewpoint

Alternative 1 - No Action
Transmission Line Information
Distance to Nearest Visible Structure: 301 feet
Number of Visible Existing Structures: 17

Alternative 2 - Proposed Action
Transmission Line Information
Distance to Nearest Visible Structure: 325 feet
Number of Visible Transmission Structures: 24

Alternatives 3, 4a, 4b and 4c
Transmission Line Information
The transmission line is buried in this view and there is no discernible visual change from the Existing Condition.

Alternatives 5a, 5b and 5c
Transmission Line Information
There is no visible change from the Proposed Action.

Alternatives 6a and 6b
Transmission Line Information
Distance to Nearest Visible Structure: 325 feet
Number of Visible Transmission Structures: 14

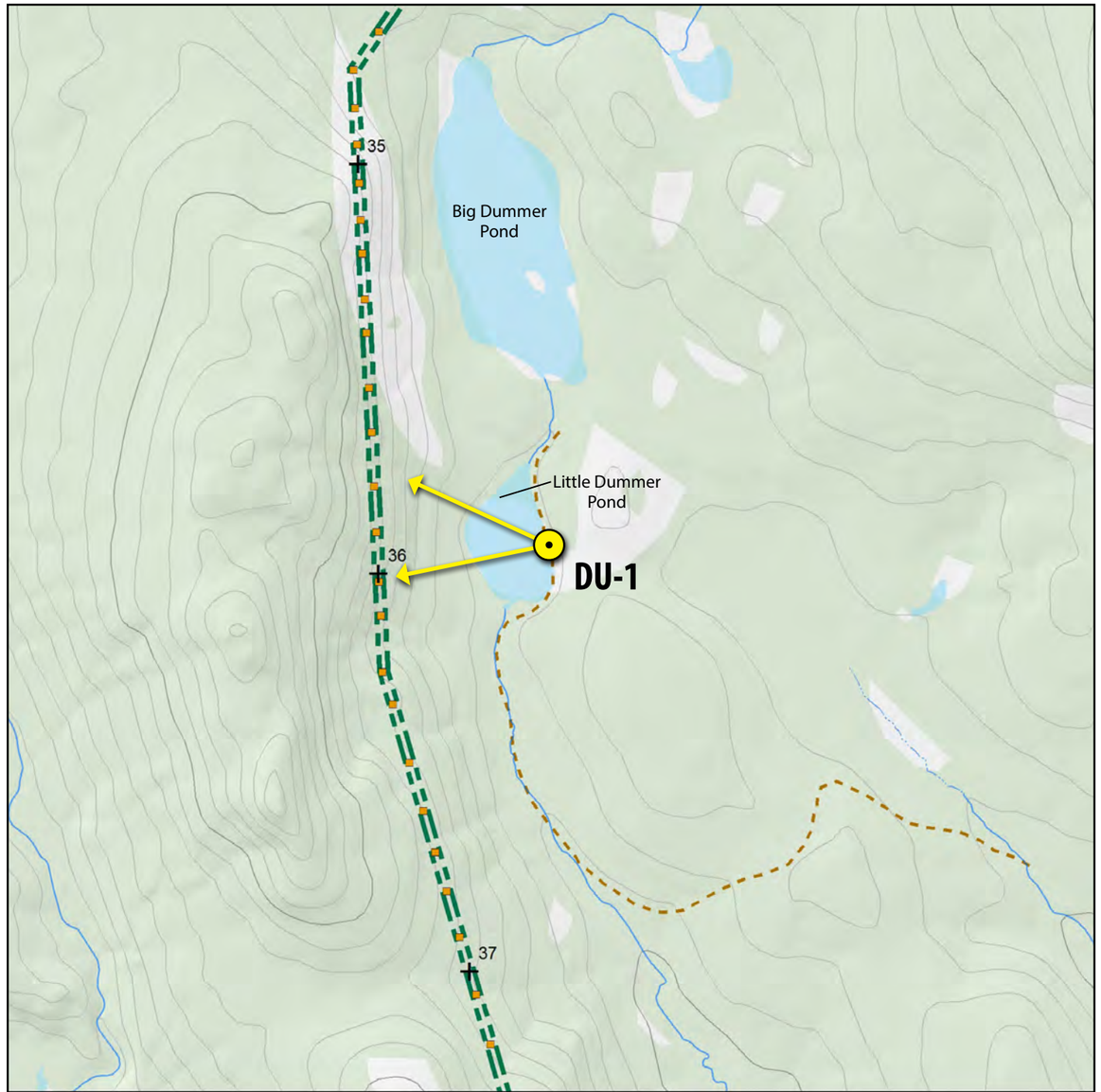
Alternatives 2, 5a, 5b and 5c
Simulated Conditions

Northern Pass Transmission Line Project Environmental Impact Statement
Nottingham Road - Deerfield, New Hampshire

DE-1c

Little Dummer Pond - Dummer, New Hampshire

Viewpoint DU-1a



Legend

- Viewpoint
- Existing PSNH ROW
- Proposed New Northern Pass ROW
- Freeway
- Major Road
- Secondary Road
- Hiking Trails
- Mountain Peaks/Natural Features
- Alternative 2 Structure
- Alternative 2 Mile Marker

Figure 1
Viewpoint Location Map
Northern Pass Transmission Line Project
Environmental Impact Statement

0 0.25 0.5 Miles

SOURCE: ESRI 2011; GRANIT 2012; Burns and McDonnell 2013; USFS 2012; Ecology and Environment 2013, DeLorme Data, T.J. Boyle Associates

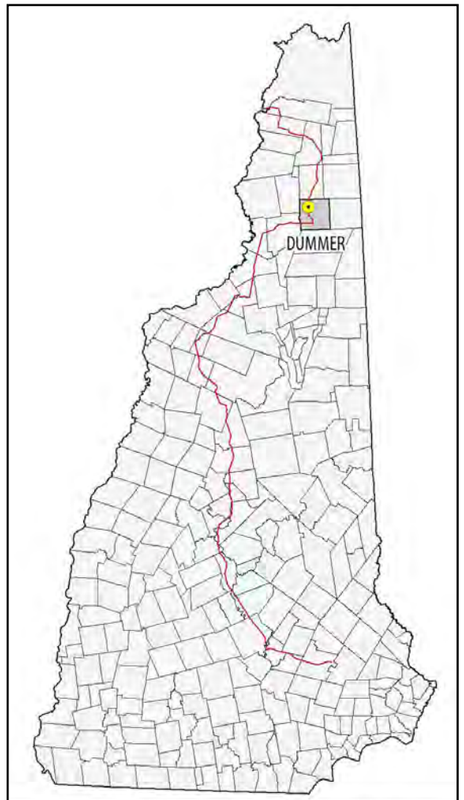


Figure 2 - Viewpoint Location
SCALE
0 20 40 60 Miles

Figure 3 - Aerial Context
SCALE
0 200 400 600 Feet

General Information

Base Photograph
Date: 10-01-2013
Time: 10:50 am
Meteorological Visibility:
Berlin Airport - .2 miles
Image Size: 4,928 x 3,264 pixels

Camera Properties
Camera Make/Model: Nikon D7000
Sensor Dimensions: 23.6 mm x 15.6 mm
Lens Make/Model: Nikkor DX AF-S 35 mm
Lens Focal Length: 35 mm
35 mm Equivalent Focal Length: 52.5 mm
Approximate Angles of View:
37° wide and 25° high
Camera Height: 1.5 meters (5 feet)

Viewpoint Information
Location: Little Dummer Pond, Dummer
Latitude/Longitude: 44.682496°, -71.28352°
Viewpoint Elevation: 1,350 feet
Viewpoint Name: DU-1
Orientation: Looking West
Looking toward Alternative 2 Mile Marker: 36

Simulation Viewing Notes
The simulation is properly printed on an 11-by-17 inches sheet at actual size. If viewed on a computer monitor, use the highest screen resolution. The simulated image is at the proper perspective when viewed at 23.5 inches from the eye, or at a distance of approx. twice the image height.

Project Design
The simulations are based on the best information available in March 2014.

Alternatives Simulated from this Viewpoint

Alternative 1 - No Action
Transmission Line Information
Distance to Nearest Visible Structure: 1,756 feet
Number of Visible Existing Structures: 3

Alternative 2 - Proposed Action
Transmission Line Information
Distance to Nearest Visible Structure: 1,756 feet
Number of Visible Transmission Structures: 6

Alternative 3
Transmission Line Information
The transmission line is buried in this view and vegetation clearing in the ROW is discernible.

Alternatives 4a, 4b and 4c
Transmission Line Information
The Project is not visible from this viewpoint.

Alternatives 5a, 5b and 5c
Transmission Line Information
There is no visible change from the Proposed Action.

Alternatives 6a and 6b
Transmission Line Information
The Project is not visible from this viewpoint.

DU-1b

Alternatives 1, 3, 4a, 4b, 4c, 6a and 6b
Existing Conditions

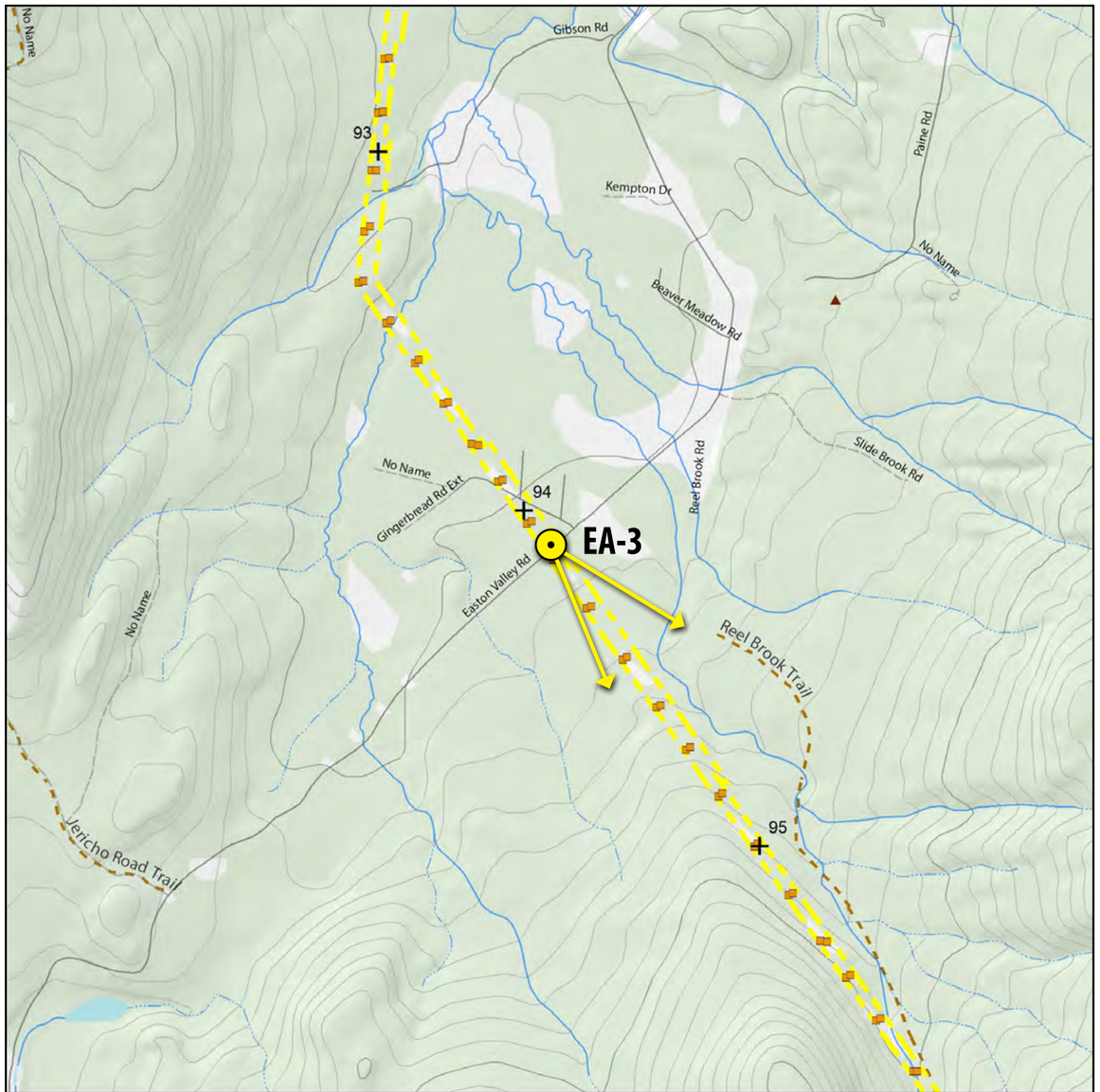
Alternatives 2, 5a, 5b and 5c
Simulated Conditions

Northern Pass Transmission Line Project Environmental Impact Statement
Little Dummer Pond - Dummer, New Hampshire

DU-1c

Easton Valley Road/NH Route 116 Crossing - Easton, New Hampshire

Viewpoint EA-3a



Legend

- Viewpoint
- Existing PSNH ROW
- Proposed New Northern Pass ROW
- Freeway
- Major Road
- Secondary Road
- Hiking Trails
- Mountain Peaks/Natural Features
- Alternative 2 Structure
- Alternative 2 Mile Marker

SOURCE: ESRI 2011; GRANIT 2012; Burns and McDonnell 2013; USFS 2012; Ecology and Environment 2013, DeLorme Data, T.J. Boyle Associates

0 0.25 0.5 Miles

Figure 1
Viewpoint Location Map
Northern Pass Transmission Line Project
Environmental Impact Statement

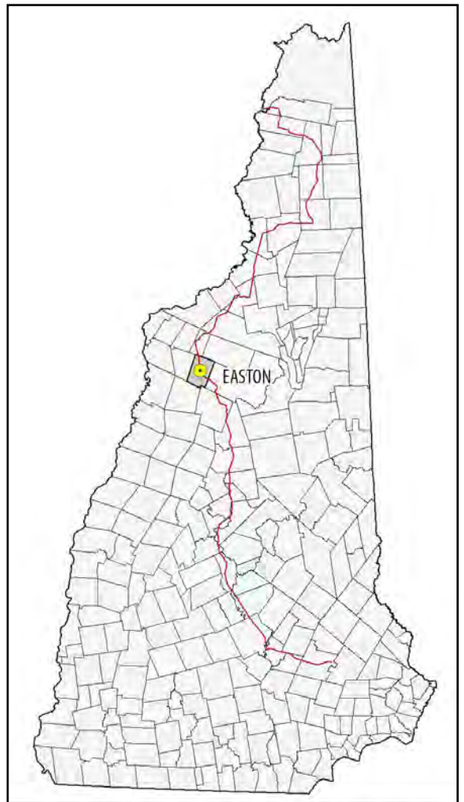


Figure 2 - Viewpoint Location
SCALE
0 20 40 60 Miles

Figure 3 - Aerial Context
SCALE
0 200 400 600 Feet

General Information

Base Photograph
Date: 03-29-2013
Time: 9:12 am
Meteorological Visibility:
Plymouth Airport - 10 miles
Image Size: 4,928 x 3,264 pixels

Camera Properties
Camera Make/Model: Nikon D7000
Sensor Dimensions: 23.6 mm x 15.6 mm
Lens Make/Model: Nikkor DX AF-S 35 mm
Lens Focal Length: 35 mm
35 mm Equivalent Focal Length: 52.5 mm
Approximate Angles of View:
37° wide and 25° high
Camera Height: 1.5 meters (5 feet)

Viewpoint Information
Location: Easton Valley Road/NH Route 116 Crossing, Easton
Latitude/Longitude: 44.128171°, -71.793515°
Viewpoint Elevation: 1,281 feet
Viewpoint Name: EA-3
Orientation: Looking SE
Looking toward Alternative 2 Mile Marker: 95

Simulation Viewing Notes
The simulation is properly printed on an 11-by-17 inches sheet at actual size. If viewed on a computer monitor, use the highest screen resolution. The simulated image is at the proper perspective when viewed at 23.5 inches from the eye, or at a distance of approx. twice the image height.

Project Design
The simulations are based on the best information available in March 2014.

Alternatives Simulated from this Viewpoint

Alternative 1 - No Action

Transmission Line Information
Distance to Nearest Visible Structure: 129 feet
Number of Visible Existing Structures: 7

Alternative 2 - Proposed Action

Transmission Line Information
Distance to Nearest Visible Structure: 126 feet
Number of Visible Transmission Structures: 25

Alternatives 3, 4b, 4c, 5b, 5c and 6b

Transmission Line Information
The transmission line is buried in this view roadway and there is no discernible visual change from the Existing Condition.

Alternatives 4a, 5a and 6a

Transmission Line Information
The Project is not visible from this viewpoint.

Northern Pass Transmission Line Project Environmental Impact Statement
Easton Valley Road/NH Route 116 Crossing - Easton, New Hampshire

Alternatives 1, 3, 4a, 4b, 4c, 5a, 5b,5c, 6a and 6b
Existing Conditions

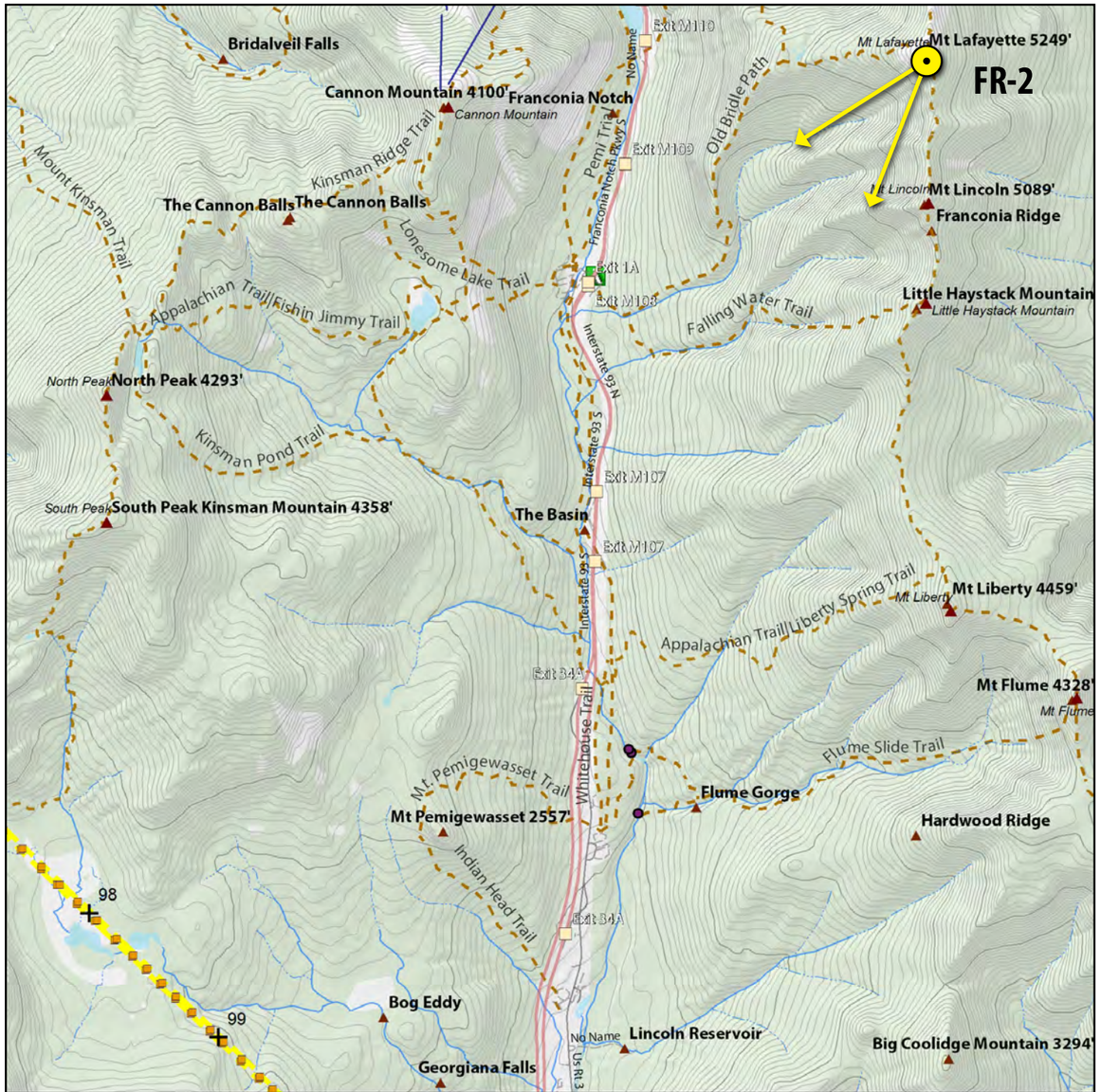
Alternative 2
Simulated Conditions

Northern Pass Transmission Line Project Environmental Impact Statement
Easton Valley Road/NH Route 116 Crossing - Easton, New Hampshire

EA-3c

Mount Lafayette - Franconia, New Hampshire

Viewpoint FR-2a



Legend

- Viewpoint
- Existing PSNH ROW
- Proposed New Northern Pass ROW
- Freeway
- Major Road
- Secondary Road
- Hiking Trails
- Mountain Peaks/Natural Features
- Alternative 2 Structure
- Alternative 2 Mile Marker

SOURCE: ESRI 2011; GRANIT 2012; Burns and McDonnell 2013; USFS 2012; Ecology and Environment 2013, DeLorme Data, T.J. Boyle Associates

0 0.25 0.5 0.75 1 1.25 1.5 Miles

Figure 1
Viewpoint Location Map
Northern Pass Transmission Line Project
Environmental Impact Statement

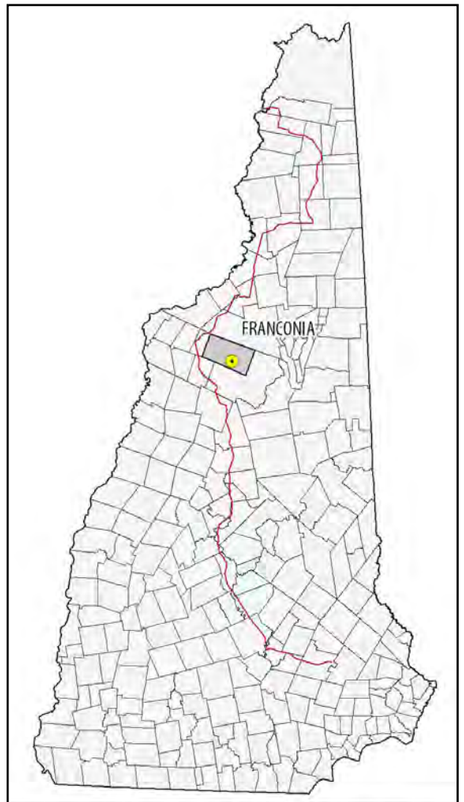


Figure 2 - Viewpoint Location
SCALE
0 20 40 Miles

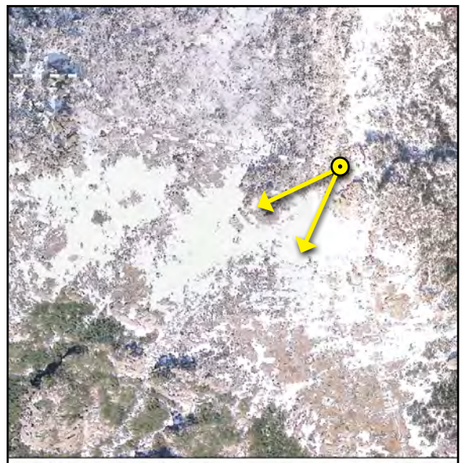


Figure 3 - Aerial Context
SCALE
0 200 400 600 Feet

General Information

Base Photograph
Date: 04-06-2013
Time: 12:58 pm
Meteorological Visibility:
Plymouth Airport - 10 miles
Image Size: 4,928 x 3,264 pixels

Camera Properties
Camera Make/Model: Nikon D7000
Sensor Dimensions: 23.6 mm x 15.6 mm
Lens Make/Model: Nikkor DX AF-S 35 mm
Lens Focal Length: 35 mm
35 mm Equivalent Focal Length: 52.5 mm
Approximate Angles of View:
37° wide and 25° high
Camera Height: 1.5 meters (5 feet)

Viewpoint Information
Location: Mount Lafayette, Franconia
Latitude/Longitude: 44.160832°, -71.644507°
Viewpoint Elevation: 5,235 feet
Viewpoint Name: FR-2
Orientation: Looking Southwest
Looking toward Alternative 2 Mile Markers: 98-99

Simulation Viewing Notes
The simulation is properly printed on an 11-by-17 inches sheet at actual size. If viewed on a computer monitor, use the highest screen resolution. The simulated image is at the proper perspective when viewed at 23.5 inches from the eye, or at a distance of approx. twice the image height.

Project Design
The simulations are based on the best information available in March 2014.

Alternatives Simulated from this Viewpoint

Alternative 1 - No Action

Transmission Line Information
Distance to Nearest Visible Structure: 34,433 feet
Number of Visible Existing Structures: 6

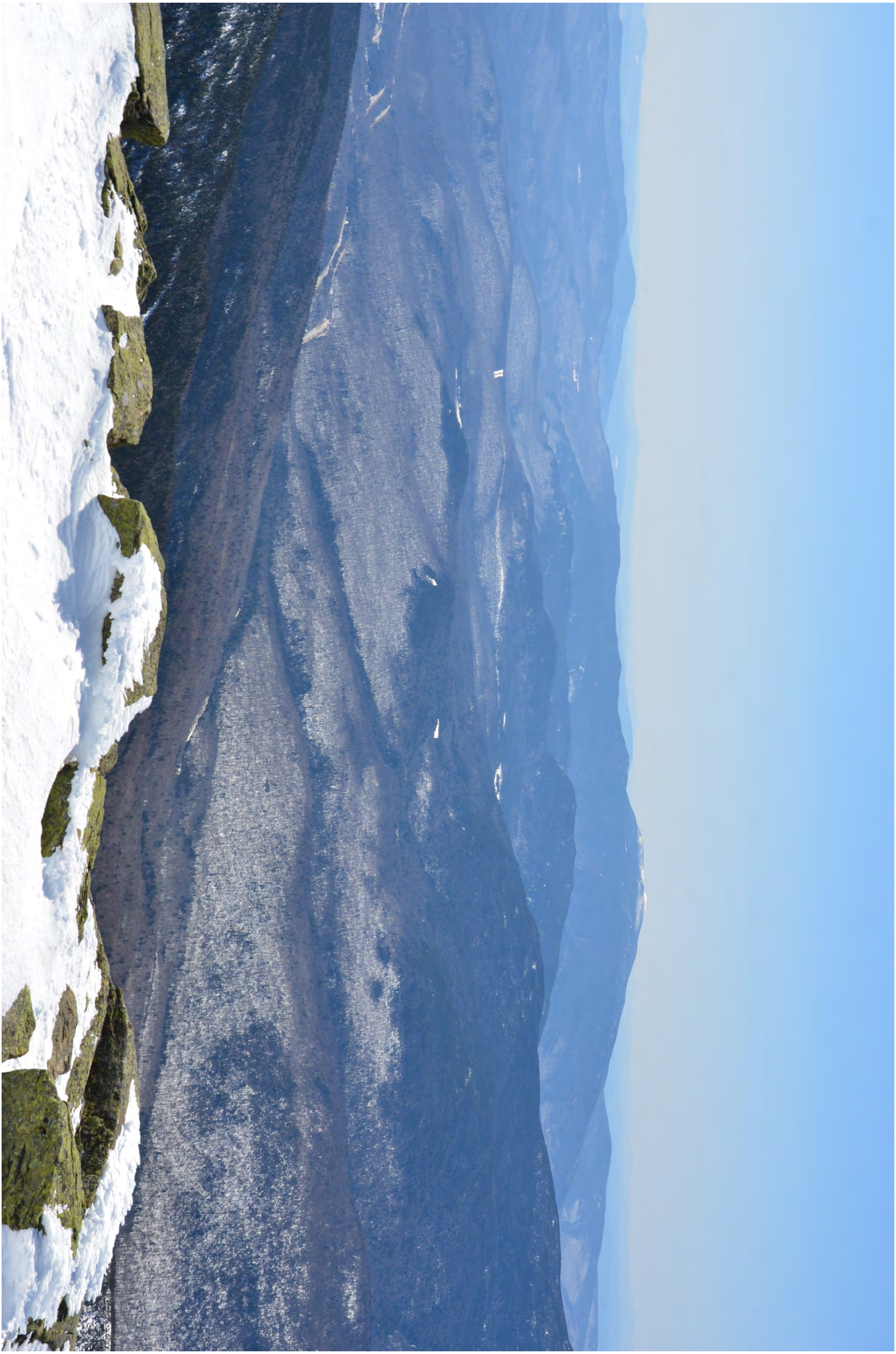
Alternative 2 - Proposed Action

Transmission Line Information
Distance to Nearest Visible Structure: 35,412 feet
Number of Visible Transmission Structures: 16

Alternatives 3, 4a, 4b, 4c, 5a, 5b, 5c, 6a and 6b

Transmission Line Information
The transmission line is buried in this view and there is no discernible visual change from the Existing Condition.

Alternatives 1, 3, 4a, 4b, 4c, 5a, 5b, 5c, 6a and 6b
Existing Conditions



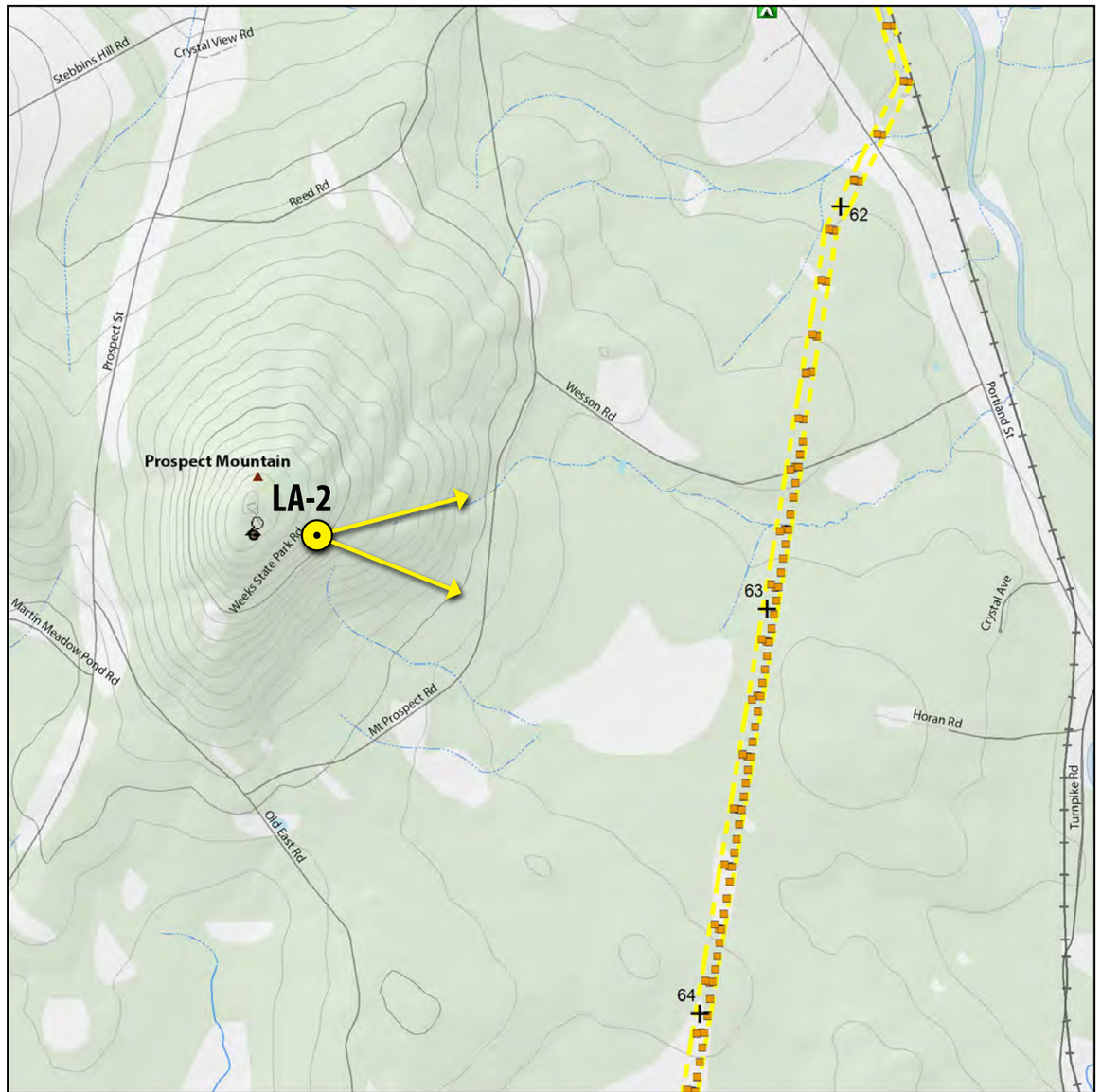
Alternative 2
Simulated Conditions

Northern Pass Transmission Line Project Environmental Impact Statement
Mount Lafayette - Franconia, New Hampshire

FR-2c

Weeks State Park Lookout - Lancaster, New Hampshire

Viewpoint LA-2a



Legend

- Viewpoint
- Existing PSNH ROW
- Proposed New Northern Pass ROW
- Freeway
- Major Road
- Secondary Road
- Hiking Trails
- Mountain Peaks/Natural Features
- Alternative 2 Structure
- Alternative 2 Mile Marker

SOURCE: ESRI 2011; GRANIT 2012; Burns and McDonnell 2013; USFS 2012; Ecology and Environment 2013, DeLorme Data, T.J. Boyle Associates

0 0.25 0.5 Miles

Figure 1
Viewpoint Location Map
Northern Pass Transmission Line Project
Environmental Impact Statement

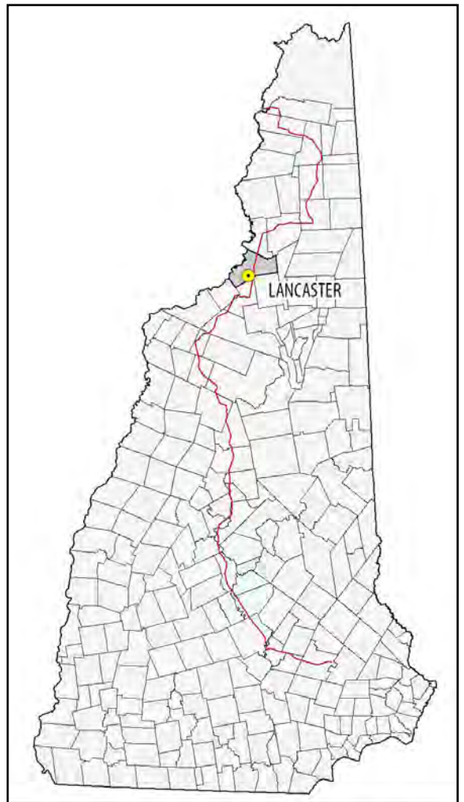


Figure 2 - Viewpoint Location
SCALE
0 20 40 60 Miles

Figure 3 - Aerial Context
SCALE
0 200 400 600 Feet

General Information

Base Photograph
Date: 04-06-2013
Time: 12:58 pm
Meteorological Visibility:
Berlin Airport - 10 miles
Image Size: 4,928 x 3,264 pixels

Camera Properties
Camera Make/Model: Nikon D7000
Sensor Dimensions: 23.6 mm x 15.6 mm
Lens Make/Model: Nikkor DX AF-S 35 mm
Lens Focal Length: 35 mm
35 mm Equivalent Focal Length: 52.5 mm
Approximate Angles of View:
37° wide and 25° high
Camera Height: 1.5 meters (5 feet)

Viewpoint Information
Location: Weeks State Park, Lancaster
Latitude/Longitude: 44.450291°, -71.567901°
Viewpoint Elevation: 1,875 feet
Viewpoint Name: LA-2
Orientation: Looking East
Looking toward Alternative 2 Mile Marker: 63

Simulation Viewing Notes
The simulation is properly printed on an 11-by-17 inches sheet at actual size. If viewed on a computer monitor, use the highest screen resolution. The simulated image is at the proper perspective when viewed at 23.5 inches from the eye, or at a distance of approx. twice the image height.

Project Design
The simulations are based on the best information available in March 2014.

Alternatives Simulated from this Viewpoint

Alternative 1 - No Action
Transmission Line Information
Distance to Nearest Visible Structure: 5,985 feet
Number of Visible Existing Structures: 15

Alternative 2 - Proposed Action
Transmission Line Information
Distance to Nearest Visible Structure: 5,981 feet
Number of Visible Transmission Structures: 34

Alternative 3
Transmission Line Information
The transmission line is buried in this view and there is no discernible visual change from the Existing Condition.

Alternatives 4a, 4b and 4c
Transmission Line Information
The Project is not visible from this viewpoint.

Alternatives 5a, 5b and 5c
Transmission Line Information
There is no visible change from the Proposed Action.

Alternatives 6a and 6b
Transmission Line Information
The Project is not visible from this viewpoint.

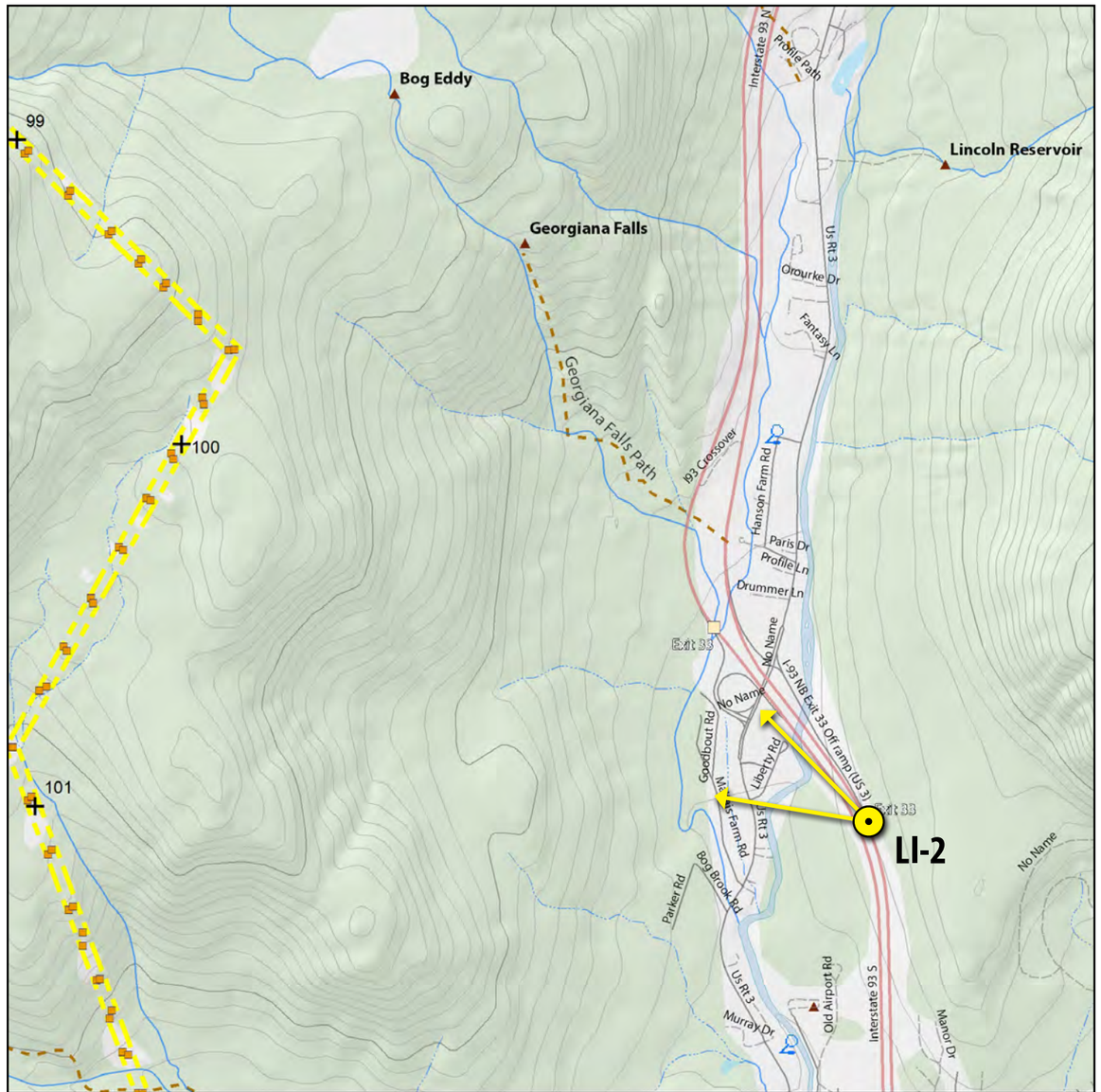
Alternatives 2, 5a, 5b and 5c
Simulated Conditions

Northern Pass Transmission Line Project Environmental Impact Statement
Weeks State Park Lookout - Lancaster, New Hampshire

LA-2c

White Mountain Trail Byway - Lincoln, New Hampshire

Viewpoint LI-2a



Legend

- Viewpoint
- Existing PSNH ROW
- Proposed New Northern Pass ROW
- Freeway
- Major Road
- Secondary Road
- Hiking Trails
- Mountain Peaks/Natural Features
- Alternative 2 Structure
- Alternative 2 Mile Marker

SOURCE: ESRI 2011; GRANIT 2012; Burns and McDonnell 2013; USFS 2012; Ecology and Environment 2013, DeLorme Data, T.J. Boyle Associates

0 0.25 0.5 Miles

Figure 1
Viewpoint Location Map
Northern Pass Transmission Line Project
Environmental Impact Statement

Figure 2 - Viewpoint Location
SCALE
0 20 40 60 Miles

Figure 3 - Aerial Context
SCALE
0 200 400 600 Feet

General Information

Base Photograph
Date: 09-17-2013
Time: 1:21 pm
Meteorological Visibility:
Plymouth Airport - 10 miles
Image Size: 4,928 x 3,264 pixels

Camera Properties
Camera Make/Model: Nikon D7000
Sensor Dimensions: 23.6 mm x 15.6 mm
Lens Make/Model: Nikkor DX AF-S 35 mm
Lens Focal Length: 35 mm
35 mm Equivalent Focal Length: 52.5 mm
Approximate Angles of View:
37° wide and 25° high
Camera Height: 1.5 meters (5 feet)

Viewpoint Information
Location: White Mountain Trail Byway, Lincoln
Latitude/Longitude: 44.057196°, -71.682446°
Viewpoint Elevation: 938 feet
Viewpoint Name: LI-2
Orientation: Looking Northwest
Looking toward Alternative 2 Mile Marker: 100

Simulation Viewing Notes
The simulation is properly printed on an 11-by-17 inches sheet at actual size. If viewed on a computer monitor, use the highest screen resolution. The simulated image is at the proper perspective when viewed at 23.5 inches from the eye, or at a distance of approx. twice the image height.

Project Design
The simulations are based on the best information available in March 2014.

Alternatives Simulated from this Viewpoint

Alternative 1 - No Action

Transmission Line Information
Distance to Nearest Visible Structure: 10,491 feet
Number of Visible Existing Structures: 5

Alternative 2 - Proposed Action

Transmission Line Information
Distance to Nearest Visible Structure: 10,155 feet
Number of Visible Transmission Structures: 8

Alternative 3

Transmission Line Information
The transmission line is buried in this view and there is no discernible visual change from the Existing Condition.

Alternatives 4a, 4b, 4c, 5a, 5b, 5c, 6a and 6b

Transmission Line Information
The Project is not visible from this viewpoint.

Alternatives 1, 3, 4a, 4b, 4c, 5a, 5b, 5c, 6a and 6b
Existing Conditions

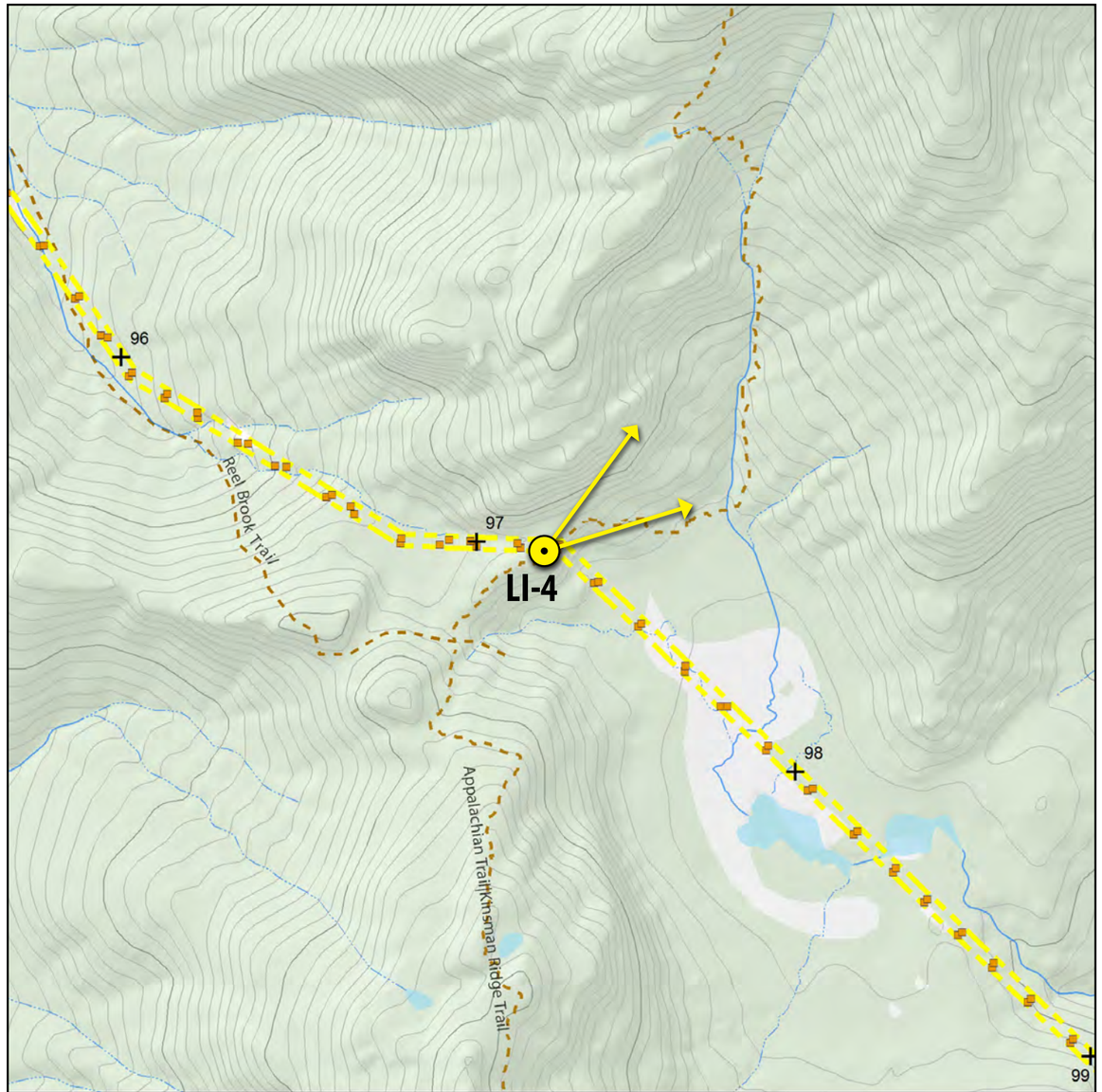
Alternative 2
Simulated Conditions

Northern Pass Transmission Line Project Environmental Impact Statement
White Mountain Trail Byway - Lincoln, New Hampshire

LI-2c

Appalachain Trail Crossing - Lincoln, New Hampshire

Viewpoint LI-4a



Legend

- Viewpoint
- Existing PSNH ROW
- Proposed New Northern Pass ROW
- Freeway
- Major Road
- Secondary Road
- Hiking Trails
- Mountain Peaks/Natural Features
- Alternative 2 Structure
- Alternative 2 Mile Marker

Figure 1
Viewpoint Location Map
Northern Pass Transmission Line Project
Environmental Impact Statement

0 0.25 0.5 Miles

SOURCE: ESRI 2011; GRANIT 2012; Burns and McDonnell 2013; USFS 2012; Ecology and Environment 2013, DeLorme Data, T.J. Boyle Associates

Figure 2 - Viewpoint Location
SCALE
0 20 40 Miles

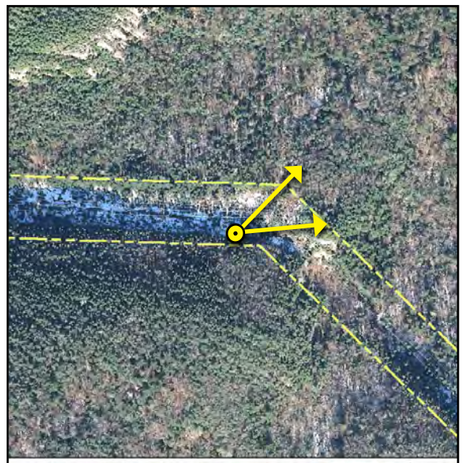


Figure 3 - Aerial Context
SCALE
0 200 400 600 Feet

General Information

Base Photograph
Date: 08-21-2013
Time: 1:48 pm
Meteorological Visibility:
Plymouth Airport - 10 miles
Image Size: 4,928 x 3,264 pixels

Camera Properties
Camera Make/Model: Nikon D7000
Sensor Dimensions: 23.6 mm x 15.6 mm
Lens Make/Model: Nikkor DX AF-S 35 mm
Lens Focal Length: 35 mm
35 mm Equivalent Focal Length: 52.5 mm
Approximate Angles of View:
37° wide and 25° high
Camera Height: 1.5 meters (5 feet)

Viewpoint Information
Location: Appalachain Trail Crossing, Lincoln
Latitude/Longitude: 44.099088°, -71.750570°
Viewpoint Elevation: 2,608 feet
Viewpoint Name: LI-4
Orientation: Looking Northeast
Looking toward Alternative 2 Mile Markers: 97-98

Simulation Viewing Notes
The simulation is properly printed on an 11-by-17 inches sheet at actual size. If viewed on a computer monitor, use the highest screen resolution. The simulated image is at the proper perspective when viewed at 23.5 inches from the eye, or at a distance of approx. twice the image height.

Project Design
The simulations are based on the best information available in March 2014.

Alternatives Simulated from this Viewpoint

Alternative 1 - No Action

Transmission Line Information
Distance to Nearest Visible Structure: 105 feet
Number of Visible Existing Structures: 1

Alternative 2 - Proposed Action

Transmission Line Information
Distance to Nearest Visible Structure: 117 feet
Number of Visible Transmission Structures: 1

Alternatives 3

Transmission Line Information
The transmission line is buried in this view and there is no discernible visual change from the Existing Condition.

Alternatives 4a, 4b, 4c, 5a, 5b, 5c, 6a and 6b

Transmission Line Information
The Project is not visible from this viewpoint.

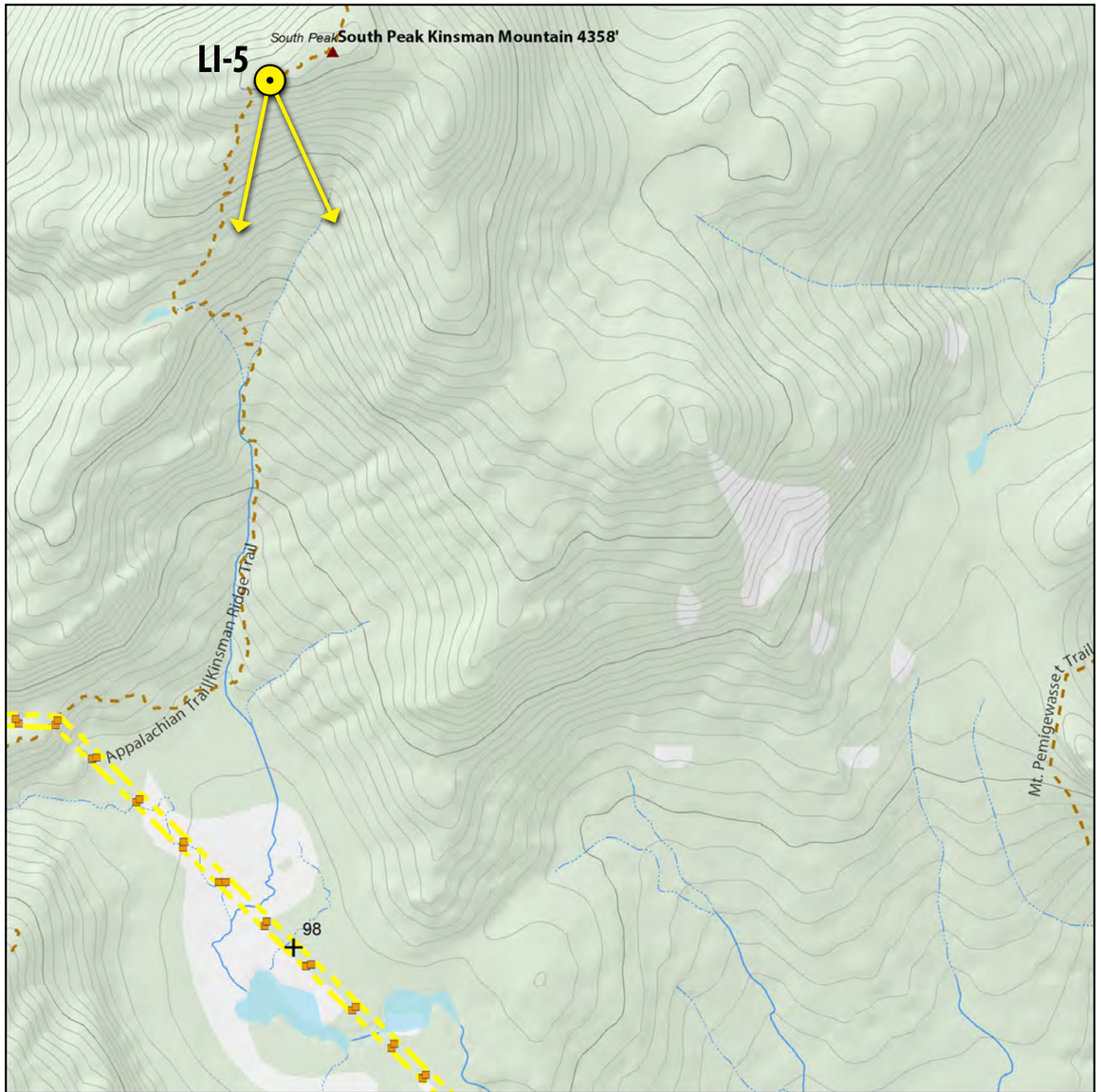
Alternative 2
Simulated Conditions

Northern Pass Transmission Line Project Environmental Impact Statement
Appalachain Trail Crossing - Lincoln, New Hampshire

LI-4c

South Kinsman Mountain - Lincoln, New Hampshire

Viewpoint LI-5a



Legend

- Viewpoint
- Existing PSNH ROW
- Proposed New Northern Pass ROW
- Freeway
- Major Road
- Secondary Road
- Hiking Trails
- Mountain Peaks/Natural Features
- Alternative 2 Structure
- Alternative 2 Mile Marker

SOURCE: ESRI 2011; GRANIT 2012; Burns and McDonnell 2013; USFS 2012; Ecology and Environment 2013, DeLorme Data, T.J. Boyle Associates

0 0.25 0.5 Miles

Figure 1
Viewpoint Location Map
Northern Pass Transmission Line Project
Environmental Impact Statement

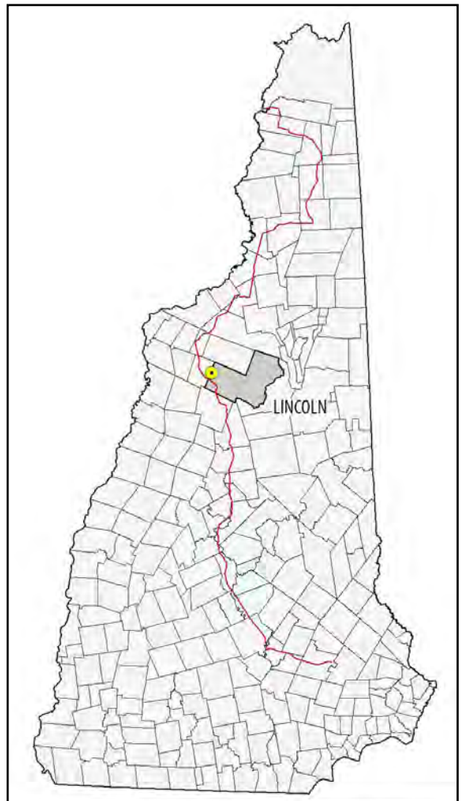


Figure 2 - Viewpoint Location
SCALE
0 20 40 Miles

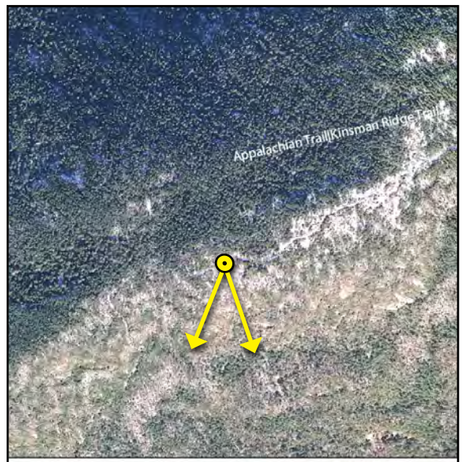


Figure 3 - Aerial Context
SCALE
0 200 400 600 Feet

General Information

Base Photograph
Date: 08-21-2013
Time: 6:29 pm
Meteorological Visibility:
Plymouth Airport - 10 miles
Image Size: 4,928 x 3,264 pixels

Camera Properties
Camera Make/Model: Nikon D7000
Sensor Dimensions: 23.6 mm x 15.6 mm
Lens Make/Model: Nikkor DX AF-S 35 mm
Lens Focal Length: 35 mm
35 mm Equivalent Focal Length: 52.5 mm
Approximate Angles of View:
37° wide and 25° high
Camera Height: 1.5 meters (5 feet)

Viewpoint Information
Location: South Kinsman Mountain, Lincoln
Latitude/Longitude: 44.121871°, -71.739837°
Viewpoint Elevation: 4,325 feet
Viewpoint Name: LI-5
Orientation: Looking South
Looking toward Alternative 2 Mile Marker: 98

Simulation Viewing Notes
The simulation is properly printed on an 11-by-17 inches sheet at actual size. If viewed on a computer monitor, use the highest screen resolution. The simulated image is at the proper perspective when viewed at 23.5 inches from the eye, or at a distance of approx. twice the image height.

Project Design
The simulations are based on the best information available in March 2014.

Alternatives Simulated from this Viewpoint

Alternative 1 - No Action

Transmission Line Information
Distance to Nearest Visible Structure: 9,320 feet
Number of Visible Existing Structures: 25

Alternative 2 - Proposed Action

Transmission Line Information
Distance to Nearest Visible Structure: 9,411 feet
Number of Visible Transmission Structures: 38

Alternatives 3

Transmission Line Information
The transmission line is buried in this view and there is no discernible visual change from the Existing Condition.

Alternatives 4a, 4b, 4c, 5a, 5b, 5c, 6a and 6b

Transmission Line Information
The Project is not visible from this viewpoint.

Alternatives 1, 3, 4a, 4b, 4c, 5a, 5b, 5c, 6a and 6b
Existing Conditions

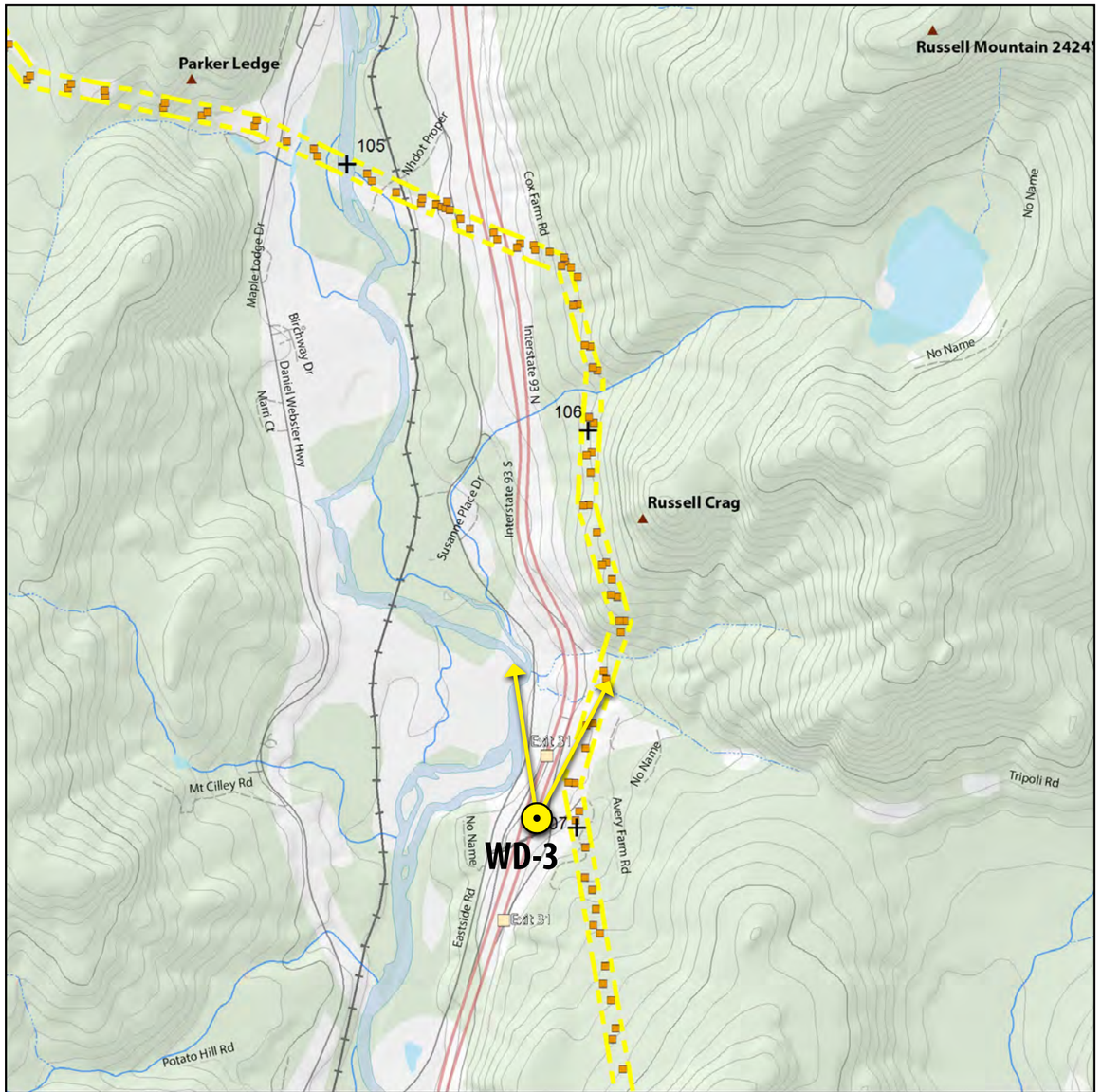
Alternative 2
Simulated Conditions

Northern Pass Transmission Line Project Environmental Impact Statement
South Kinsman Mountain - Lincoln, New Hampshire

LI-5c

Interstate 93 North at Mile 97.4 - Woodstock, New Hampshire

Viewpoint WD-3a



Legend

- Viewpoint
- Existing PSNH ROW
- Proposed New Northern Pass ROW
- Freeway
- Major Road
- Secondary Road
- Hiking Trails
- Mountain Peaks/Natural Features
- Alternative 2 Structure
- Alternative 2 Mile Marker

SOURCE: ESRI 2011; GRANIT 2012; Burns and McDonnell 2013; USFS 2012; Ecology and Environment 2013, DeLorme Data, T.J. Boyle Associates

0 0.25 0.5 Miles

Figure 1
Viewpoint Location Map
Northern Pass Transmission Line Project
Environmental Impact Statement

Figure 2 - Viewpoint Location
SCALE
0 20 40 Miles

Figure 3 - Aerial Context
SCALE
0 200 400 600 Feet

General Information

Base Photograph
Date: 09-17-2013
Time: 12:46 pm
Meteorological Visibility:
Plymouth Airport - 10 miles
Image Size: 4,928 x 3,264 pixels

Camera Properties
Camera Make/Model: Nikon D7000
Sensor Dimensions: 23.6 mm x 15.6 mm
Lens Make/Model: Nikkor DX AF-S 35 mm
Lens Focal Length: 35 mm
35 mm Equivalent Focal Length: 52.5 mm
Approximate Angles of View:
37° wide and 25° high
Camera Height: 1.5 meters (5 feet)

Viewpoint Information
Location: Interstate 93 North at Mile 97.4, Woodstock
Latitude/Longitude: 43.989905°, -71.672487°
Viewpoint Elevation: 792 feet
Viewpoint Name: WD-3
Orientation: Looking Northeast
Looking toward Alternative 2 Mile Marker: 106

Simulation Viewing Notes
The simulation is properly printed on an 11-by-17 inches sheet at actual size. If viewed on a computer monitor, use the highest screen resolution. The simulated image is at the proper perspective when viewed at 23.5 inches from the eye, or at a distance of approx. twice the image height.

Project Design
The simulations are based on the best information available in March 2014.

Alternatives Simulated from this Viewpoint

Alternative 1 - No Action
Transmission Line Information
Distance to Nearest Visible Structure: 2,666 feet
Number of Visible Existing Structures: 6

Alternative 2 - Proposed Action
Transmission Line Information
Distance to Nearest Visible Structure: 1,391 feet
Number of Visible Transmission Structures: 11

Alternative 3
Transmission Line Information
The transmission line is buried in this view and there is no discernible visual change from the Existing Condition.

Alternative 4c
Transmission Line Information
The Project is not visible from this location.

Alternatives 4a, 4b, 6a and 6b
Transmission Line Information
This Project may be buried in this view, if so there is no discernible visual change from the Existing Condition.

Alternatives 5a, 5b and 5c
Transmission Line Information
There is no visible change from the Proposed Action.

WD-3b

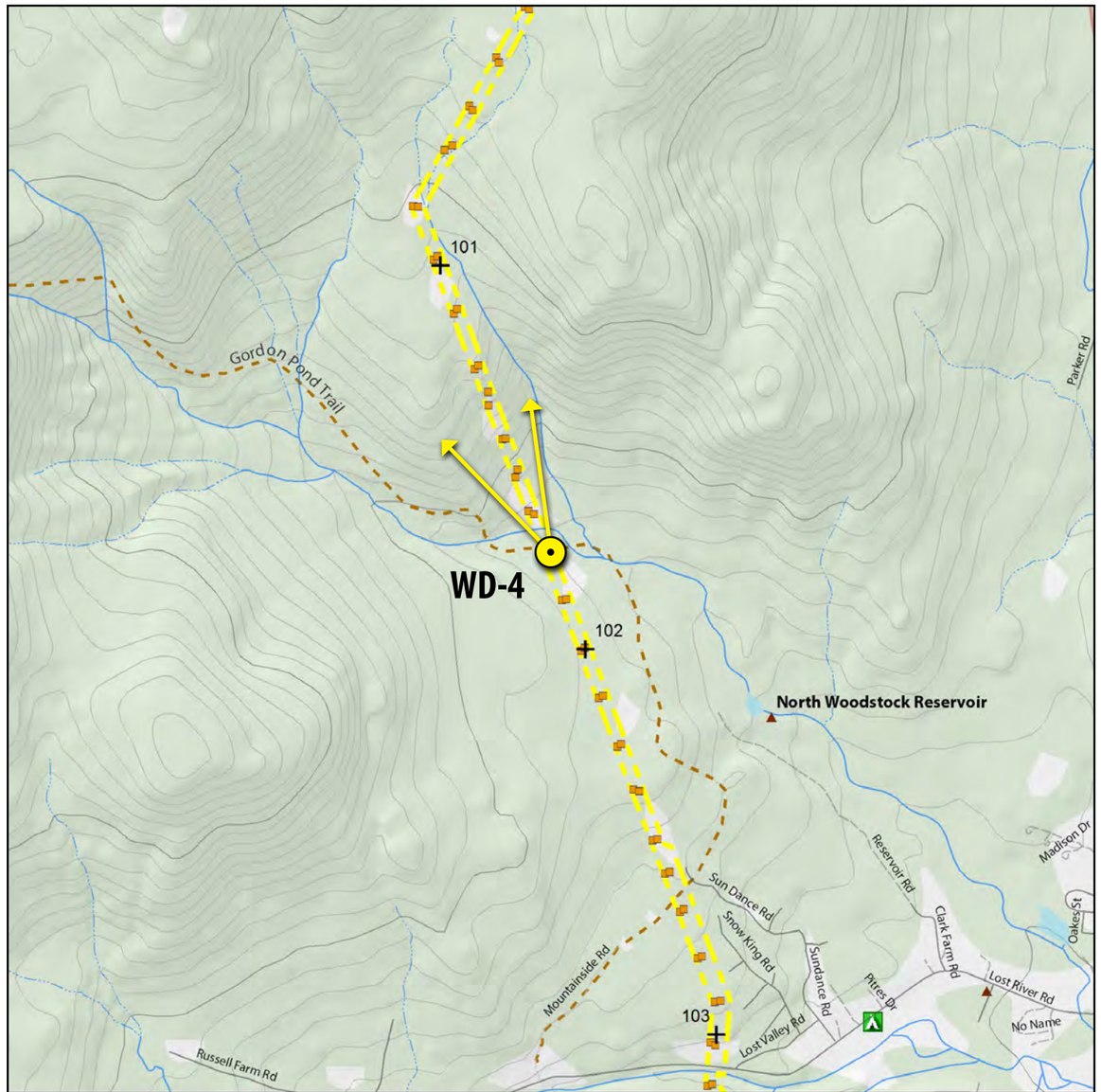
Alternatives 2, 5a, 5b and 5c
Simulated Conditions

Northern Pass Transmission Line Project Environmental Impact Statement
Interstate 93 North at Mile 97.4 - Woodstock, New Hampshire

WD-3c

Gordon Pond Trail - Woodstock, New Hampshire

Viewpoint WD-4a



Legend

- Viewpoint
- Existing PSNH ROW
- Proposed New Northern Pass ROW
- Freeway
- Major Road
- Secondary Road
- Hiking Trails
- Mountain Peaks/Natural Features
- Alternative 2 Structure
- Alternative 2 Mile Marker

Figure 1
Viewpoint Location Map
Northern Pass Transmission Line Project
Environmental Impact Statement

SOURCE: ESRI 2011; GRANIT 2012; Burns and McDonnell 2013; USFS 2012; Ecology and Environment 2013, DeLorme Data, T.J. Boyle Associates

0 0.25 0.5 Miles

Figure 2 - Viewpoint Location
SCALE
0 20 40 Miles

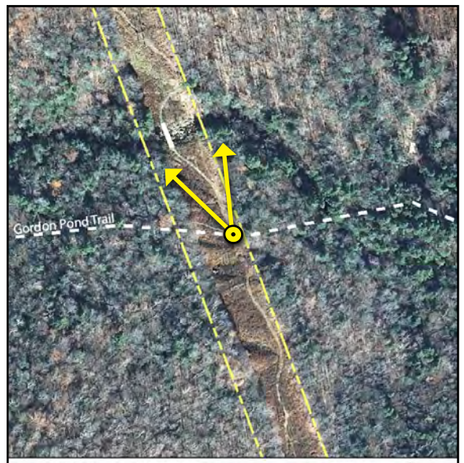


Figure 3 - Aerial Context
SCALE
0 200 400 600 Feet

General Information

Base Photograph
Date: 10-04-2013
Time: 11:21 am
Meteorological Visibility:
Plymouth Airport - 10 miles
Image Size: 4,928 x 3,264 pixels

Camera Properties
Camera Make/Model: Nikon D7000
Sensor Dimensions: 23.6 mm x 15.6 mm
Lens Make/Model: Nikkor DX AF-S 35 mm
Lens Focal Length: 35 mm
35 mm Equivalent Focal Length: 52.5 mm
Approximate Angles of View:
37° wide and 25° high
Camera Height: 1.5 meters (5 feet)

Viewpoint Information
Location: Gordon Pond Trail, Woodstock
Latitude/Longitude: 44.047639°, -71.717829°
Viewpoint Elevation: 1,110 feet
Viewpoint Name: WD-4
Orientation: Looking Northwest
Looking toward Alternative 2 Mile Marker: 101

Simulation Viewing Notes
The simulation is properly printed on an 11-by-17 inches sheet at actual size. If viewed on a computer monitor, use the highest screen resolution. The simulated image is at the proper perspective when viewed at 23.5 inches from the eye, or at a distance of approx. twice the image height.

Project Design
The simulations are based on the best information available in March 2014.

Alternatives Simulated from this Viewpoint

Alternative 1 - No Action

Transmission Line Information
Distance to Nearest Visible Structure: 507 feet
Number of Visible Existing Structures: 5

Alternative 2 - Proposed Action

Transmission Line Information
Distance to Nearest Visible Structure: 502 feet
Number of Visible Transmission Structures: 10

Alternative 3

Transmission Line Information
The transmission line is buried in this view and there is no discernible visual change from the Existing Condition.

Alternatives 4a, 4b, 4c, 5a, 5b, 5c, 6a and 6b

Transmission Line Information
The Project is not visible from this viewpoint.

Alternative 2
Simulated Conditions

Northern Pass Transmission Line Project Environmental Impact Statement
Gordon Pond Trail - Woodstock, New Hampshire

WD-4c

APPENDIX F
FOREST PLAN CONSISTENCY ANALYSIS

APPENDIX F. FOREST PLAN CONSISTENCY ANALYSIS

F.1 INTRODUCTION

The White Mountain National Forest's Land and Resource Management Plan (Forest Plan) provides guidance for managing and protecting natural resources and our visitors' experiences on all National Forest lands. In the Forest Plan, goals, objectives, and desired future conditions present a picture of what the Forest will look like, and what services, products, and experiences it will provide, in years to come. These are not absolute; rather they are a conceptual framework within which project-level decisions can be made. Standards and guidelines provide more concrete direction for implementing projects and activities.

Standards and guidelines are the specific, technical direction for managing resources. Forest-wide standards and guidelines apply across all White Mountain National Forest (WMNF) lands and management activities, unless more restrictive direction exists for a management area (MA). Management Area standards and guidelines apply only to land allocated to a specific MA. Forest-wide and within MAs, a *standard* is a course of action that must be followed, or a level of attainment that must be reached, to achieve management goals and objectives, and can only be changed through an amendment to the Plan. A *guideline* also is a required course of action or level of attainment, but permits operational flexibility to respond to variations in conditions. Guidelines can be modified or not implemented if site-specific conditions warrant, but the rationale for doing so must be documented in a project-level analysis and signed decision.

The existing transmission route that is within the study area of the Project was established before the passage of the National Forest Management Act and the preparation of Forest Plans. The construction and maintenance of the line on National Forest System (NFS) lands was authorized through a special use permit (SUP) under the laws and policies guiding National Forest management at that time (1930's and 1940's). These permits may be amended in whole or in part by the Forest Service when deemed necessary or desirable by the authorized officer to incorporate new terms and conditions required by law, regulation, land management plans, or other management decisions.

In some cases the existing line was constructed on private land that subsequently was purchased by the Federal government to become part of the NFS. In those areas, the line is an easement (property right) that remains in effect and guides the rights of the easement holder regarding operation of overhead transmission lines. Standards and guidelines in the Forest Plan would not apply to authorized activities by the easement holder in these areas except when they implement broader state or federal law that applies to all land (e.g., Clean Water Act).

As part of the analysis for this project, the Forest Plan was reviewed and applicable standards and guidelines were identified. This appendix indicates whether each alternative would be consistent with applicable standards, whether applicable guidelines would be implemented, and how these determinations were made. Consistency determinations are based on the alternative descriptions in Chapter 2, the Applicant proposed mitigation measures (APMs, see **Appendix H**), and the analysis in the draft EIS and associated project file. Alternative 1 – No Action, is not considered as part of this consistency analysis because standards and guidelines only apply if a management action occurs. Selection of Alternative 1 would not result in a SUP, and therefore standards and guidelines would not apply. If an action alternative is selected, all applicable standards and guidelines not expressly excepted in the Record of Decision would be incorporated as requirements in the SUP.

F.2 FOREST-WIDE STANDARDS AND GUIDELINES

FOREST-WIDE	
Standards and Guidelines	**Consistency Analysis**
ALL RESOURCES AND MANAGEMENT AREAS	
GENERAL	
Standards	
S-1. The White Mountain National Forest must follow all applicable laws, executive orders, regulations, rules, and direction established in the Forest Service Manual.	Consistent under all action alternatives. All applicable laws, executive orders, regulations, rules, and direction established in the Forest Service Manual would be followed.
S-2. To protect forest resources when hazardous materials are present, mitigations will be put in place at the appropriate level, depending on the amount and type of material.	Consistent under all action alternatives. With the application of relevant APMs (see **Appendix H**), risks from hazardous materials would be mitigated appropriately.
Guidelines	
G-2. To make sure goals of the various agencies are considered in any management decision, the Forest Service should work cooperatively with the states of New Hampshire and Maine to manage adjacent National Forest and State lands.	Implemented under all action alternatives. The Forest Service would work cooperatively with the state of New Hampshire.
AIR QUALITY	
Guideline	
G-1. Air Quality Related Values (AQRVs), such as aquatic biota, vegetation, and water quality should be protected to the extent possible from adverse impacts related to air quality within the White Mountain National Forest.	Implemented under all action alternatives. With the application of relevant APMs (see **Appendix H**), AQRVs would be protected under all action alternatives.
HERITAGE RESOURCES	
Standards	
S-1. Management of heritage resources must be coordinated with State Historic Preservation Offices (SHPOs), appropriate Tribal Historic Preservation Offices (THPOs), and Federally recognized Indian Tribes and their representatives. Any mitigation plans must include the above consultation, with the addition of The Advisory Council on Historic Preservation (ACHP) when projects might affect resources eligible for the National Register of Historic Places. Consulting parties may include local governments or other interested parties.	Consistent under all action alternatives. The Forest Service would coordinate with the SHPO, appropriate THPOs, and Federally recognized Indian Tribes and their representatives.
S-2. Any proposed Federal or Federally assisted undertaking must, prior to the approval of the expenditure of and Federal funds or issuance of any license,	Consistent under all action alternatives. A Phase IA archaeological investigation and a reconnaissance survey of architectural resources

FOREST-WIDE	
Standards and Guidelines	**Consistency Analysis**
take into account the effect of the undertaking on any district, site, building structure, or object that is included in or eligible for inclusion in the National Register of Historic Places (Section 106, National Historic Preservation Act of 1966, as amended). All proposed undertakings must consider the effect on any National Register listed, eligible, or un-evaluated heritage resource within the Area of Potential Effect (APE) prior to project implementation. The Forest Service must manage properties found to be eligible for National Register listing, or which remain un-evaluated, as if they were listed on the National Register of Historic Places.	was conducted to meet the requirements of Section 106 of the NHPA for identifying historic properties and considering the potential impacts and effects of a Project on archaeological and architectural resources that are National Register listed, eligible, or an un-evaluated heritage resource within the APE.
S-3. Contracts, leases, or permits must include appropriate clause(s) requiring protection of heritage resources.	Consistent under all action alternatives. Any contracts, leases, or permits would include appropriate clause(s) requiring protection of heritage resources.
S-4. The nature and location of heritage resource sites must not be disclosed without line officer approval (36 CFR 296.18).	Consistent under all action alternatives. The nature and location of heritage resource sites would not be disclosed without line officer approval.
S-5. Discoveries of human remains and associated objects must remain in place and protected if encountered. They must be reported immediately to USFS Law Enforcement Officers (LEOs), who will contact Forest Heritage Resource Specialists if appropriate. Work in the area of discovery must cease until LEO and, if applicable, Heritage evaluation is completed.	Consistent under all action alternatives. Discoveries of human remains and associated objects would remain in place and protected if encountered.
S-6. Vandalism, destruction, or unauthorized removal of Heritage resources must receive appropriate investigation under the Archaeological Resources Protection Act or 36 CFR 261 (Prohibitions).	Consistent under all action alternatives. Vandalism, destruction, or unauthorized removal of Heritage resources would receive appropriate investigation under the Archaeological Resources Protection Act.
S-7. Non-Forest Service archaeological research initiatives must be authorized and/or permitted by the Forest Service prior to implementation.	Consistent under all action alternatives. Any non-Forest Service archaeological research initiatives would be authorized and/or permitted by the Forest Service prior to implementation.
Guidelines	
G-1. Heritage resources should be evaluated to determine their eligibility for listing in the National Register of Historic Places. Priority should be placed on situations where resources are most at risk or management options are limited. Examples include lands to be exchanged out of Federal management, lands with shallow soils where heritage resources are especially vulnerable to disturbance, and within project areas where sites may be impacted.	Implemented under all action alternatives. Heritage resources have been preliminarily evaluated to determine their eligibility for listing in the National Register of Historic Places within Project corridors where sites may be impacted. Prior to potential implementation of the Project additional evaluation would occur to determine final eligibility.

FOREST-WIDE	
Standards and Guidelines	**Consistency Analysis**
G-3. The White Mountain National Forest's *Heritage Resource Survey Strategy* should be followed in developing heritage surveys.	Implemented under all action alternatives. The White Mountain National Forest's *Heritage Resource Survey Strategy* was followed in developing heritage surveys.
G-4. Heritage inventories and resulting data should meet current national guidance and professional standards and should be maintained in the Forest Service's corporate database and mapping systems.	Implemented under all action alternatives. Heritage inventories and resulting data have met current national guidance and professional standards and have been maintained in the Forest Service's corporate database and mapping systems.
LANDS	
LAND USE AUTHORIZATIONS (SPECIAL USES)	
Standards	
S-1. Special uses must be managed to best serve the public interest, in accordance with the following: a) Private uses of National Forest System land must not be authorized when such uses can be reasonably accommodated on other lands. b) Special use requests must be reviewed for their compatibility with Forest-wide and management area direction, as well as consideration of environmental values, economic feasibility, and determination of social and economic benefits. c) Upon renewal or transfer of a permit, or as soon as practical, existing uses that are not compatible with the Forest Plan must be brought into compliance. d) New landfill disposal sites or storage, or disposal of radioactive, or other hazardous substances are prohibited. Existing landfill disposal sites must be phased out and closed. e) Permits must not be authorized that create an exclusive or perpetual right of use or occupancy that would in effect grant title to federal land to an authorization holder, or would create the appearance of granting such a right. Examples of such uses include, but are not limited to, cemeteries, monuments, memorials, or major capital improvements by municipal entities.	All action alternatives: Consistency to be determined. Any special use authorizations granted by the WMNF would be managed to best serve the public interest. The EIS analysis will enable the Responsible Official to determine which alternatives, if any, would meet the requirements of this standard.
S-2. Special use proposals that may affect heritage resources (e.g., ground disturbance or potential for discovery and displacement or removal of artifacts) must include an archaeological/paleontological clause.	Consistent under all action alternatives. APMs in **Appendix H** include measures to avoid eligible archaeological resources.

FOREST-WIDE	
Standards and Guidelines	**Consistency Analysis**
S-3. To reduce the proliferation of separate rights-of-way, new transportation, utility, and communication use proposals shall be accommodated within existing corridors to the maximum extent feasible. Mitigation measures shall be determined by project level planning.	Consistent under all action alternatives. Existing transmission routes or roadway corridors would be utilized for the Project to the maximum extent feasible.
S-6. Contracts, leases, or permits must include appropriate clause(s) requiring invasive species control plans to minimize spread to other areas.	Consistent under all action alternatives. Any special use authorizations granted by the WMNF would include appropriate clause(s) requiring invasive species control plans to minimize spread to other areas.
NATIVE AMERICAN RELATIONSHIPS	
Standard	
S-1. Recognized tribes must be consulted early in the planning process regarding proposed management activities that may affect the tribes in order to identify and address tribal interests.	Consistent under all action alternatives. Recognized tribes were consulted early in the planning process to identify and address tribal interests.
Guideline	
G-1. Environmental documents should disclose potential effects on cultural resources, traditional uses, and tribal areas of special interest that include tribal cultural values, properties, uses, and species of special concern.	Not applicable under all action alternatives. Federally recognized Indian tribes, non-Federally recognized Indian tribes, and other tribal organizations have been contacted through Section 106 and the EIS process. To date, no responses have been received identifying any of these resources; therefore, the draft EIS does not disclose potential effects on these resources.
NON-NATIVE INVASIVE SPECIES	
GENERAL	
Standards	
S-1. Non-native invasive species must not knowingly be brought onto the Forest for any project, landscaping, or other purpose.	Consistent under all action alternatives. With the application of relevant APMs (see **Appendix H**), construction contractors would be trained to identify invasive plant species and non-native invasive species would not knowingly be brought onto the Forest for the Project.
S-2. Forest projects or approvals must consider weed prevention measures to minimize the chances of new infestations occurring because of project activities. The intent is not to prohibit all ground disturbances or to require exhaustive mitigation measures for minor activities, but to take action where possible to minimize opportunities for invasive species to become established.	Consistent under all action alternatives. Any special use authorizations granted by the WMNF would include appropriate weed prevention measures.

FOREST-WIDE	
Standards and Guidelines	**Consistency Analysis**
S-3. In revegetation or rehabilitation efforts, native or non-persistent (annual, biannual, or sterile) species must be used.	Consistent under all action alternatives. With the application of relevant APMs (see **Appendix H**), all revegetation or rehabilitation efforts would utilize native or regulator-approved seed mixes.
S-4. Gravel and fill must come from weed-free sources. The Forest Service will be available to work with owners of local gravel sources to identify weed-free borrow material in their pits. The entire pit or fill area need not be identified as weed-free; material may be used that is not likely to contain invasive plants or seeds. If gravel or fill cannot be identified as weed-free, project monitoring must be conducted for three years following implementation to assure no new infestations occur. If infestations are found, eradication must occur within a suitable timeframe to prevent further spread.	Consistent under all action alternatives. With the application of relevant APMs (see **Appendix H**), all gravel and fill used for the Project would come from weed-free sources. If gravel or fill cannot be identified as weed-free, project monitoring would be conducted for three years following implementation to assure no new infestations occur.
S-5. When sources of certified weed-free mulch and seed are available locally at reasonable cost, they must be used on erosion control projects requiring mulch and seed.	Consistent under all action alternatives. With the application of relevant APMs (see **Appendix H**), native or regulator-approved seed mixes would be used for any revegetation that is required and certified weed and invasive-free straw bales would be used for erosion and sediment control.
S-6. Heavy equipment must be visibly free of seeds or plant material prior to entering the Forest for project work. In order to minimize the spread of existing invasive plants, heavy equipment must be cleaned to be visibly free of seeds or plant material when moving between project units if invasive plants exist in areas being vacated, or if units have not been surveyed for invasive plants. The Forest Service will work to educate heavy equipment operators regarding these standards prior to project implementation.	Consistent under all action alternatives. With the application of relevant APMs (see **Appendix H**), heavy equipment will be inspected by the Environmental Monitor to ensure it is visibly free of seeds or plant material prior to entering the Forest for project work, and cleaned and visibly free of seeds or plant materials prior to moving equipment to other sections of the project area if invasive plants exist, or have not been surveyed for, in the area being vacated. Environmental Monitors will educate heavy equipment operators regarding this requirement.
S-7. Non-native invasive plants or their parts removed during eradication efforts must be disposed of in a manner that prevents new infestations elsewhere.	Consistent under all action alternatives. With the application of relevant APMs (see **Appendix H**), any invasive species that are located within areas of soil disturbance would be removed and disposed of appropriately.
Guideline	
G-1. Areas under existing permits should have on-site non-native invasive species control plans in place to minimize spread to other areas.	Implemented under all action alternatives. All permits issued for the Project by the WMNF would require an on-site non-native invasive species control plan.

FOREST-WIDE	
Standards and Guidelines	**Consistency Analysis**
TRANSPORTATION SYSTEM	
Guidelines	
G-1. Roadside clearing widths should be minimized (without compromising safety standards) to retain shade for invasive plant suppression.	Implemented under all action alternatives. Roadside clearing widths would be minimized to the extent practicable without compromising safety.
G-2. If non-native invasive plants are present, roadside maintenance operations should be scheduled to minimize spread into new areas (e.g., prior to seed out).	Implemented under all action alternatives. Roadside maintenance operations should be scheduled to minimize spread into new areas.
RARE AND UNIQUE FEATURES	
Standards	
S-1. All project sites must be investigated for the presence of TES species and/or habitat prior to beginning any authorized ground-disturbing activity at the site. TES plant surveys must be completed for all new ground-disturbing projects, unless biologists/botanists determine TES species occurrence is unlikely (e.g., no habitat exists).	Consistent under all action alternatives. All project sites have been investigated for the presence of TES species and/or habitat in conjunction with the development of the EIS, as well as the Vegetation Resources and Wildlife Resources Technical Reports (http://www.northernpasseis.us/library/documents).
S-2. Unless conservation approaches have already been developed for a species, individual site prescriptions must be developed for each identified TES plant species occurrence to provide specific habitat conservation actions for those plant species. Individual site prescriptions must similarly be developed for all fixed TES wildlife habitat features (e.g., den sites, nest sites, or other features necessary for the reproductive success of the animal). Until conservation approaches or specific site prescriptions are developed, new management actions that would negatively alter habitat conditions necessary to support the species must not be allowed within 100 feet of the plant(s) or within one quarter mile of the wildlife habitat feature(s).	Consistent under all action alternatives. With the application of relevant APMs (see **Appendix H**), identified TES plant species and fixed TES wildlife habitat features would be protected by specific conservation measures. In addition, the Applicant would need to comply with the ESA, as well as the state of New Hampshire RSA 212-A:6 in order to protect TES species and their habitats in order to successfully permit the Project. Any individual site prescriptions developed through these processes would be followed.
Guidelines	
G-3. Use restrictions and other mitigative measures may be implemented to protect or improve habitat for threatened, endangered, or sensitive species. See individual management areas for additional direction.	Implemented under all action alternatives. With the application of relevant APMs (see **Appendix H**), impacts to habitat for threatened, endangered, or sensitive species would be minimized. In addition, the Applicant would need to comply with the ESA, as well as the state of New Hampshire RSA 212-A:6 in order to protect TES species and their habitats in order to successfully permit the Project. Any use restrictions and other mitigative measures developed through these processes would be followed.

FOREST-WIDE	
Standards and Guidelines	**Consistency Analysis**
GRAY WOLF	
Guidelines	
G-2. Known winter deeryards should be protected and deeryard conditions should be improved where possible.	Not implemented under Alternatives 2 and 5b. A winter deeryard would be impacted by Alternatives 2 and 5b due to vegetation clearing.
INDIANA BAT	
Standard	
S-1. Standards for *wildlife reserve trees* in the Wildlife resource section apply.	Not applicable. See standards for *wildlife reserve trees* in the Wildlife resource section of this appendix for rationale.
Guideline	
G-1. Guidelines for *wildlife reserve trees* in the Wildlife resource section apply.	Not applicable. Guidelines to protect snags and cavity trees (*Wildlife Reserve Trees* G-1 and G-2) are not applicable because they are directly tied to the wildlife reserve tree standards, which are not applicable to this project.
SMALL WHORLED POGONIA	
Standards	
S-2. Evaluate projects with ground-disturbing activities to determine the potential for small whorled pogonia habitat to occur within the influence of the project area.	Consistent under all action alternatives. The small whorled pogonia model developed for this Project did not identify any potentially suitable habitat within the Project corridor and no small whorled pogonia were observed in the WMNF during field surveys. In addition, if new or site-specific information determines the potential for the small whorled pogonia to exist in the Project corridor, the species would be protected through the application of relevant APMs (see **Appendix H**) and agency consultation.
CANADA LYNX	
Standards	
S-3. Unless a broad-scale assessment of landscape patterns that compares historical and current ecological processes and vegetation patterns is developed, disturbance must be limited in the following manner: a) If more than 30 percent of lynx habitat within a LAU is currently in unsuitable condition, no further reduction of suitable conditions shall occur because of vegetation management activities by federal agencies	Consistent under all action alternatives. Alternative 2 proposes clearing of vegetation to widen the transmission line route in an area that is currently suitable foraging habitat. Long-term maintenance typically would remove existing scrub-shrub communities that provide snowshoe hare habitat within the existing corridor periodically. As part of the APMs (see **Appendix H**), the Applicant would work with the Forest Service to ensure currently

FOREST-WIDE	
Standards and Guidelines	**Consistency Analysis**
unless the activity is proposed specifically to improve future snowshoe hare habitat. b) Vegetation management projects in lynx habitat should promote increases in suitable snowshoe hare habitat and retain/enhance habitat conditions for important alternate prey (particularly red squirrel) where possible. Overstory harvest treatments that retain or enhance existing softwood understories are allowed provided denning habitat within the LAU does not fall below 10 percent.	suitable lynx foraging habitat in areas authorized through a SUP would remain suitable lynx foraging habitat after implementation. Alternative 3 would not alter habitat in any way not currently approved within the existing PSNH SUPs (i.e., regular mowing). Remaining alternatives would be along existing major roads and would not alter habitat suitability.
S-5. Within an LAU, denning habitat in patches generally larger than five acres, comprising at least 10 percent of lynx habitat must be maintained. Where less than 10 percent denning habitat is currently present within an LAU, management actions that would delay development of denning habitat structure must be deferred. Projects may still move forward if other lynx habitat areas within the LAU can be identified that will not be treated (e.g., RNAs) and which will subsequently move into denning conditions at some future time.	Consistent under all action alternatives. The intent of this standard is to not fragment blocks of denning habitat and try to achieve 5 acre blocks. The Project would be consistent with S-5 because the Project would not reduce habitat below 10 percent within the LAU and the project would not fragment blocks of denning habitat.
S-6. On-the-ground management actions must not change more than 15 percent of lynx habitat within an LAU to an unsuitable condition within a 10-year period.	Consistent under all action alternatives. The majority of the Project corridor in the WMNF is within the existing PSNH transmission route; therefore, the Project would not create a cumulative change that would exceed 15 percent in any LAU.
Guidelines	
G-5. Key linkage areas must be maintained to allow lynx movement. Native plant communities and patterns, and habitat for potential lynx prey, should be maintained or enhanced within identified key lynx linkage areas where feasible. Habitat connectivity (e.g., along large riparian zones and across major ridges, and prominent saddles) should be retained across the landscape to support lynx movement. Creation of permanent linear routes (e.g., roads, fuel breaks, trails) that could facilitate increased over-the-snow access by competitors should not be built on ridges and saddles or in riparian zones. Clearcuts should be placed near softwood cover where possible.	Implemented under all action alternatives. The application of relevant APMs (see **Appendix H**) would minimize disturbance to key linkage areas and habitat for Canada lynx. In addition, consultation with the USFWS regarding the ESA, would involve the development of minimization measures, as appropriate, for disturbance to key linkage areas and habitat for Canada lynx; these conservation measures would ensure that the project is in compliance with G-5.
G-6. Snow compaction off designated trails and roads should be minimized when authorizing and monitoring special uses in lynx habitat.	Implemented under all action alternatives. Snow compaction is not anticipated for construction or operation of the Project.
G-8. Dirt and gravel roads (particularly those that could become highways) traversing lynx habitat should not be paved or otherwise upgraded (e.g., straightening of curves, widening of roadway) in a manner that is likely to	Implemented under all action alternatives. Existing construction access and maintenance roads would closed to public use, except where they

FOREST-WIDE	
Standards and Guidelines	**Consistency Analysis**
lead to significant increases in traffic volumes, traffic speeds, or would contribute to development or increases in human activity in lynx habitat, unless road safety hazards exist.	are designated trails, and would not be upgraded to increase human activity.
BICKNELL'S THRUSH	
Standard	
S-1. Projects must not result in a net decrease of suitable Bicknell's thrush habitat.	Consistent under all action alternatives. The WMNF model and project-specific modeling indicate that the Project does not cross suitable Bicknell's thrush habitat; therefore, the Project would not affect suitable habitat.
RECREATION	
GENERAL	
Standard	
S-2. Current development levels in the backcountry will be maintained or lowered where appropriate.	Alternative 2: Inconsistent. This standard was intended to help the Forest meet the Forest Plan goals and objectives of managing consistent with the Recreation Opportunity Spectrum (ROS) framework and minimizing increased development in the backcountry. Construction of additional, larger towers and lines within the existing transmission route would increase the development level in the backcountry and increase inconsistencies in some ROS classes. Alternative 2 would include a Forest Plan Amendment to recognize inconsistencies of the Project with S-2 (see **Appendix C**). All other action alternatives: Consistent. Project would be buried in the backcountry, so development levels and consistency with ROS classes would not change, or would not be in the backcountry where they would be authorized by SUP.
MOTORIZED DISPERSED RECREATION (MOTORIZED TRAILS)	
Winter Motorized Trails	
Standards	
S-2. The White Mountain National Forest will remain closed unless designated open to snowmobile and all-terrain vehicle (ATV) use.	Consistent under all action alternatives. No Project related snowmobile or ATV use would occur in areas not authorized for such a use.

FOREST-WIDE	
Standards and Guidelines	**Consistency Analysis**
S-3 Motorized use is permitted on designated motorized trails only. Off trail cross-country use is prohibited.	Consistent under all action alternatives. No Project related motorized use would occur in areas not authorized for such a use.
Summer Motorized Trails	
Standard	
S-1. Summer motorized trail use is prohibited.	Consistent under all alternatives. No Project related motorized use would occur in areas not authorized for such a use through a SUP.
RIPARIAN AND AQUATIC HABITATS	
Standards	
S-1. All appropriate state and federal permits must be acquired prior to implementing management activities within wetlands, floodplains, streams, or ponds.	Consistent under all action alternatives. Prior to construction, the Applicant would obtain permits from the U.S. Army Corps of Engineers under Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act and from the NH DES under RSA 485-A(12) Water Pollution and Waste Disposal, and RSA 485-A(17) Terrain Alteration. Those permits will guide construction, operation and maintenance of the project. The Applicant would also comply with Executive Order 11988, Floodplain Management.
S-2. Projects requiring the use of heavy machinery within the wetted area of a stream or pond must have hazardous material spill kits on site.	Consistent under all action alternatives. The application of relevant APMs (see **Appendix H**) would ensure hazardous material spill kits are on site where the Project corridor is within the wetted area of a stream or pond.
S-3. Crossing of perennial streams with motorized vehicles for recreational and commercial purposes must be done at designated locations.	Consistent under all action alternatives. The application of relevant APMs (see **Appendix H**) would ensure crossing of perennial streams with motorized vehicles would be done at designated locations identified in the Project's Erosion Prevention and Sedimentation Control (EPSC) plan.
S-4. Acceptable stream flow must be maintained during construction on all fish bearing streams.	Consistent under all action alternatives. The application of relevant APMs (see **Appendix H**) would ensure an acceptable stream flow would be maintained on all fish bearing streams during construction.
Guidelines	
G-1. Tree cutting and harvest should not occur within 25 feet of the bank of mapped perennial streams, the high water mark of a pond, or a identified natural vernal pool, unless prescribed to benefit hydrological or ecological function of the associated stream, pond, or riparian area. Exceptions to this	Not applicable for any alternative. Tree clearing would be to protect infrastructure, an identified exception to this guideline. Shrubs would be planted in the riparian management zone in areas authorized by a SUP to provide shade, bank stability and some riparian habitat.

<table>
<tr><th colspan="2">FOREST-WIDE</th></tr>
<tr><th>Standards and Guidelines</th><th>Consistency Analysis</th></tr>
<tr><td>include tree removals needed to clear a designated stream crossing, maintaining an existing road or previously cleared skid road that cannot be relocated, or protecting human safety or infrastructure. Trees (greater than 4 inch DBH) cut or moved in this zone should be placed in a fashion that benefits riparian functions or aquatic habitats when possible.</td><td></td></tr>
<tr><td>G-2. Uneven-aged silvicultural practices should be used within the Riparian Management Zone (RMZ) along all perennial streams, lakes, ponds, and vernal pools. Cuts should be designed to maintain a relatively continuous forest canopy for the protection and maintenance of water quality, dead wood recruitment, hydrologic function, wildlife habitat, and scenic values. Regeneration group cuts should be limited to less than one acre in size. Exceptions may apply in areas deemed important for maintaining beaver colonies. In the absence of on-the-ground riparian mapping, width of RMZs should be defined as in the Table 2-01.

Table 2-01. Width of RMZ for Specific Aquatic Features
<table>
<tr><th>Aquatic Feature</th><th>Width of RMZ* (feet)</th></tr>
<tr><td>1st and 2nd order streams</td><td>75’</td></tr>
<tr><td>3rd order streams</td><td>275’</td></tr>
<tr><td>4th and larger order streams</td><td>575’</td></tr>
<tr><td>Lakes, ponds, and vernal pools</td><td>75’</td></tr>
</table>
*These widths may vary on the ground and may be modified at the project level if a hydrologist or biologist maps the actual riparian zone.</td><td>Alternatives 2 and 5b: Guideline not implemented. Vegetation must be cleared to protect infrastructure and ensure safe operation of the lines and some clearing would occur near perennial streams. Shrubs would be planted in the riparian management zone in areas authorized by a SUP to provide shade, bank stability, and some riparian habitat.

All other action alternatives: Implemented. Alternative 3 would occur within the existing cleared transmission route and would not alter vegetation in any way not currently authorized (i.e. regular mowing). Remaining alternatives would be along existing major roads in areas that would be authorized by a SUP and would remove individual trees only as needed to provide a narrow burial corridor adjacent to the road.</td></tr>
<tr><td>G-4. Treetops and slash from commercial timber harvesting operations should not remain in any perennial stream, pond, lake, wetland, or vernal pool.</td><td>Implemented under all action alternatives. No commercial timber harvesting is proposed. Additionally, the application of relevant APMs (see Appendix H) would ensure treetops and slash from tree removal would not remain in any perennial stream, pond, lake, wetland, or vernal pool.</td></tr>
<tr><td>G-5. New skid roads, classified roads, trails, and walk-in campsites should not be located within the stream or pond management zone, which is a minimum of 50 feet in width. The width of the zone increases 20 feet in width with each increase of 10 percent in side slope. If any of the above need to be located within the zone, additional measures to minimize sedimentation should be taken.</td><td>Implemented under all action alternatives. The application of relevant APMs (see Appendix H) would ensure new skid roads would not be located within the stream or pond management zone.</td></tr>
</table>

FOREST-WIDE	
Standards and Guidelines	**Consistency Analysis**
G-6. New timber log landings, developed campsites, and permanent facilities should not be located within 100 feet of a perennial stream or the high water mark of a pond. If they need to be located within 100 feet, additional measures to prevent direct runoff into surface waters and to minimize sedimentation should be taken.	Implemented under all action alternatives. The application of relevant APMs (see **Appendix H**) would ensure new timber log landings and permanent facilities would not be located within 100 feet of a perennial stream or the high water mark of a pond.
G-7. Existing roads, facilities, campsites, or trails within 100 feet of perennial streams or ponds should be considered for relocation as part of normal project planning, except when doing so would result in greater overall impact to the land or water resource.	Implemented under all action alternatives. The application of relevant APMs (see **Appendix H**) would ensure existing towers within 100 feet of perennial streams or ponds would be considered for relocation except when doing so would result in greater overall impact to land or water resource.
G-8. Known springs should be protected from human impact.	Implemented under all action alternatives. The application of relevant APMs (see **Appendix H**) would ensure known springs would be protected from human impact.
G-9. Specific protection measures will be prescribed on a site-by-site basis for intermittent and ephemeral streams. These streams should not be permanently filled or relocated because of skidding operations. Sites where temporary water diversions or channel fill is necessary will be functionally restored after project completion.	Implemented under all action alternatives. The WMNF would prescribe site-specific protection measures as necessary and with the application of relevant APMs (see **Appendix H**), streams would not be permanently filled or relocated because of skidding operation. Sites where temporary water diversions or channel fill is necessary would be functionally restored after project completion.
G-10. Naturally occurring downed wood should not be removed from streams, floodplains, wetlands, ponds, or vernal pools unless needed to protect culverts, bridge crossings, existing infrastructure, or human safety.	Implemented under all action alternatives. Naturally occurring downed wood would not be removed from streams, floodplains, wetlands, ponds, or vernal pools unless needed to protect culverts, bridge crossings, existing infrastructure, or human safety.
G-11. Naturally occurring vernal pools identified during project planning should not be altered as a result of skidding or construction activities.	Not implemented under Alternatives 2 and 3. Vernal pools would be impacted by construction activities. With implementation of APMs listed in **Appendix H**, impacts to vernal pools would be minimized. Implemented under Alternatives 4a, 4b, 4c, 5a, 5b, 5c, 6a, 6b. No vernal pools would be impacted by construction activities on the WMNF.
G-12. Management activities should avoid soil rutting that could lead to amphibian migration barriers between uplands and vernal pools.	Implemented under all action alternatives. Vernal pools would be impacted by construction activities under Alternatives 2 and 3; however, the SUP would include requirements to prevent soil rutting that could result in migration barriers between uplands and vernal pools.

FOREST-WIDE	
Standards and Guidelines	**Consistency Analysis**
	Alternatives 4a, 4b, 4c, 5a, 5b, 5c, 6a, 6b would not impact vernal pools, and the SUP would include requirements to prevent soil rutting that could result in migration barriers between uplands and vernal pools.
G-15. Trees that directly provide structure to the streambanks and channels of intermittent streams should be retained.	Alternatives 2 and 5b: Guideline not implement. Trees must be removed to protect infrastructure and some may be along the banks of intermittent streams. Shrubs would be planted in the riparian management zone in areas authorized by a SUP to provide shade, bank stability and some riparian habitat. Alternative 3: Not applicable. There are currently no trees in the portion of the existing corridor that would be affected. All other action alternatives: Implemented. Burial would be beneath the road surface or previously disturbed shoulder in areas that would be authorized by a SUP so tree removal would be very limited and should retain trees that provide structure to streambanks and channels.
G-16. Permitted construction activities in streams identified as having a fisheries value should not occur during the egg incubation period of October through April in areas where potential sedimentation would be detrimental to egg survival.	Implemented under all action alternatives. Activities in streams having a fisheries value would be planned to occur in May through September.
SCENERY MANAGEMENT	
Standards	
S-2. Scenic Integrity Objectives will be met by: a) Applying the technical principles and guidelines outlined in the National Forest Landscape Management Handbook series, specifically for timber, roads, utilities, recreation and ski areas (see FSM 2380.61 – Current Publications). b) Following examples of Scenic Integrity Objectives found in Appendix H of *Landscape Aesthetics – A Handbook for Scenery Management*. c) Following current and/or future guidelines developed specifically for the White Mountain National Forest to achieve Scenic Integrity Objectives within individual management areas.	Consistent under all action alternatives. S-2 provides information related SIOs that must be followed whenever SIOs are to be met by a project. While meeting of SIOs varies by alternative, whenever they will be met it will be done by applying the technical principles and guidelines outlined in the: National Forest Landscape Management Handbook series (see FSM 2380.61 – Current Publications), examples of Scenic Integrity Objectives found in **Appendix H** of *Landscape Aesthetics – A Handbook for Scenery Management*, and Forest Plan scenery guidelines.
Guideline	
G-1. All management activities should meet or exceed Scenic Integrity Objectives established for the Forest through the Scenery Management System (SMS)	Alternatives 2 and 5b: Guideline not implemented. Tower installation would be consistent with a SIO of "Very Low" and inconsistent with

FOREST-WIDE	
Standards and Guidelines	**Consistency Analysis**
outlined in *Agriculture Handbook 701, Landscape Aesthetics – A Handbook for Scenery Management*.	all other SIOs. Both alternatives propose tower construction in areas authorized through a SUP with SIOs other than "Very Low." All other action alternatives: Implemented. Burying the Project where it would be authorized through a SUP would be consistent with all SIOs.
TRANSPORTATION SYSTEM	
ROAD MANAGEMENT	
Standard	
S-2. Temporary roads must be decommissioned upon completion of the activity for which they were authorized.	Not applicable. No new roads of any type are proposed in the WMNF under any alternative.
ROAD MAINTENANCE	
Standards	
S-1. Commercial users must be responsible for all winter and summer maintenance associated with their activities.	Consistent under all action alternatives. The Applicant would be responsible for all winter and summer maintenance associated with their activities.
S-2. Roads and related facilities maintained for winter use must be designed and maintained to protect investment, resources, and to ensure public safety.	Consistent under all action alternatives. The Applicant would design and maintain Project roads intended for winter use to protect investment, resources, and to ensure public safety.
VEGETATION MANAGEMENT	
Standards	
S-2. Whole tree removal is limited to soils with sufficient nutrient concentration and nutrient replenishment capacity to support the new or residual stand of vegetation, maintain soil productivity, and meet other resource objectives.	Consistent under all action alternatives. The application of relevant APMs (see **Appendix H**) would ensure whole tree removal would be limited to soils with sufficient nutrient concentration and nutrient replenishment capacity to support the new or residual stand of vegetation, maintain soil productivity, and meet other resource objectives.
S-3. All tops and limbs from harvested trees must be scattered and left onsite when harvesting on outwash sands or soils shallow to ledge.	Consistent under all action alternatives. The application of relevant APMs (see **Appendix H**) would ensure all tops and limbs from harvested trees would be scattered and left onsite when harvesting on outwash sands or soils shallow to ledge.
S-4. State of Maine and State of New Hampshire Best Management Practices must be met or exceeded.	Consistent under all action alternatives. State of New Hampshire Best Management Practices would be met or exceeded.

FOREST-WIDE	
Standards and Guidelines	**Consistency Analysis**
Guidelines	
G-2. Timber management prescriptions adjacent to trail corridors should be modified to protect trail- and recreation-related values (e.g., uncut zones, slash disposal, trail relocation, and/or use of uneven-aged management).	Alternative 2: Not implemented. The Project is a linear corridor with necessary clearing limits. Trail experience would be affected and trail relocation for trails that cross the Project corridor is not feasible. All other alternatives: Implemented. The Project would be located underground wherever it would be near a trail.
G-5. Where exposure of mineral soil is expected, skid roads should generally be located on grades of less than 20 percent, with only short steeper pitches.	Implemented under all action alternatives. The application of relevant APMs (see **Appendix H**) would ensure skid roads would generally be located on grades of less than 20 percent, with only short steeper pitches, where exposure of mineral soil is expected.
G-7. Harvesting in hardwood stands adjoining deer wintering areas should occur during the winter when needed to provide browse.	Implemented under all action alternatives. The application of relevant APMs (see **Appendix H**) would ensure harvesting in hardwood stands adjoining deer wintering areas would occur during the winter.
G-8. Logging slash within 50 feet of a maintenance level 3 road, a trail, or private property should be treated or removed. Slash may be treated or removed at a greater distance when necessary to protect resource values.	Implemented under all action alternatives. The application of relevant APMs (see **Appendix H**) would ensure logging slash within 50 feet of a maintenance level 3 road, a trail, or private property would be treated or removed.
WATER RESOURCES	
SOIL AND WATER CONSERVATION PRACTICES	
Standards	
S-1. Soil and Water Conservation Practices (FSH 509.22) must be developed and documented for activities that could affect water and soil resources.	Consistent under all action alternatives. The application of relevant APMs (see **Appendix H**) would ensure Soil and Water Conservation Practices (FSH 509.22) would be developed and documented for activities that could affect water and soil resources.
S-2. Water quality must be maintained and protected, except that some discharges may be allowed if they are of limited extent and duration and result in no more than temporary and short term changes in water quality. Such activities shall not permanently degrade water quality or result at any time in water quality lower than that necessary to protect the existing and designated uses. Such temporary and short term degradation is only allowed when all practical and appropriate Soil and Water Conservation Practices are used to reduce impacts to water quality.	Consistent under all action alternatives. The application of relevant APMs (see **Appendix H**) would ensure water quality would be maintained and protected except in some situations where discharges would be limited in extent and duration.

FOREST-WIDE	
Standards and Guidelines	**Consistency Analysis**
S-3. Effective, proven methods (e.g., silt fencing) to reduce concentrated runoff and erosion from construction activities must be used.	Consistent under all action alternatives. APMs (see **Appendix H**) include numerous effective, and proven methods to reduce concentrated runoff and erosion from construction activities. Depending on the site, BMPs may include installation of silt fence, straw wattles, mulch or stump grinding berms, straw bales, or check dams, and covering bare soils with mulch, blown straw, bonded fiber matrix or fiber rolls to protect drainage ways and streams from sediment runoff.
S-4. Where used, sediment traps must be maintained until disturbed sites and/or cut and fill slopes are stabilized.	Consistent under all action alternatives. The application of relevant APMs (see **Appendix H**) would ensure all temporary erosion and sedimentation controls would be maintained until disturbed sites and/or cut and fill slopes are stabilized.
S-5. Permanent stream crossings must be designed to pass the bankfull discharge unimpeded.	Consistent under all action alternatives. The application of relevant APMs (see **Appendix H**) would ensure all permanent new, redesigned, or reconstructed stream crossings would 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).
S-6. Fords must not be used on perennial streams, except on a temporary basis during construction, unless approved for administrative use at designated locations with appropriate mitigations.	Consistent under all action alternatives. The application of relevant APMs (see **Appendix H**) would ensure fords would not be used on perennial streams, except on a temporary basis during construction, unless approved for administrative use at designated locations with appropriate mitigations.
Guidelines	
G-1. New or reconstructed features (e.g., ditches and water bars) intended to capture runoff water should be designed to drain into areas suitable for trapping sediment and not directly into streams, wetlands, and vernal pools.	Implemented under all action alternatives. The application of relevant APMs (see **Appendix H**) would ensure new or reconstructed features (e.g., ditches and water bars) intended to capture runoff water would be designed to drain into areas suitable for trapping sediment and not directly into streams, wetlands, and vernal pools. Should it become necessary to remove water from a trench or other excavation, it would be pumped to a stable, vegetated upland area (where practical) and filtered through a filter bag or siltation barrier.

FOREST-WIDE	
Standards and Guidelines	**Consistency Analysis**
G-2. To minimize turbidity where construction activity occurs in intermittent or perennial watercourses, such activity should be isolated from the streamflow or carried out during low flow periods.	Implemented under all action alternatives. The application of relevant APMs (see **Appendix H**) would ensure construction activity that occurs in intermittent or perennial watercourses would be isolated from the streamflow or carried out during low flow periods.
G-3. Cross drainage on roads and skid trails should use the spacing in the appropriate state Best Management Practices.	Implemented under all action alternatives. The application of relevant APMs (see **Appendix H**) would ensure cross drainage on roads and skid trails would use the spacing in the appropriate state Best Management Practices.
STREAM CROSSINGS	
Guidelines	
G-1. Stream crossings of watercourses and riparian strips should be located as close to perpendicular, and as straight, as is compatible with the topography on either side.	Implemented under all action alternatives. The application of relevant APMs (see **Appendix H**) would ensure stream crossings of watercourses and riparian strips would be made as close to perpendicular and as straight as possible. Vehicular activity within riparian corridors would be limited to the extent practicable.
G-2. Permanent stream crossings should cross at stream segments with Riparian Types 12, 15, and 17.	Implemented under all action alternatives. The application of relevant APMs (see **Appendix H**) would ensure permanent stream crossings would cross at stream segments with Riparian Types 12, 15, and 17.
G-3. All permanent new, redesigned, or reconstructed stream crossings and other instream structures must 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.	Implemented under all action alternatives. The application of relevant APMs (see **Appendix H**) would ensure all permanent new, redesigned, or reconstructed stream crossings would 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).
G-5. Temporary stream crossings on perennial streams should be designed to withstand at least a 25-year flood and pass bankfull flows.	Implemented under all action alternatives. The application of relevant APMs (see **Appendix H**) would ensure temporary stream crossings on perennial streams would be designed to withstand at least a 25-year flood and pass bankfull flows.
G-8. Stream crossings should be installed using techniques to keep streambeds and banks intact.	Implemented under all action alternatives. The application of relevant APMs (see **Appendix H**) would ensure stream crossings would be installed using techniques to keep streambeds and banks intact.

FOREST-WIDE	
Standards and Guidelines	**Consistency Analysis**
FLOODPLAINS AND WETLANDS	
Standard	
S-1. New facilities or structures within the 100-year floodplain must be designed to protect public safety and preserve the beneficial values of floodplains.	Consistent under all action alternatives. The application of relevant APMs (see **Appendix H**) would ensure new facilities or structures within the 100-year floodplain would be designed to protect public safety and preserve the beneficial values of floodplains.
Guidelines	
G-1. New campgrounds and facilities should be located outside the 100-year floodplain and wetlands.	Alternative 2: Guideline not implement. New towers are proposed for placement in wetlands. Associated impacts to wetland resources have been minimized to the extent practicable through siting and design modifications, but cannot be completely avoided. All other action alternatives: Implemented.
G-2. Ensure, as much as possible, that natural drainage patterns are not altered by management activities that negatively impact wetlands.	Implemented under all action alternatives. The application of relevant APMs (see **Appendix H**) would ensure that natural drainage patterns are not altered by management activities that negatively impact wetlands to the extent practicable. The Applicant would avoid major disturbance of individual wetlands and drainage systems during construction to the extent practicable. The extent to which negative impacts could be avoided would vary among alternatives, as discussed in the technical report for Water Resources. Mitigation measures and BMPs for impacts on wetlands would be determined and implemented in consultation with state and federal agencies.
G-3. When implementing ground disturbing activities adjacent to or in wetlands and floodplains, all practical mitigations should be used.	Implemented under all action alternatives. The application of relevant APMs (see **Appendix H**) would ensure all practical mitigations would be used when implementing ground disturbing activities adjacent to or in wetlands and floodplains.

FOREST-WIDE	
Standards and Guidelines	**Consistency Analysis**
G-4. Fragmentation of floodplains and wetlands should be avoided when planning corridors (e.g., for power lines, roads, or trails).	Not implemented under Alternative 3. Alternative 3 would have temporary impacts to wetlands due to the burial of the transmission line. This could create fragmentation to wetlands present if impacts are not properly restored. Furthermore, groundwater hydrology could be impacted due to the burial of the line, which could fragment the flow of groundwater and the surface wetland. Implemented under all other alternatives. Under all other alternatives, floodplains and wetlands would not be fragmented. Under Alternative 2, wetlands would not be fragmented because tower locations would minimize impacts to wetlands and not fragment the wetlands present.
G-5. Wetlands should be managed across the Forest for "no net loss."	Implemented under all action alternatives. Wetland mitigation required by the CWA would ensure a no net loss of wetlands for the Project. Special use permit would require any mitigation for loss of wetlands on the WMNF to occur within the WMNF.
WATER USES	
Standards	
S-1. Projects that withdraw water from surface water features or groundwater must ensure that water is maintained at levels that will protect management uses and Forest resources, including aquatic species, their habitats, and water quality.	Consistent under all action alternatives. The application of relevant APMs (see **Appendix H**) would ensure that surface water features and groundwater is maintained at levels that would protect management uses and Forest resources, including aquatic species, their habitats, and water quality. In addition, the Project would not withdraw water from surface water features or groundwater.
S-2. A site-specific assessment and/or consultation with appropriate agencies must be done to determine instream flow requirements and/or water withdrawal limits.	Consistent under all action alternatives. The application of relevant APMs (see **Appendix H**) would ensure consultation with appropriate state and federal agencies. The Project would be constructed, operated, and maintained in accordance with federal and state permits. The Applicant would also adhere to stipulations in the Certificate of Site and Facility, which is administered by the Site Evaluation Committee.
S-3. Existing and designated instream water uses, and the level of water quality necessary to protect those uses, must be maintained or improved and protected.	Consistent under all action alternatives. The application of relevant APMs (see **Appendix H**) would ensure that existing and designated instream water uses, and the level of water quality necessary to protect those uses, would be maintained or improved and protected.
S-4. State Best Management Practices (BMPs) for well drilling and groundwater protection must be met or exceeded.	Consistent under all action alternatives. The application of relevant APMs (see **Appendix H**) would ensure that applicable BMPs and

FOREST-WIDE	
Standards and Guidelines	**Consistency Analysis**
	specific measures to minimize and avoid impacts on waterbodies would be established during the permit application process in consultation with other appropriate agencies.
WILD AND SCENIC RIVERS	
Standard	
S-1. Manage eligible rivers to maintain their classification and eligibility until Congress designates the segments or decides not to designate them (see Appendix C).	Consistent under all action alternatives. All eligible Wild and Scenic rivers in project corridors are near existing roadside burial portions so all would maintain their classification and eligibility.
WILDLIFE	
WILDLIFE HABITAT MANAGEMENT	
Standards	
S-3. Known active raptor nest areas must be protected. Extent of the protection should be based on proposed management activities, human activities existing before nest establishment, species, topography, vegetative cover, and other factors. A no-disturbance buffer of at least 66 feet is required around nest sites from nest-site selection to fledging (generally March through July); exceptions may occur for some management activities when animals are adapted to human activity. At many sites, conditions will result in the need for a larger buffer to provide adequate protection.	Consistent under all action alternatives. The application of relevant APMs (see **Appendix H**) would ensure that known active raptor nest areas would be protected. The Project corridor would be resurveyed by helicopter for raptor nests prior to construction to identify any new raptor nests in or near the transmission route, so that these may be removed or replaced (with permits) prior to the nesting season, or avoided as needed.
Guidelines	
G-6. Group selection harvest should be emphasized in deer wintering areas (deeryards). Other management methods that would retain dense cover while providing pockets of browse can also be used if group selection is not appropriate.	Not implemented under Alternatives 2 and 5b. Alternatives 2 and 5b would impact deer wintering areas and project requires removal of overstory cover. Implemented under all other action alternatives. The application of relevant APMs (see **Appendix H**) would ensure that group selection harvest would be emphasized in deer wintering areas.
G-7. Roads, trails, and new facilities should be located outside of deer wintering areas.	Implemented under all action alternatives. The application of relevant APMs (see **Appendix H**) would ensure that roads, trails, and new facilities would be located outside of deer wintering areas.

FOREST-WIDE	
Standards and Guidelines	**Consistency Analysis**
G-10. When structures that exceed the height of the adjacent canopy (e.g., cell towers) are proposed, mitigation measures to deter collisions by birds, bats, and other wildlife species should be implemented.	Implemented under all action alternatives. The application of relevant APMs (see **Appendix H**) would ensure that industry best practices would be implemented to reduce the risk of avian collisions with power lines, which are consistent with Avian Power Line Interaction Committee's (APLIC) 2012 guidelines.
G-11. Protection of sensitive habitats, such as wetlands, and den and nest sites for key species, should be considered for protection at the project-level.	Implemented under all action alternatives. Surveys were completed to identify important wildlife and plant habitats within the Project corridor and these are addressed in the environmental analysis. The application of relevant APMs (see **Appendix H**) would ensure that protection of identified sensitive habitats would be considered during implementation.
WILDLIFE RESERVE TREES	
Standards	
S-1. When harvest reduces the basal area of a stand below thirty square feet per acre, uncut patches totaling five percent of the harvested area must be retained, with each at least one quarter acre in size.	Not applicable. The intent of this standard was to ensure timber harvest projects retain snags, cavity trees, and downed logs in areas of regeneration harvest to protect those habitats and provide future structure until the area begins to provide it naturally. It was meant to apply to patches of harvest that will return to a forested condition, not expansion of existing linear transmission projects.
S-2. When timber harvest will leave basal area above thirty square feet per acre, at least six cavity and/or snag trees per acre must be retained. These leave trees should include at least one wildlife tree and three trees exceeding twelve inches DBH per acre when feasible. In areas lacking such cavity trees and snags, trees of the largest available diameters with defects likely to lead to cavity formation should be retained.	Not applicable. As with S-1, this standard was intended to apply to areas of commercial timber harvest, not edges of existing transmission rights-of-way. In addition, this project would not leave any overstory vegetation in areas where tree removal is necessary.
Guidelines	
G-3. Existing standing dead, and dead-and-down woody material, should be retained and not damaged during Forest management activities unless they are considered a safety hazard or the area is being permanently removed from a forest condition (for example, parking lot construction). This applies especially to large (greater than or equal to eighteen inches DBH) hollow or rotten logs and rotten stumps.	Implemented under all action alternatives. The application of relevant APMs (see **Appendix H**) would ensure that existing standing dead, and dead-and-down woody material, would be retained and not damaged during Project activities unless they are considered a safety hazard.

FOREST-WIDE	
Standards and Guidelines	**Consistency Analysis**
G-4. Cull material from harvested trees, especially hollow logs, should be left in the woods.	Implemented under all action alternatives. The application of relevant APMs (see **Appendix H**) would ensure that cull material from harvested trees, especially hollow logs, would be left in the woods.

F.3 MANAGEMENT AREA 2.1 STANDARDS AND GUIDELINES

MANAGEMENT AREA 2.1—GENERAL FOREST MANAGEMENT	
Standards and Guidelines	**Consistency Analysis**
GENERAL	
Guideline	
G-1. Emergency and project-related motorized administrative use may be allowed. Project-related motorized administrative use should consider potential impacts to social conditions and ecological resources in the area.	Implemented under all action alternatives. Existing construction access and maintenance roads would be used within the existing PSNH transmission route and would be closed to public use. Potential impacts from maintenance and emergency repairs have been disclosed in the EIS.
SCENERY MANAGEMENT	
Guidelines	
G-3. For areas with a "High" Scenic Integrity Objective, created openings should be minimally evident from trail, road, or use area vantage points. Maximum observed size should not exceed 4-5 acres. If openings occur, they should appear as natural occurrences and be well-distributed in the viewed landscape.	Alternatives 2 and 5b: Guideline not implemented. The Project under Alternative 2 would be evident from many trail, road, and use area vantage points. Under Alternative 5b it would be visible from Route 112. From some points in each alternative, the additional clearing would be readily evident (not minimally so) and would not appear natural on the landscape. All other action alternatives: Implemented.
G-4. For areas with a "Moderate" Scenic Integrity Objective, and viewed from superior viewpoints, clearcuts and other noticeable openings should be informal in distribution and designed to be in scale with the observed landscape.	Alternative 2: Guideline not implemented. The Project would be evident from a number of open, higher elevation viewpoints affording expansive or large scale view (superior viewpoints). All other action alternatives: Implemented.
VEGETATION MANAGEMENT	
Guidelines	
G-1. Harvest restrictions, such as time of day, day of the week, or season, should be considered in high-use recreation areas or other sensitive areas, such as private residences, on a case-by-case basis.	Implemented under all action alternatives. The application of relevant APMs (see **Appendix H**) would ensure that harvest restrictions would be considered in high-use recreation areas or other sensitive areas.

F.4 MANAGEMENT AREA 6.1 STANDARDS AND GUIDELINES

MANAGEMENT AREA 6.1 — SEMI-PRIMITIVE RECREATION	
Standards and Guidelines	**Consistency Analysis**
GENERAL	
Guideline	
G-1. Project-related and emergency motorized administrative use may be allowed. This use should consider potential impacts to social conditions and ecological resources in the area. Where applicable, project-related motorized administrative use will be timed to minimize social and ecological impacts.	Implemented under all action alternatives. Existing construction access and maintenance roads would be used within the existing PSNH transmission route and would be closed to public use. Potential impacts from maintenance and emergency repairs have been disclosed in the EIS.
RECREATION	
Guideline	
G-2. Route 112, Jefferson Notch Road, Route 16, and the East Side road, where they pass through this management area, are recognized as inconsistencies to the ROS Class objective. They are acceptable, but where feasible will be managed to minimize impacts on the SPNM experience.	Alternatives 2, 3, 4a, 5a, and 6a: Not applicable. Project would not affect the identified roads except to cross Route 112 at existing transmission line route or road crossings. Alternatives 4b, 4c, 5b, 5c, and 6b: Implemented. Project would traverse the WMNF within the Route 112 roadway, however, any impacts to the recreation experience in this corridor would be localized and occur in the short-term.

F.5 MANAGEMENT AREA 6.3 STANDARDS AND GUIDELINES

MANAGEMENT AREA 6.3 – SEMI-PRIMITIVE WINTER MOTORIZED RECREATION	
Standards and Guidelines	**Consistency Analysis**
GENERAL	
Guideline	
G-1. Project-related and emergency motorized administrative use may be allowed. This use should consider potential impacts to social conditions and ecological resources in the area. Where applicable, project-related motorized administrative use will be timed to minimize social and ecological impacts.	Implemented under all action alternatives. Existing construction access and maintenance roads would be used within the existing PSNH transmission route and would be closed to public use. Potential impacts from maintenance and emergency repairs have been disclosed in the EIS.
RECREATION	
Standard	
S-1. Semi-primitive non-motorized opportunities will be available year-round as the predominant ROS objective. Primitive recreation experience opportunities may be available in specific locations and at particular times of the year.	Consistent under all action alternatives. The Project would not preclude any recreation activities. The semi-primitive non-motorized experience may be affected in the short-term by construction activities.

F.6 MANAGEMENT AREA 8.3 STANDARDS AND GUIDELINES

MANAGEMENT AREA 8.3 – APPALACHIAN NATIONAL SCENIC TRAIL	
Standards and Guidelines	**Consistency Analysis**
GENERAL	
Standards	
S-1. Management of the AT must follow the National Trails System Act, as amended (P.L. 90-543). This Act is implemented according to: a) The Comprehensive Plan for the Protection, Management, Development, and Use of the Appalachian National Scenic Trail. b) Various Memoranda of Agreement, Memoranda of Understanding, and policy statements between the USDA Forest Service, the National Park Service, and the Appalachian Trail Conference (now Appalachian Trail Conservancy). c) Forest Service Direction (FSM, FSH, and supplements).	Consistent under all action alternatives. National Trails System Act guidance would be followed.
S-2. Consistent with existing agreements, the White Mountain National Forest will consult with the Appalachian Trail Conservancy, the Appalachian Mountain Club, and Dartmouth Outing Club (local Appalachian Trail clubs) on management actions that affect AT values.	Consistent under all action alternatives. The Forest Service worked closely with the National Park Service (NPS) during preparation of the DEIS. Further consultation with the NPS, the Appalachian Trail Conservancy and the local trail clubs will occur during the public comment period.
S-5. Corridor lands with easements or outstanding rights will be managed consistent with deed transfer language.	Consistent under all action alternatives. Corridor lands with easements or outstanding rights, such as portions of the existing PSNH transmission route, would be managed consistent with deed transfer language.
S-6. Motorized use is allowed only for administrative purposes.	Consistent under all action alternatives. The SUP would stipulate motorized administrative use within the WMNF.

MANAGEMENT AREA 8.3 – APPALACHIAN NATIONAL SCENIC TRAIL	
Standards and Guidelines	**Consistency Analysis**
Guidelines	
G-2. Management is guided by the following documents. When these documents are amended, they will provide updated guidance and as such will not require Forest Plan amendments. • Appalachian Trail Conference. *Appalachian Trail Design, Construction, and Maintenance* (ATC Stewardship Manual, second edition, 2000). • Appalachian Trail Conference. *Overnight-Use Management Principles*. • Appalachian Trail Conference. *Local Management Planning Guide*. • Appalachian Trail Conference. *Checklist for the Location, Construction and Maintenance of Campsites and Shelters on the Appalachian Trail*. • Local Management Plans for the Appalachian Trail.	Implemented under all action alternatives. Applicable management guidance from these documents, as amended, would be considered.
G-6. Printed public safety messages and signs (other than directional trail signs, or signs at overnight facilities) should be located primarily at trailheads or visitor centers. They may be used at backcountry locations in unusual or unique circumstances.	Implemented under all action alternatives.
LANDS—SPECIAL USES	
Standards	
S-3. New utility lines or rights-of-way are prohibited unless they represent the only feasible and prudent alternative to meet an overriding public need.	Alternatives 2 and 5b: Consistency to be determined. Through the EIS analysis, it will be determined whether either of these alternatives is the only feasible and prudent alternative to meet an overriding public need. A final determination of consistency with S-3 will be documented in the Record of Decision. All other action alternatives: Not applicable. The intent of S-3 is to maintain the recreational experience and visual character of the setting and therefore it only relates to aboveground utility lines and clearing of rights-of-way. The other action alternatives either propose full burial on the WMNF or aboveground portions would be in areas authorized under an existing easement that gives the easement holder the right to construct new utility lines.

MANAGEMENT AREA 8.3 – APPALACHIAN NATIONAL SCENIC TRAIL	
Standards and Guidelines	**Consistency Analysis**
S-4. Impacts to the AT from new utility corridors must be sufficiently mitigated to protect trail values.	Alternatives 2 and 3: Not applicable. The Project would be located in the existing PSNH transmission route in MA 8.3, which is not a new utility corridor. All other action alternatives: Consistent. The Project under these alternatives would intersect the AT underground in existing roadway corridors (which are not currently utility corridors), so the standard applies. However these alternatives would protect the visual character and trail values of the AT.
G-4. New approved utility lines or rights-of-way should be co-located within existing rights-of-way (roads, utility lines, etc.) where practical, and should be limited to a single crossing of the AT.	Implemented under all action alternatives. The Project under Alternatives 2 and 3 would be located within the existing transmission right-of-way where it crosses the AT. The Project under all other action alternatives would intersect the AT underground in existing roadway corridors. Under all action alternatives, the Project would be limited to a single crossing of the AT.
RECREATION	
Standard	
S-2. Management of the AT experience must be compatible with the prescribed recreation experience opportunity class. Lands within this management area should be managed under the semi-primitive non-motorized (SPNM) Recreation Opportunity Spectrum (ROS) class. There are situations where the AT crosses or follows public roads and snowmobile trails, and where developed facilities are present. Current inconsistencies in this ROS Class, such as Appalachian Mountain Club huts, are acceptable but are managed to minimize impacts on the SPNM experience.	Alternative 2: Inconsistent. Construction of additional, larger towers and lines within this MA would result in additional inconsistencies in the SPNM ROS class. While existing inconsistencies are accepted, new inconsistencies would be contrary to this standard. All other action alternatives: Consistent. The Project would occur within existing inconsistencies (transmission route or roadway corridor) and would be buried through this MA, which would minimize impacts on the SPNM experience.
S-3. There are cases where sections of the AT retain a greater sense of the wild (primitive ROS class). These areas will be managed with special concern for these values.	Not applicable: The AT within the project area is in the semi-primitive, non-motorized ROS class, not the primitive class.

MANAGEMENT AREA 8.3 – APPALACHIAN NATIONAL SCENIC TRAIL	
Standards and Guidelines	**Consistency Analysis**
SCENERY MANAGEMENT	
Standards	
S-1. The AT is a Concern Level 1 Travelway, and middleground and background areas on National Forest lands seen from the AT must be managed for scenery in accordance with Scenic Integrity Objectives identified through the Scenery Management System.	Alternatives 2 and 5b: Inconsistent. The Project under Alternative 2 and 5b would be consistent with the SIO of "Very Low," and inconsistent with all other SIOs. Consequently, the Project would be inconsistent with SIOs in multiple MAs (see **Table 4-157**), including in some areas that could be visible in the middleground or background from the AT. Alternatives 2 and 5b would include a Forest Plan Amendment to recognize inconsistencies of the Project with S-1 (see **Appendix C**). All other action alternatives: Consistent. The Project would be buried on the WMNF where it would be visible from the AT, so would be consistent with applicable SIOs.
S-2. All management activities will meet a Scenic Integrity Objective of High or Very High.	Alternative 2: Inconsistent. Alternative 2 would not meet the SIO of High or Very High. Alternative 2 would include a Forest Plan Amendment to recognize inconsistencies of the Project with S-2 (see **Appendix C**). All other action alternatives: Consistent. Project would be buried within this MA, so would not alter the scenery in the long-term.

APPENDIX G
ESA SECTION 7 CONSULTATION

APPENDIX G: ESA SECTION 7 CONSULTATION

Appendix G is comprised of the following five documents:

- USFWS Submittal to Normandeau Associates, Inc., August 24, 2011
- DOE Submittal to USFWS, January 30, 2012
- USFWS Submittal to DOE, September 12, 2013
- DOE Submittal to USFWS, December 9, 2014
- USFWS Submittal to DOE, June 12, 2015

United States Department of the Interior

FISH AND WILDLIFE SERVICE

New England Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5087
http://www.fws.gov/newengland

August 24, 2011

Mrs. Lee Carbonneau
Normandeau Associates, Inc.
25 Nashua Road
Bedford, NH 03110

Dear Mrs. Carbonneau:

This letter responds to your request for information, dated May 4, 2011, on the presence of resources or property under the jurisdiction of the U.S. Fish and Wildlife Service (Service) in relation to Northeast Utilities' Northern Pass Transmission Project through northern and central New Hampshire. The proposed project will transmit power from Hydro-Quebec to the New England Electrical System.

Northern Pass Transmission LLC (Northern Pass) has applied to the Department of Energy (DOE) for a Presidential permit to construct, operate, maintain, and connect a new electric transmission line across the U.S.-Canada border in northern New Hampshire. In order to assess the potential environmental impacts from this proposed federal action, DOE is preparing an Environmental Impact Statement (EIS) pursuant to the National Environmental Policy Act (NEPA) of 1969. Our comments are provided pursuant to the Endangered Species Act (ESA) (87 Stat. 884, as amended; 16 U.S.C. 1531, *et seq.*), the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d), the Migratory Bird Treaty Act (MBTA) (16 U.S.C. 703-712), the Fish and Wildlife Coordination Act (FWCA) 16 U.S.C. 662, *et seq.*, and the Clean Water Act 33 U.S.C. 1344 (m). These comments will assist DOE in the preparation of the EIS.

On March 10, 2010, this office provided information to Ed Bowers of Burns and McDonnell on the presence of resources or property under the jurisdiction of the Service within a project study area that included portions of Coos, Grafton, Belknap, Merrimack, Rockingham, and Strafford Counties. In a more recent correspondence, dated May 4, 2011, you provided the Service with spatial data depicting specific preferred and alternative transmission line routes. The attribute tables associated with this data included information indicating areas of existing rights-of-way (ROW), new ROW, and areas where expansion of existing ROW would need to occur. The Service has compared the spatial data that you provided with our resource and property information, and is providing you with an updated list of Service resources and property that may

be impacted by the alignments. The development of additional alignments may require further review by this office.

In the event that this project proposes impacts to waters of the United States, including wetlands, a Department of the Army permit under Section 404 of the Clean Water Act may be required. In order for the proposed project to comply with the 404(b)(1) Guidelines, as presented in 40 CFR Part 230, it must be demonstrated that the project, as proposed, will be the least environmentally damaging practicable alternative. The Service and other federal agencies may be involved in the review of the permit.

Federally Listed Endangered and Threatened Species

Federal agencies have an obligation under section 7 (a) 2 of the ESA to consult with the Service on any action they fund, permit or carry out, to ensure that the action does not jeopardize the continued existence of listed threatened and endangered species, or result in the destruction or adverse modification of designated critical habitat. Based upon our review, both the federally threatened Canada lynx (*Lynx canadensis*) and the federally endangered Karner blue butterfly (*Lycaeides melissa samuelis*) are known to occur in the project area. No other federally listed or proposed, threatened or endangered species or critical habitat under the jurisdiction of the Service are known to occur in the project area.

Canada Lynx

As indicated above, the Canada lynx (lynx) is known to occur in northern New Hampshire. Until recently, we have assumed that observations of lynx in New Hampshire were of transient individuals dispersing from known populations in Maine and southeastern Canada. However, during the last several years, we have received several reports involving multiple individuals traveling together in northern portions of Vermont and New Hampshire. Because lynx are typically solitary, these observations, taken together with the presence of suitable lynx habitat and historic records, suggest that a breeding population of lynx may become reestablished in this area after having been extirpated during the last century.

During a March 16, 2011 meeting, you informed this office that biologists conducting winter track surveys in Whitefield, New Hampshire had identified the tracks of two or three lynx traveling together along the existing ROW. We request detailed information regarding the observation, including a location map and photos, so that we can include the observations in our records, confirm the identification, and determine the proximity of the observation to the Silvio O. Conte National Fish and Wildlife Refuge. In addition, detailed accounts involving lynx provide important contributions to our ongoing evaluation of the status of lynx in New Hampshire.

While we are not aware of potential activities on existing ROW that may result in direct adverse effects to lynx, new ROW alignments require further analysis because habitat used by lynx may be altered. To assess these impacts, a description of the vegetation in areas where new alignment will be constructed is needed so that we can assess potential impacts to lynx and their habitat. Specifically, we are interested in identifying potential denning habitats that may be present in

landscapes containing other lynx habitat types, such as young coniferous forests that are occupied by snowshoe hares (*Lepus americanus*), the primary prey species for the lynx throughout its range.

While direct impacts to lynx resulting from activities on existing ROW are not expected, indirect impacts are expected because maintenance activities may influence snowshoe hare abundance. To ensure that impacts to lynx are minimized, we recommend further coordination with this office regarding the development and implementation of vegetation maintenance practices that maintain suitable shrub and young coniferous cover for snowshoe hare.

Karner blue butterfly

The Karner blue butterfly is known to occur on existing T-line ROW in Concord, New Hampshire that is identified as the South Section Third Alternative on maps provided to us during a March 16, 2011 meeting. The Karner blue butterfly relies upon wild lupine (*Lupinus perennis*) as its only larval host plant. Because of this, adults often deposit eggs on and around lupine where, upon hatching, the larvae are provided access to lupine. The larvae consume this lupine and eventually pupate, usually in close proximity to the host plant. Since lupine is present in the existing T-line ROW, Karner blue butterflies are expected to be present throughout the year.

In addition to wild lupine, the Karner blue butterfly generally requires tall grass for late afternoon basking and overnight roosting, some shading vegetation to prevent overheating, a source of water, and nectar sources for the adults. A variety of understory plants serve as nectar sources for the adults.

ROW construction and maintenance activities can result in adverse effects to the Karner blue butterfly and their habitat. Therefore, further coordination with this office is required, in the event that this portion of the T-line ROW is selected as the preferred alternative. In addition, it may be possible to develop conservation measures that avoid or reduce adverse effects to the Karner blue butterfly, while allowing construction and maintenance of the ROW. Incorporation of these measures into the project is advisable, and we are available to assist you in development of these measures.

Species of Concern

Four species of concern may occur along the proposed transmission corridor that should be considered in the planning process. These species include the New England cottontail (*Sylvilagus transitionalis*), Bicknell's thrush (*Catharus bicknelli*), northern long-eared bat (*Myotis septentrionalis*), and the small footed bat (*Myotis leibii*). The Service is in the process of evaluating the status of these species, which may result in an ESA listing decision that could impact planning, construction or maintenance of the proposed project. Consideration of these species early in the design process may help avoid future project delays or alteration of operations.

New England Cottontail

The Service announced the New England cottontail as a Candidate Species for listing on September 12, 2006 in the Federal Register (50 CFR part 17). While the New England cottontail is not known to occur along the proposed route, conservation efforts are being directed toward this species throughout southern New Hampshire, and populations may become established in the vicinity of the project area.

The New England cottontail is considered a habitat specialist, insofar as the species is dependent on early-successional habitats typically described as thickets. In addition to the New England cottontail demonstrating a strong affinity for heavy cover, individuals are also reluctant to stray from it (>5 m). Habitats of this type are typically associated with beaver flowage wetlands, idle agricultural lands, power line corridors, railroad ROW, and patches of regenerating forests. In contrast, eastern cottontails (which can often be found living with New England cottontails) appear to have relatively generalized habitat requirements and can often be found in residential-type habitats, such as private lawns, golf courses, and active agriculture areas.

Vegetation management along utility ROW can potentially have a significant impact on the New England cottontail. Long-term management that converts scrub-shrub corridors into an herbaceous-dominated community serves to eliminate preferred habitat and hinder dispersal, while short-term management of shrubs serves as a temporary impact to habitat. These short-term impacts to shrub vegetation are necessary to ensure that successional forces do not proceed to the point where habitat is no longer suitable for the New England cottontail. Given the conservation status of this species, a full federal listing in the future is possible. If listed, vegetation management and other maintenance activities along the corridor may require further coordination with this office. Alternatively, development of management practices that minimize negative impacts and maximize shrubland habitats may be beneficial.

Bicknell's Thrush

The Service is in receipt of a petition, dated August 24, 2010, to list the Bicknell's thrush as a threatened or endangered species and designate critical habitat. As a result, the Service is required to publish a determination as to whether there is substantial information indicating that the petitioned listing may be warranted. The full listing process involves many steps, and notices regarding listing decisions are provided throughout. Through continued coordination, we will keep you informed of our status review for the Bicknell's thrush and its standing.

The Bicknell's thrush is a rare, range-restricted songbird that breeds in the northeastern United States and southeastern Canada, and winters in the Greater Antilles. In the New Hampshire portion of the species range, the Bicknell's thrush breeding activities occur exclusively within high elevation forests dominated by balsam fir (*Abies balsamea*). The degree to which ROW construction and maintenance activities impact Bicknell's thrush habitat is not clear. However, coordination with the Service, New Hampshire Department of Fish and Game and New Hampshire Audubon may provide insights that may allow you to avoid or minimize impacts to the Bicknell's thrush or its habitat.

Eastern-Small Footed and Northern Long-Eared Bat

The Service is in receipt of a petition, dated January 21, 2010, to list the eastern-small footed and northern long-eared bats as threatened or endangered species and designate critical habitat. As a result, the Service, as explained above, is required to publish a determination as to whether there is substantial information indicating that the petitioned listing may be warranted. The subsequent listing process for these two species is identical to that described above for the Bicknell's thrush. Through continued coordination, we will keep you informed of our status review for these two species and their standings. While the Service is not aware of the degree to which construction and maintenance of the proposed project could impact habitat for these two species, coordination between the Service and the New Hampshire Department of Fish and Game may provide insights that may allow you to avoid or minimize impacts to these species and their habitat.

Migratory Bird Treaty Act

The MBTA prohibits taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests, except when specifically authorized by the Department of the Interior. Neither the MBTA nor its implementing regulations at 50 CFR Part 21 provide for permitting of "incidental take" of migratory birds. While take of migratory birds does not include habitat destruction or alteration, direct taking of birds, nests, eggs, or parts thereof is likely to occur if clearing or other ground disturbance occurs within migratory bird nesting habitat during the nesting season, when eggs or young are likely to be present. Vegetation removal activities should not occur during these periods.

A Memorandum of Understanding (MOU) between DOE and the Service regarding Implementation of Executive Order 13186, "Responsibilities of Federal Agencies to Protect Migratory Birds," was signed in 2006. Section F(e) of the MOU obligates DOE to ensure that migratory bird protection and conservation is considered in NEPA project reviews.

Overhead utility lines may cause mortality to birds through electrocution or collision. Any new lines should be installed according to the Avian Power Line Interaction Committee (http://www.aplic.org/) standards.

This project occurs within the Atlantic Northern Forest Bird Conservation Region (BCR) 14. BCRs are ecologically-based units for planning, implementing, and evaluating cooperative bird conservation efforts across North America. Activities associated with this project, particularly in areas of new ROW, may result in direct and secondary impacts to forest-interior breeding birds and their natural habitats. There will be an increase in disturbance of birds from habitat fragmentation, increased populations of some predators due to edge effect, and possibly an increase in the spread of invasive species. These are important issues to consider when developing avoidance, minimization and mitigation measures.

Bald and Golden Eagle Protection Act

The bald eagle (*Haliaeetus leucocephalus*) is known to frequent several lakes and rivers located throughout the project area, including the Connecticut and Merrimack Rivers. Although delisted from the ESA on August 8, 2007, protection of the bald eagle continues under the MBTA and the Bald and Golden Eagle Protection Act (BGEPA). To facilitate compliance with these laws, the Service developed and distributed the "National Bald Eagle Management Guidelines" that provide recommendations for avoiding deleterious impacts to these birds (http://www.fws.gov/pacific/eagle/NationalBaldEagleManagementGuidelines.pdf). Several measures that are specific to transmission lines were included among the recommendations in these guidelines, including avoidance of important eagle use areas, such as nesting, foraging and wintering habitats. In instances where avoidance may not be possible, implementation of best management practices to prevent collision or electrocution of eagles is recommended. To address these issues, we advise that you contact the New Hampshire Department of Fish and Game and New Hampshire Audubon to identify important eagle use areas and, where appropriate, eagle protective measures should be implemented. If best management practices to prevent collision or electrocution in important eagle use areas cannot be implemented, we recommend that you coordinate with the Service's Regional Bald and Golden Eagle Coordinator at (413) 253-8592 to determine if an eagle conservation plan and a permit under BGEPA is needed.

U.S. Fish and Wildlife Service Properties

According to the spatial data you provided, the Preliminary Preferred Route for this project includes the use of an existing T-line ROW through a portion of the Pondicherry Division of the Silvio O. Conte National Wildlife Refuge, located in Whitefield, New Hampshire. As such, construction and future management of this portion of the line should be closely coordinated with Barry Parrish, Refuge Manager, at (413) 548-9138.

Thank you for your coordination. Please contact Maria Tur or Anthony Tur of this office at 603-223-2541 if we can be of further assistance.

Sincerely yours,

Thomas R. Chapman
Supervisor
New England Field Office

cc: EPA – Tim Timmerman
EPA – Mark Kern
NH Audubon – Chris Martin
NHFGD
USFWS - Barry Parrish
ACOE – Erika Mark
DOE- Brian Mills
Reading file

ES: MTur/ATur:8-24-11:603-223-2541

ecology and environment, inc.
Global Environmental Specialists
1501 Lee Highway, Suite 306
Arlington, Virginia 22209
Tel: (703) 522-6065, Fax: (703) 558-7950

January 30, 2012

Mr. Tony Tur
US Fish and Wildlife Service
70 Commercial Street, Suite 300
Concord, NH 03301

RE: United States Department of Energy, Northern Pass Transmission Line Project NEPA Review-Data Request

Dear Mr. Tur:

Ecology and Environment, Inc. (E & E) has been subcontracted by the SE Group, Inc. in support of the United States Department of Energy (DOE) review of the proposed Northern Pass Transmission Line Project (Project) under the National Environmental Policy Act (NEPA). Northern Pass Transmission, LLC (Applicant) has submitted a Presidential Permit Application to the DOE. Pursuant to NEPA, DOE has taken the role of lead regulatory agency with the US Environmental Protection Agency (EPA), the US Forest Service (USFS), and the US Army Corps of Engineers (USACE) as cooperating agencies. DOE, along with cooperating agencies, are preparing a Draft Environmental Impact Statement (DEIS) for the Project. The Project consists of approximately 180-mile transmission line to deliver electricity from Quebec through northern New Hampshire to an existing substation in Deerfield, New Hampshire. Approximately 140 miles of the proposed transmission line will be located within an existing right-of-way (ROW) located in Coos, Grafton, Belknap, Merrimack, and Rockingham counties (see attached map for details). The remaining 40 miles will be located in Coos county in northern New Hampshire and should consist of new ROW of approximately 200 feet in width. The Applicant has not determined the exact route for its proposed ROW for this portion of the Project at this time, which DOE will be further evaluating in the DEIS.

The DEIS will analyze potential human and natural environmental consequences resulting from the construction and operation of the Project. In an effort to obtain the most current and accurate information to be used in the DOE's NEPA analysis of the Project, we are requesting any information from your office that identifies sensitive and protected biological and natural resources such as rare or threatened and endangered species, critical habitat, high quality aquatic resources and exceptional ecological communities that may occur in the vicinity of the preliminary route and existing ROW as shown on the attached map.

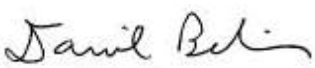
E & E will also be conducting biological field surveys for the Project as a data gathering effort for the DOE's impact analysis in 2012. As such, any recommendations for field survey protocols for any sensitive and protected species and natural resources identified as occurring within or in the vicinity of the proposed Project would be appreciated, along with any special considerations for construction and operations of the proposed transmission line. E & E's specialists will also consult further with your designated specialists as appropriate to develop

the more detailed survey work plan.

Please note that the SE Group and E & E are acting as representatives of and under the direction of the DOE for preparation of the DEIS, as opposed to representing the Applicant. This collection and subsequent field survey efforts will support the DOE's analysis as the designated lead federal agency under NEPA (and recognizes other state level review and approval processes).

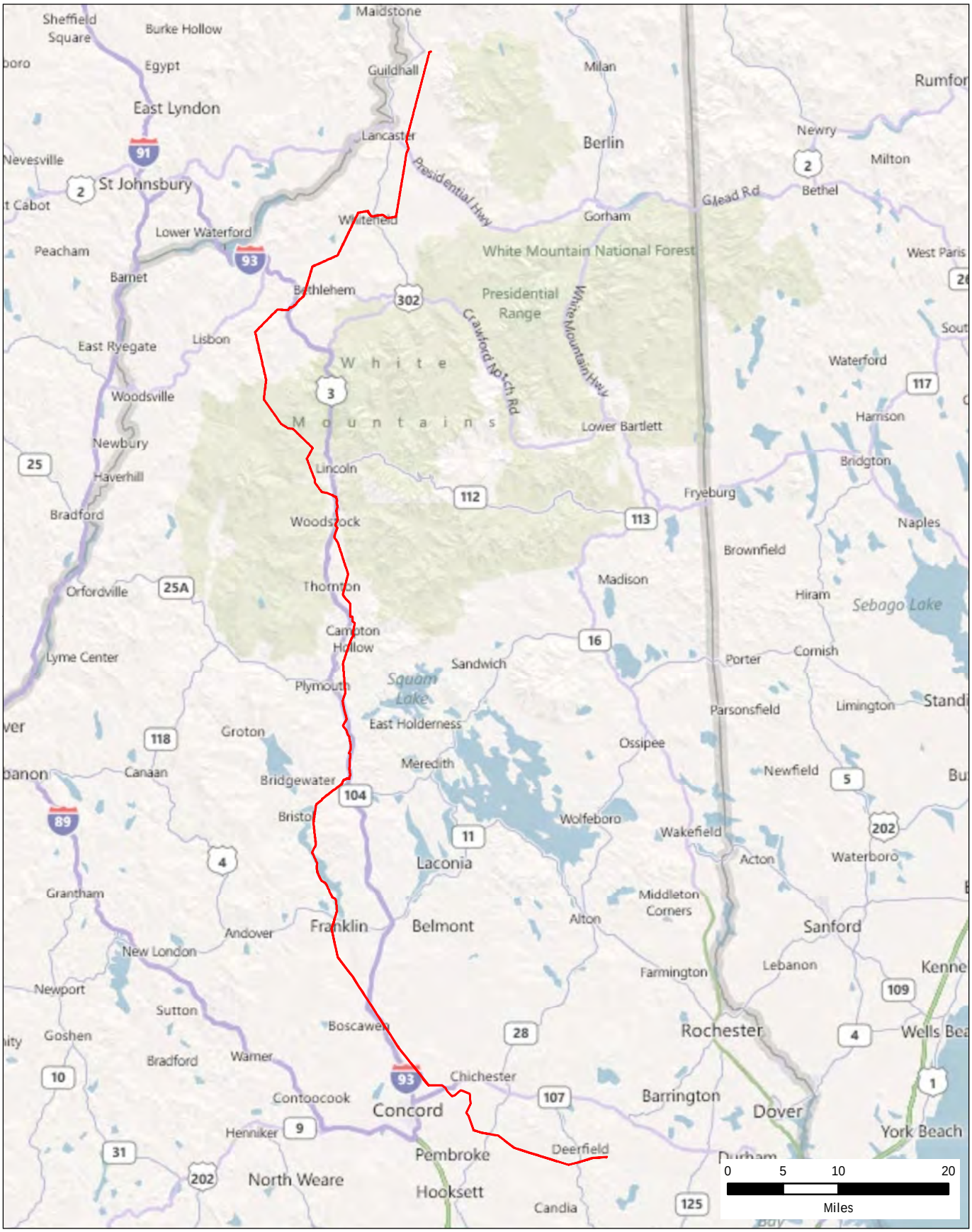
We respectfully request and would appreciate a timely response to this request in order to provide adequate time to prepare for seasonal surveys, the first of which are planned to occur in late winter 2012. If you have any questions regarding this data request, or require additional project information, please do not hesitate to call or email me at dbelin@ene.com or at (703) 522-6065. E & E appreciates your assistance and thanks you for your attention to this request, and looks forward to working in cooperation with the US Fish and Wildlife Service.

Sincerely,
ECOLOGY AND ENVIRONMENT, INC.



Cc: Brian Mills, DOE
Kent Sharp, SE Group
Travis Beck, SE group
Courtney Dohoney, E & E

Path: M:\Washington\Northern_Pass\Maps\MXD\Agency_Letter\012712\Project_Area.mxd



ecology and environment, inc.
International Specialists in the Environment

Source: ESRI 2010, Northern Pass Transmission, LLC 2012

N
S

Existing Right-Of-Way

Note: Route for the northern portion of the Project has not yet been determined

Project Area

Northern Pass Transmission Project
New Hampshire

United States Department of the Interior

FISH AND WILDLIFE SERVICE

New England Field Office
70 Commercial St, Suite 300
Concord, NH 03301
http://www.fws.gov/newengland

September 12, 2013

Ms. Caitlin Callaghan
Mr. Brian Mills
U.S. Department of Energy
1000 Independence Ave SW
Washington, DC 20585

Dear Ms. Callaghan and Mr. Mills:

The U.S. Fish and Wildlife Service (Service) is proposing to revise the designation of critical habitat for the Contiguous United States Distinct Population Segment (DPS) of the Canada lynx (*Lynx canadensis*). We also propose to revise the boundary of the DPS by doing away with the existing State-boundary-based definition and extending the protections of the Endangered Species Act (ESA) to lynx wherever they occur in the contiguous United States. These revisions are being undertaken to address two court orders resulting from litigation over the 2009 critical habitat designation and a settlement agreement to revise the DPS boundary to include New Mexico.

Critical habitat identifies the geographical areas containing features essential for the conservation of a threatened or endangered species which may require special management considerations or protection. A designation may also include other geographical areas determined to be essential for the conservation of the species. Designation of critical habitat does not affect land ownership or establish a refuge or preserve and has no impact on private landowners who are taking actions on their lands that do not require a Federal nexus such as through funding, permits, or authorization. Critical habitat designation does mean that Federal agencies that undertake, fund, permit, or authorize activities that may affect critical habitat are required to consult with the Service to ensure that such actions do not adversely modify or destroy that habitat.

Canada lynx are highly specialized predators of snowshoe hares and are strongly associated with extensive boreal forest landscapes. Lynx are broadly distributed throughout Alaska and Canada, and the southern periphery of the species' range extends into the northern contiguous United States. The lynx was protected under the ESA in 2000, when it was listed as threatened throughout its range in the contiguous United States. The Service designated critical habitat for the lynx in 2006 and revised the designation in 2009 to include 39,000 square miles of habitat in Maine, Minnesota, Montana, Idaho, Washington, and Wyoming.

The current proposal includes most of the areas designated in 2009 as well as additional private timber lands in northern Maine and Bureau of Land Management and National Park Service lands in northwestern Wyoming. In total, the Service is proposing to designate approximately 41,547 square miles within the boundaries of five critical habitat units in the States of Maine, Minnesota, Montana, Idaho, Washington, and Wyoming. We propose to exclude all Tribal lands and certain other lands covered by lynx conservation plans in Maine, Montana, and Washington. If these exclusions are finalized, 39,632 square miles of lynx critical habitat would be designated, an increase of 632 square miles from the previous designation in 2009. The Service also proposes to revise the definition of the lynx DPS to ensure that all lynx in the contiguous United States are protected under the ESA.

The areas proposed for designation as critical habitat for the lynx are boreal forest landscapes that provide the physical and biological features necessary to support lynx populations over time. These include high densities of snowshoe hares for prey, persistent deep snow that gives lynx a competitive advantage over other hare predators, and denning habitat composed of log piles or wind-thrown trees near hare concentrations. All of the areas proposed for designation have recent verified records of lynx occurrence and reproduction and are, therefore, considered occupied.

In an effort to ensure early coordination with our Federal partners, we specifically seek information on the following:

- any survey data, distribution, or occurrence information you have for Canada lynx; and
- whether you anticipate needing to re-initiate any consultations if critical habitat is revised.

We are also seeking your input on the characterization of the probable impacts as a result of the proposed revised designation of critical habitat. This information will be used to complete the economic analysis of the proposed critical habitat designation. In 2008, we completed a final economic analysis for our 2009 critical habitat designation, which described the Service's position on the potential effects of that designation. Because the current proposal is very similar to the 2009 designation, we anticipate similar impacts, which we will evaluate when we update and revise the 2008 economic analysis. Please review the 2008 final economic analysis at the following address:

http://www.fws.gov/mountain-prairie/species/mammals/lynx/criticalhabitat_files/FinalEconomicAnalysis12182008.pdf
(Accessed September 2013)

In addition, provide suggested revisions or input on the following:

- Is the characterization of your agency's probable projects in the area accurate?
- Is your agency aware of additional probable projects that should be included?
- Is the characterization of the probable project impacts or project modifications consistent with your agency's view?

- Is the number of new or reinitiated consultations accurate for your agency?
- Have we accurately described the changes in behavior in on-the-ground land management?

We will provide a public notification of our proposed rule for designation of revised critical habitat for the lynx DPS in the *Federal Register*. Any associated proposed rulemakings would include an opportunity for the public to review and comment. At this time, we expect the notification will be delivered to the *Federal Register* in September of 2013. The notice will open a comment period of at least 60 days. We will accept new information throughout this process. Any relevant information on the Canada lynx or its habitat in the contiguous United States should be submitted to the New England Field Office, Attention: Anthony Tur, U.S. Fish and Wildlife Service, 70 Commercial Street, Suite 300, Concord, New Hampshire 03301. All data and information submitted to us, including names and addresses, will become part of the administrative record.

Thank you for your interest in the conservation of threatened and endangered species. We appreciate your willingness to participate in the rulemaking process. For more information about lynx conservation, copies of the proposal, and details on public meetings and hearings, visit the Service's web site at http://www.fws.gov/mountain-prairie/species/mammals/lynx/. Copies of the *Federal Register* notice will also be available online or by contacting the Montana Field Office at 406-449-5225.

Sincerely yours,

Thomas R. Chapman
Supervisor
New England Field Office

Department of Energy
Washington, DC 20585

December 9, 2014

Mr. Tom Chapman
U.S. Fish and Wildlife Service
New England Field Office
70 Commercial Street, Suite 300
Concord, NH 03301

SUBJECT: Proposed Northern Pass Transmission Line Project

Dear Mr. Chapman:

This letter is to initiate informal consultation under Section 7(a)(2) of the Endangered Species Act (ESA) for the Northern Pass Transmission Line Project.

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 United States border with Canada. Northern Pass filed its original Presidential permit application on October 14, 2010.

In response to the Presidential permit application, on February 11, 2011 the DOE published the *Notice of Intent to Prepare an Environmental Impact Statement and to Conduct Public Scoping Meetings and Notice of Floodplains and Wetlands Involvement* (the NOI) in the *Federal Register*. In the NOI DOE announced its intention to prepare an Environmental Impact Statement (EIS) pursuant to the National Environmental Policy Act of 1969 (NEPA) to assess the potential environmental impacts of issuing a Presidential permit, the federal action, to Northern Pass to construct, operate, maintain, and connect a new electric transmission line across the U.S.-Canada border in northern New Hampshire (NH).

On July 1, 2013, Northern Pass filed an amended application with the DOE which reflected several changes, including a modified northern section for the proposed project route.

DOE published an Amended Notice of Intent (amended NOI) in the Federal Register on September 6, 2013, reflecting changes to the Presidential permit application, per the amended application.

A detailed description of the proposed transmission line and alternatives being analyzed in the EIS is located on the EIS website at http://www.northernpasseis.us/library/documents/ and http://www.northernpasseis.us/media/documents/The%20Northern%20Pass%20EIS%20Scoping%20Report%20Alternatives%20Addendum_05_01_2014_final.pdf

The following is a list of threatened and endangered species under the USFWS jurisdiction, which are potentially located in the project area:

1. Canada lynx (*Lynx canadensis*)
2. Indiana bat (*Myotis sodalis*)
3. Northern Long-eared Bat (proposed to list as endangered)
4. Karner Blue Butterfly (*Lycaeides melissa samuelis*)
   1. Bald eagle (*Haliaeetus leucocephalus*)-delisted but protected under the Federal Bald and Golden Eagle Protection Act

We ask that you review and approve the above list of potentially affected species, or provide a list of additional species that might be affected and any concerns relative to impacts of the Proposed Action on federally listed species.

Please feel free to contact me directly at any time at Brian.Mills@hq.DOE.gov, by phone at (202) 586-8267, or by fax at (202) 586-8008. We look forward to working with your office on this project.

Very truly yours,

Brian Mills

Brian Mills
NEPA Document Manager
Office of National Electricity Delivery, OE-20
Office of Electricity Delivery and
Energy Reliability

United States Department of the Interior

FISH AND WILDLIFE SERVICE

New England Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5087
http://www.fws.gov/newengland

REF: Initiation of informal section 7 consultation-
Northern Pass Transmission Line Project, New Hampshire

June 12, 2015

Mr. Brian Mills
U.S. Department of Energy
Office of Electricity Delivery and Energy Reliability
1000 Independence Avenue, SW
Washington, DC 20585-0800

Dear Mr. Mills:

This letter responds to your request, dated December 9, 2014, for review of a list of federally threatened and endangered species, and notification of other concerns relative to the proposed action that the U.S. Fish and Wildlife Service (Service) may have in relation to the Northern Pass Transmission Line Project (Project) proposed to be constructed through northern and central New Hampshire. The proposed Project will transmit electrical power from Hydro-Quebec to the New England Electrical System.

Northern Pass Transmission LLC (Northern Pass) has applied to the Department of Energy (DOE) for a Presidential permit to construct, operate, maintain, and connect an electric transmission line across the U.S. border with Canada in New Hampshire. In order to assess the potential environmental impacts from this proposed Federal action, DOE is preparing an Environmental Impact Statement (EIS) pursuant to the National Environmental Policy Act (NEPA) of 1969. Our comments are provided pursuant to the Endangered Species Act (ESA) (87 Stat. 884, as amended; 16 U.S.C. 1531, *et seq.*), the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d), the Migratory Bird Treaty Act (MBTA) (16 U.S.C. 703-712), and the Fish and Wildlife Coordination Act (FWCA) (16 U.S.C. 662, *et seq.*). These comments are being provided to assist DOE in assessing the potential impacts of issuing a Presidential permit and the Federal action.

On March 10, 2010, this office provided information to Ed Bowers of Burns and McDonnell on the presence of resources or property under the jurisdiction of the Service within a project study area that included portions of Coos, Grafton, Belknap, Merrimack, Rockingham, and Strafford Counties. On August 24, 2011, the Service provided an updated response to Mrs. Lee Carbonneau of Normandeau Associates, Inc., based upon a review of spatial data depicting preferred and alternative transmission line routes. On July 1, 2013, Northern Pass filed an amended application with DOE which reflected several changes, including a modified northern section for the proposed project route. Your most recent request to the Service asks for our

review of the amended proposed transmission line and alternatives being analyzed in the EIS as described in the Northern Pass Scoping Report,[1] Alternatives Addendum, dated May 2014.

Proposed Action

According to the information provided in the aforementioned Scoping Report, the Proposed Action is the construction of a single circuit 300 kilovolt (kV) High Voltage Direct Current (HVDC) transmission line running approximately 153 miles from the U.S. border crossing with Canada near the Town of Clarksville, New Hampshire, south to a new converter station located in Franklin, New Hampshire, where the HVDC power will be transformed to Alternating Current (AC). From Franklin, New Hampshire, a 345-kV overhead transmission line is proposed that will convey power along a 34-mile segment to the existing Deerfield Substation located in Deerfield, New Hampshire. The total length of the proposed Project would be approximately 187 miles. Several alternatives are being evaluated in the EIS, including variations in the route of the transmission line and the possible burial of certain segments.

Federally Listed Endangered and Threatened Species

Federal agencies have an obligation under section 7 (a) 2 of the ESA to consult with the Service on any action they fund, permit or carry out, to ensure that the action does not jeopardize the continued existence of listed threatened and endangered species. There are five federally listed species known to occur in the vicinity of the Project. Those species include the federally threatened Canada lynx (*Lynx canadensis*), the federally endangered Karner blue butterfly (*Lycaeides melissa samuelis*), the federally threatened northern long-eared bat (*Myotis septentrionalis*), the federally threatened small whorled pogonia (*Isotria medeoloides*), and the federally endangered dwarf wedgemussel (*Alasmidonta heterodon*). No other federally listed or proposed, threatened or endangered species or critical habitats under the jurisdiction of the Service are known to occur in the Project area.

Indiana bat

In your request for review, you listed the Indiana bat (*Myotis sodalis*) as potentially located in the Project area. We are not aware of any confirmed specimens documenting the current or historical presence of the species within New Hampshire. The closest known documented occurrence of the species is from the Lake Champlain region of Vermont, at a location exceeding 40 miles distance to the west. Consequently, we do not consider the Indiana bat to be potentially present. We recognize that acoustic surveys conducted by Ecology and Environment, DOE's consultant for the Project, resulted in the identification acoustic signatures indicative of *Myotis sodalis.* However, considering the close resemblance and potentially indistinguishable acoustic signatures of *Myotis sodalis*, *M. septentrionalis* and *M. lucifugus* (the little brown bat), with the latter two species known to be present in New Hampshire, it is highly probable that the Indiana bat calls were misidentified. This interpretation is supported by the observation that all acoustic software analysis programs are known to provide some false identifications of the presence of *Myotis sodalis.*[2] Given the known misidentification of *Myotis sodalis* resulting from acoustic

1 Available at http://media.northernpasseis.us/media/The%20Northern%20Pass%20EIS%20Scoping%20 Report%20Alternatives% 20Addendum_05_01_2014_final.pdf, accessed May 28, 2015.

2 From M. Ford, unpublished report, dated September 15, 2014. Available at http://www.fws.gov/midwest/ endangered/mammals/inba/surveys/pdf/USGSTestReport1_201409015.pdf, accessed June 8, 2015.

analysis software and the lack of a physical specimen corroborating the presence of the Indiana bat within the State, we conclude that the Indiana bat is not present.

Canada lynx

As indicated above, the Canada lynx (lynx) is known to occur in northern New Hampshire. Intensive surveys have been conducted from the White Mountain region of New Hampshire north to the international border. These surveys reveal that in the extreme northern portion of the State (north of the Village of Pittsburg), lynx are regularly detected and we conclude that they are resident in the area. From the Village of Pittsburg south through the White Mountain region, including the portions of the proposed Project area, lynx are detected only infrequently and at scattered locations, which suggests that the observations are of transient individuals that are wandering through the area. Consequently, we conclude that the lynx is transient throughout the area evaluated for this Project. We are not aware of potential activities on existing cleared rights-of-way (ROWs) that may result in direct adverse effects to lynx.

Expansion of existing ROW and new ROW alignments require further analysis because habitat used by lynx may be altered. To assess these impacts, a description of the vegetation in areas where new alignment will be constructed is needed so that we can assess potential impacts to lynx and their habitat. Specifically, we are interested in identifying potential denning habitats that may be present in landscapes containing other lynx habitat types, such as young coniferous forests that are occupied by snowshoe hares (*Lepus americanus*), the primary prey species for the lynx throughout its range.

While direct impacts to lynx resulting from activities on existing ROWs are not expected, indirect impacts are anticipated because maintenance activities may influence snowshoe hare abundance. To ensure that impacts to lynx are minimized, we recommend further coordination with this office regarding the development and implementation of vegetation maintenance practices that maintain suitable shrub and young coniferous cover for snowshoe hare.

Karner blue butterfly

The Karner blue butterfly is known to occupy an existing ROW in Concord, New Hampshire that is proposed to be traversed by the Project. The Karner blue butterfly relies upon wild lupine (*Lupinus perennis*) as its only larval host plant. Because of this, adults deposit their eggs on and in close proximity to lupine where, upon hatching, the larvae are provided access to lupine. The larvae consume this lupine and eventually pupate, usually in close proximity to the host plant. Since lupine is present in the existing ROW, Karner blue butterflies will be present within the Project throughout the year.

In addition to the use of wild lupine for mating, adult Karner blue butterflies generally require tall grass for late afternoon basking and overnight roosting, some shading vegetation to prevent overheating, a source of water, and nectar sources for the adults. A variety of understory plants serve as nectar sources for the adults. Consequently, impacts to habitats within the vicinity of occupied lupine patches may affect the Karner blue butterfly by impacting their ability to feed, breed, and shelter.

ROW construction and maintenance activities can result in adverse effects to the Karner blue butterfly and its habitat. Therefore, further coordination with this office is required, in the event that this portion of the ROW is selected as the preferred alternative. It may be possible to develop conservation measures that avoid or reduce adverse effects to the Karner blue butterfly, while allowing construction in, and maintenance of the ROW. Incorporation of these measures into the Project is advisable, and we are available to assist you in the development of these measures.

Northern long-eared bat

Formerly, the northern long-eared bat was common throughout New Hampshire. However, following the detection of white-nose syndrome (a fungal infection resulting in high mortality of bats) in hibernating bats during the winter of 2008-2009, the abundance of northern long-eared bats in New Hampshire has declined dramatically. Several hibernacula are known to occur in close proximity to the Project and include: (1) a mine in the Town of Woodstock, located approximately 1.0 mile west; (2) a mine in the Town of Campton, located approximately 0.30 mile to the east; and (3) a mine in the Town of Bristol, located approximately 2.8 miles to the west. We are aware of no known occupied roost trees within the Project area.

The Service developed an interim rule specific to the northern long-eared bat under section 4(d) of the ESA.[3] Under this interim rule, incidental take is not prohibited when it is associated with the maintenance and minimal expansion of existing ROWs and transmission corridors, when carried out in accordance with the conservation measures provided in the 4(d) rule. Based on our current understanding of the Project, compliance with the conservation measures may not be possible. For example, we are aware that expansion of the ROW may exceed the 100-foot threshold specified in the interim rule.

To complete the effects determination for the northern long-eared bat, we recommend comprehensive surveys be performed that will allow us to determine the current distribution of the species along the Project route. Surveys should be performed in accordance with current Indiana bat summer survey guidelines.[4] This occurrence information would allow us to assess the Project for take, as defined in section 3(19) of the ESA and 50 CFR §17.3, which could occur by killing or injuring bats during the summer active season, when trees are used for daytime roosting and rearing of pups. Additionally, we have identified the potential for take to occur as a consequence of significant habitat modification or degradation occurring through vegetation management that may significantly impair essential behavioral patterns, such as breeding, feeding or sheltering.

Also, please note that this interim rule under section 4(d) of the ESA does not remove, or alter in any way, the consultation requirements under section 7 of the ESA.

---

3 80 FR 17974, April 2, 2015. Available at http://www.gpo.gov/fdsys/pkg/FR-2015-04-02/pdf/2015-07069.pdf, accessed May 29, 2015.

4 Available at http://www.fws.gov/midwest/endangered/mammals/inba/inbasummersurveyguidance.html, accessed May 29, 2015).

Dwarf wedgemussel

The dwarf wedgemussel is known to occur within several segments of the Connecticut River that are in close proximity to several of the Project alternatives, including within the segment extending from the vicinity of the Village of Groveton downstream to the upper reaches of Moore Reservoir and in the reach extending from the vicinity of the Village of Woodville downstream through the Town of Haverhill. Since Alternatives 2.4a, 2.4b, 2.6a, 2.6b, and 2.7 involve the placement of underground transmission lines in or adjacent to existing road or railroad ROWs in close proximity to occupied segments of the Connecticut River, further evaluation of these alternatives is needed to determine if dwarf wedgemussels are within the action area impacted by the Project.[5]

Small whorled pogonia

Although there are no records of the small whorled pogonia within the Project area, the species is known to occur in several towns located along the proposed and alternative ROWs. Consequently, we recommend surveys be completed by a qualified botanist to determine the status of the small whorled pogonia along those portions of the Project located within the Towns of Holderness, Ashland, New Hampton, Bridgewater, Concord, Pembroke, Allenstown and Deerfield.

This orchid occurs both in fairly young forests and in maturing stands of mixed-deciduous or mixed-deciduous/coniferous forests. In New Hampshire, many sites that support the small whorled pogonia have "older" canopy trees estimated to be about 75 years of age. The majority of sites share several common characteristics. These include sparse-to-moderate ground cover (except when among ferns), a relatively open understory, and proximity to long persisting breaks in the forest canopy, such as logging roads and streams. For example, the small whorled pogonia has been found growing in and adjacent to recently abandoned, above-ground telephone transmission lines.

The highly-acidic, nutrient-poor soil in which this orchid grows is usually covered with leaf litter. The substrate tends to be variable in texture and ranges from extremely stony glacial till, to stone-free sandy loams, to sterile duff.

Species of Special Interest

Bicknell's thrush

Although not currently listed as a threatened or endangered species, the Bicknell's thrush (*Catharus bicknelli*) may also occur in the vicinity of the Project area. The Service is in receipt of a petition, dated August 24, 2010, to list the Bicknell's thrush as a threatened or endangered species and designate critical habitat. On August 15, 2012, the Service published a determination that there exists substantial information indicating that the petitioned listing may be warranted. On March 19, 2013, the Center for Biological Diversity filed a Notice of Intent to Sue under the ESA, alleging the Service's failure to issue a required finding on the Bicknell's thrush in accordance with the timeframes identified in section 4 of the ESA. Through a court-

5 Action area is defined at 50 CFR§402.02 as "all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action."

approved settlement agreement, the Service committed to publishing a final listing determination for the Bicknell's thrush by September 2017. Consequently, although the Service has yet to make a final listing determination for the species, we recommend the Project be evaluated for impacts to the Bicknell's thrush so that impacts can be addressed and the potential for future Project delays can be minimized or avoided.

The Bicknell's thrush is a rare, range-restricted songbird that breeds in the northeastern U.S. and southeastern Canada, and winters in the Greater Antilles. In the New Hampshire portion of the species range, the Bicknell's thrush breeding activities occur exclusively within high elevation forests dominated by balsam fir (*Abies balsamea*). The degree to which ROW construction and maintenance activities impact Bicknell's thrush habitat is not clear. However, coordination with the Service, the New Hampshire Department of Fish and Game, and New Hampshire Audubon may provide insights that may allow you to avoid adversely affecting the Bicknell's thrush or its habitat.

Migratory Bird Treaty Act

The MBTA prohibits taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests, except when specifically authorized by the Department of the Interior. Neither the MBTA nor its implementing regulations at 50 CFR Part 21 provide for permitting of "incidental take" of migratory birds. While take of migratory birds does not include habitat destruction or alteration, direct taking of birds, nests, eggs, or parts thereof is likely to occur if clearing or other ground disturbance occurs within migratory bird nesting habitat during the nesting season, when eggs or young are likely to be present. Vegetation removal activities should not occur during these periods.

A Memorandum of Understanding (MOU) between DOE and the Service regarding Implementation of Executive Order 13186, "Responsibilities of Federal Agencies to Protect Migratory Birds," was signed in 2006. Section F(e) of the MOU obligates DOE to ensure that migratory bird protection and conservation is considered in NEPA project reviews.

Overhead utility lines may cause mortality to birds through electrocution or collision. Any new lines should be installed according to the Avian Power Line Interaction Committee (http://www.aplic.org/) (accessed June 2015) standards.

This Project occurs within the Atlantic Northern Forest Bird Conservation Region (BCR) 14. BCRs are ecologically based units for planning, implementing, and evaluating cooperative bird conservation efforts across North America. Activities associated with this Project, particularly the creation of new and the expansion of existing ROWs, may result in direct and secondary impacts to forest-interior breeding birds and their natural habitats. There will be an increase in disturbance of birds from habitat fragmentation, increased populations of some predators due to edge effect, and possibly an increase in the spread of invasive species. These are important issues to consider when developing avoidance, minimization and mitigation measures.

Bald and Golden Eagle Protection Act

The bald eagle (*Haliaeetus leucocephalus*) is known to frequent several lakes and rivers located throughout the Project area, including the Connecticut, Pemigewasset and Merrimack Rivers. Although delisted from the ESA on August 8, 2007, protection of the bald eagle continues under the MBTA and the Bald and Golden Eagle Protection Act (BGEPA). To facilitate compliance with these laws, the Service developed and distributed the "National Bald Eagle Management Guidelines" that provide recommendations for avoiding deleterious impacts to these birds (http://www.fws.gov/northeast/ecologicalservices/pdf/NationalBaldEagleManagementGuidelines.pdf) (accessed June 2015). Several measures that are specific to transmission lines were included among the recommendations in these guidelines, including avoidance of important eagle use areas, such as nesting, foraging and wintering habitats. In instances where avoidance may not be possible, implementation of best management practices to prevent collision or electrocution of eagles is recommended. To address these issues, we advise that you contact the New Hampshire Department of Fish and Game and New Hampshire Audubon to identify important eagle use areas and, where appropriate, eagle protective measures should be implemented. If best management practices to prevent collision or electrocution in important eagle use areas cannot be implemented, we recommend that you coordinate with the Service's Regional Bald and Golden Eagle Coordinator at (413) 253-8592 to determine if an eagle conservation plan and a permit under BGEPA is needed.

U.S. Fish and Wildlife Service Properties

According to the spatial data you provided, the Preliminary Preferred Route for this Project includes the use of an existing transmission line ROW through a portion of the Pondicherry Division of the Silvio O. Conte National Wildlife Refuge, located in Whitefield, New Hampshire. As such, construction and future management of this portion of the line should be closely coordinated with Mr. Andrew French, Project Leader of the Silvio O. Conte National Fish and Wildlife Refuge, at (413) 548-8002.

Thank you for your coordination. Please contact either Anthony Tur or Maria Tur of this office at 603-223-2541 if we can be of further assistance.

Sincerely yours,

Thomas R. Chapman
Supervisor
New England Field Office

cc: EPA – Tim Timmerman
EPA – Mark Kern
NHFGD
USFWS – Andrew French
ACOE – David Keddell
Normandeau – Carbonneau
SE Group – Travis Beck
P.O. Box 2729
323 West Main St., Suite 201
Frisco, CO 80443
Daniel Belin, AICP
Ecology and Environment, Inc.
368 Pleasantview Drive
Lancaster, NY 14086
Reading file

ES: ATur/MTur:6-12-15:603-223-2541

APPENDIX H
APPLICANT-PROPOSED IMPACT AVOIDANCE AND MINIMIZATION MEASURES

APPENDIX H: APPLICANT-PROPOSED IMPACT AVOIDANCE AND MINIMIZATION MEASURES

The Applicant has identified a range of Applicant-proposed impact avoidance and minimization measures (APMs) that they expect to apply during construction and operation of the Project (including the Proposed Action or any of the action alternatives, as appropriate), organized by resource topic. This is a preliminary set of measures, based on analysis to-date of: 1) the potential impacts the Project may have; 2) applicable federal, state, and local requirements; 3) likely permit conditions; 4) BMPs; 5) measures necessary to assure consistency with the Forest Plan for the WMNF; and 6) other relevant standards and codes. These measures could change or be amended if the New Hampshire SEC requests or directs that additional or different measures be adopted. Finally, when the detailed design phase of the Project is completed, the Applicant may conclude that additional or different (but no less protective) measures are appropriate.

Table H-1. Applicant-Proposed Measures

ALL RESOURCES
The Applicant will retain Environmental Monitors during project construction. Working on behalf of the Applicant, the Environmental Monitors will be responsible for understanding all of the conditions of the Project's environmental permits and other impact avoidance and minimization measures the Applicant has committed to and for ensuring that project contractors abide by these conditions and commitments.
AGRICULTURAL PRODUCTION
The Applicant will avoid siting structures in active agricultural lands to the extent practicable, and where avoidance is not possible, new and existing or relocated structures will being collocated to minimize interference with tractor navigation. The Applicant will work with landowners to minimize impacts to agricultural land and agricultural activities during construction and maintenance of the transmission line.
Where disturbance and excavation cannot be avoided entirely on agricultural lands, they will be minimized using BMPs. Sediment and erosion control plans will be developed that specify the types of BMPs necessary. Depending on the site, BMPs may include installation of silt fences, straw wattles, mulch or stump grinding berms, straw bales, or check dams, and covering bare soils with mulch, blown straw, bonded fiber matrix or fiber rolls to protect drainage ways and streams from sediment runoff.
Contractors will be provided with site-specific requirements for limiting activities to approved work areas, maintaining or rebuilding fences, securing gates at access points, use of low-pressure vehicles, working around livestock, and scheduling construction and maintenance work to accommodate agricultural activities.
Erosion control practices will be inspected during construction, especially during significant precipitation events.
Soil compaction in cultivated areas will be treated and restored through tillage operations (e.g., using a subsoiler).
Construction mats will be used as appropriate.
The re-establishment of vegetative cover on active agricultural lands will be based on agreement with the landowner and specifications may vary by season.
AIR QUALITY
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.
To address fugitive dust, BMPs may include mulching or covering stock piles and installing wind breaks to reduce the potential for the generation of wind-eroded particulates, using water trucks to suppress fugitive construction-related dust when necessary, installing crushed stone aprons at appropriate access road entrances to public roadways to minimize tracking of soil onto public thoroughfares and cleaning of construction vehicles and equipment.

Table H-1. Applicant-Proposed Measures

Restoration of cleared routes, storage areas, and access roads will minimize the potential for dust generation from exposed areas. Larger disturbed areas will be revegetated once construction is complete. In smaller disturbed areas, vegetation will be stabilized, if necessary, and allowed to re-establish itself.
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.
CULTURAL AND HISTORIC
In accordance with Section 106 of the National Historic Preservation Act, the Applicant will consult with the responsible agencies on the terms of an appropriate programmatic agreement (PA). As part of the PA, the Applicant will commit to develop, with appropriate agency review and comment, a cultural resources management plan (CRMP). The CRMP will establish the procedures to further identify the boundaries of the potentially eligible sites for areas within the APE and will describe the measures that will be taken to further avoid, minimize and mitigate potential adverse effects to such resources. The CRMP will provide plans for the identification—through any necessary additional field work—of archeological and historic resources that may be adversely affected by the Project, as well as identify the steps that should be taken to further avoid or minimize impacts on those resources. Among the protective measures likely to be included in the Plan are the measures described below that the Applicant expects to follow.
Adverse visual effects on historic resources may be avoided by adding appropriate and practicable vegetation that does not interfere with landowner uses. At their request, the Applicant will consult with landowners of adversely affected properties and attempt to develop a mutually agreeable plan for using such vegetation as screening for the benefit of such properties. Where vegetation would be placed on property owned by a third party and require the consent of that party, the Applicant will make reasonable efforts to reach an agreement with third parties for the placement of such vegetation.
To the extent practicable, as construction is concluded, the Applicant will make efforts to restore disturbed areas of the transmission route where that would benefit historic.
To the extent practicable, adverse effects to known archeological resources will be avoided. Consistent with the anticipated PA and in consultation with NHDHR, a data recovery plan will be developed for archeological resources that are potentially eligible for listing where adverse effects cannot be avoided through practicable design modifications and best management practices. The data recovery plan will address how such resources, which may be directly and adversely affected by the Project, would be collected, with the consent of the underlying property owner, for data recovery and curation. The remainder of the resources adjacent to the area of direct effect will be protected in situ.
During construction, where appropriate, the Applicant will provide onsite technical oversight by one or more cultural resources monitors.
A series of BMPs for protection of resources will be included in the CRMP, and may include training, use of barrier fencing, protective fill, matting, monitors or other protective measures. Additionally, the plan will include procedures for addressing the unanticipated discovery of cultural resources that are potentially eligible for listing. Among other procedures, the Applicant will halt construction work in the immediate area of the find until the appropriate archeological resource personnel can make a determination with respect to further appropriate actions to be taken. Construction crews will receive training regarding the protection of known archeological resources and steps to be taken in the event of unanticipated discoveries of such resources during construction.
Information about the location of known archeological resources will be kept confidential. Construction drawings will, however, be marked with areas that construction crews should avoid in order to minimize impacts on archeological resources. The areas will be marked on the plans as either culturally or environmentally sensitive areas.

Table H-1. Applicant-Proposed Measures

As is customary in NH siting proceedings, the Applicant anticipates that, as a condition of any approval of the Project, the SEC will require the Applicant to: continue to consult with NHDHR with respect to effects on historic resources; comply with the PA and the CRMP, as well as any agreements and memoranda of understanding with NHDHR; and report to the SEC and NHDHR any new information or evidence about historic resources in the Project corridor. Based on prior precedent, it is also reasonable to expect that the SEC will delegate to NHDHR monitoring and compliance authority with respect to historic and cultural resources. These expected conditions provide an additional level of assurance that the Applicant will fully execute any and all requirements imposed on it with respect to the identification, avoidance and minimization of impacts on such resources.
FORESTRY
The Applicant will work with the NHDFL, the WMNF and other regulatory agencies to avoid or minimize impacts on sensitive forested areas within the state, town, county and federal forests. Areas disturbed in certain designated forest land will be restored consistent with clearance and access needs and the requirements set by the appropriate governing bodies.
Where removal of woody vegetation is required, vegetation will be cut flush with the ground to the extent possible. Where practicable, trees will be felled parallel to and within the transmission route to minimize the potential for route vegetation damage. Care will be taken to maintain vegetation along stream banks and within wetlands to the extent possible. During, and after, the transmission line construction, off route "hazard" trees that could pose hazards to the integrity of transmission lines will be identified and removed following consultation with and approval of the landowner or appropriate agency that controls the property.
All vegetation management and maintenance will be carried out in accordance with New Hampshire Division of Forest and Lands "*Best Management Practices Manual for Utility Maintenance in and Adjacent to Wetlands and Waterbodies in New Hampshire*."
Construction staging and storage areas will be located and arranged in a manner to preserve trees and vegetation to the maximum extent practicable. They will be located outside the WMNF to the maximum extent practicable. Also, to the extent practicable, staging areas will be restored to preconstruction conditions.
Depending on the terms of the applicable easement or ownership rights, timber that is cleared remains the property of the landowner. To the extent practicable, the Applicant will work with landowners to determine a mutually agreeable means of disposing of cleared material, such as chipping or stacking for landowner use or sale. Once construction is complete, the transmission route will be managed to promote the establishment of forbs and grasses. Shrubs will be allowed to regenerate within the transmission route provided they do not interfere with maintenance, access, and the safe operation of the transmission line, consistent with Eversource Energy vegetation management programs.
INVASIVE SPECIES
When equipment and material staging areas are identified, invasive species surveys will be performed. Environmental Monitors will work with the construction contractors to identify and take the necessary steps to avoid or minimize the transport and propagation of invasive species along the Project route.
Construction contractors will be trained to identify invasive plant species. Any invasive species that are located within areas of soil disturbance will be removed and disposed of appropriately.
Native or agency-approved seed mixes will be used for any revegetation that is required and revegetation will be carried out promptly upon completion of construction in an area.
Regular inspection and cleaning of construction equipment and vehicles on the right-of-way will occur as appropriate where invasive species are present.
The Applicant will address the control of invasive species associated with project construction in accordance with requirements imposed by the Wetlands Bureau and the NH Department of Agriculture requirements.
The Applicant will use certified weed and invasive-free straw bales for erosion and sediment control.

Table H-1. Applicant-Proposed Measures

LAND USE
Construction activities will be limited to the transmission route, substation locations, or areas where the Project has negotiated rights for access roads, staging areas, and/or storage yards. Access roads have been designed, wherever practicable, to be located on already disturbed areas. Any areas where fences or gates are temporarily removed or damaged during construction will be repaired or replaced.
The Applicant's proposal has designed the Project so that structures, where practicable, will avoid open water and transportation corridors. Construction and maintenance access roads will be located to avoid or minimize impacts on these areas, as well.
Construction of the underground portion of the Project will be carefully coordinated with communities to minimize impacts to traffic and local residents.
NOISE
The Applicant will employ a broad range of noise avoidance and minimization measures in its construction and operation of the Project. As a general matter, construction activities will occur between the hours between 7:00 a.m. and 7:00 p.m. In particular, to the extent practicable, any high noise construction activity (e.g., blasting, wood chipping, excavation) in proximity to sensitive locations will be limited to daytime hours.
For any required project blasting activities, a blasting plan will be developed that addresses, among other things, blasting methods, pre-blast surveys, notification protocols, and safety analysis. Blasting in any sensitive areas will be coordinated with the community and addressed in the construction planning phase.
The Applicant will remain in communication with local communities during the construction process in order to inform them of potential noise impacts and to respond to any community concerns.
The Applicant will consult with community officials to optimize the routing of construction vehicles to the extent practicable away from noise sensitive locations.
Equipment and material storage yards will be located away from sensitive noise receptors to the extent practicable. The construction equipment manufacturers' stock sound muffling devices will be used, and they will be kept in good repair throughout the construction process. Any planned maintenance of construction equipment will be located away from sensitive noise receptors.
PUBLIC SAFETY
The Project will be designed in accordance with the NESC and other applicable standards regarding clearance to ground, clearance to crossing utilities, clearance to buildings, strength of materials, and transmission route widths.
Construction crews will comply with all applicable guidelines, standard construction practices, and permit conditions regarding installation of facilities. Eversource Energy, contractor, and industry safety procedures will be followed during and after construction of the Project.
Clear safety signage will be used during all construction activities.
During operation of the transmission line, the line will be equipped with protective devices to safeguard the public should an abnormal event occur, such as something coming into contact with the line. These protective devices include circuit breakers and relays located where the transmission line connects to the substation, which are designed to de-energize the line should such an event occur.
The substation facilities will have appropriate signage and will be fenced; access will be limited to authorized personnel.
PUBLIC SERVICES & UTILITY SYSTEMS
The Applicant will coordinate project construction activities with local communities and appropriate state and federal agencies. This will include pre-construction planning to address activities such as traffic control, wire pulling operations over highways, and planning for local emergency response vehicles (police, fire and ambulance). As construction progresses, information will be provided to local emergency services to inform them of upcoming activity and impacts of the work and also to plan for any emergency situations on the construction site that might occur.
The Applicant will coordinate and provide the necessary information regarding any short-term road or lane closure with the appropriate authority, including emergency services.

Table H-1. Applicant-Proposed Measures

Prior to construction, the Applicant will use DigSafe, the one-call utility locating service, to identify buried facilities that must be avoided during construction, including pipelines, water, communications, and electric lines. The Applicant will adopt the appropriate construction measures to bypass or protect such sub-surface facilities.
Construction of the Project will require relocation of existing Eversource Energy transmission and distribution lines in certain parts of the Project corridor. System upgrades will also be required at the existing Deerfield and Scobie Pond Substations. The outages to the existing lines and portions of the substations will be planned for and included in a detailed construction outage management plan. The outage planning effort will include ISO-NE, Eversource Energy Transmission and Distribution operational planning groups and other transmission providers. The outage planning process will include running power flow models to determine what lines can be taken out of service for construction. This planning process will take into account multiple system contingencies, and the analysis may indicate that temporary mitigation measures are required.
Once project facilities are operational, they will be placed under the operational control of ISO-NE. All maintenance activities will be performed in accordance with Eversource Energy maintenance policies and procedures that are described in detail in section 3.5 of the amended Presidential Permit Application dated July 1, 2013.
RARE, THREATENED AND ENDANGERED SPECIES
Prior to construction, the Applicant will identify locations of sensitive plants and plant communities, and contractors will be required to install protective fencing along access paths and work areas in these locations to avoid impacts beyond the permitted work zone. These measures will be inspected by Environmental Monitors prior to construction activities.
Project plans will identify locations where contractors will be required to adjust construction schedules or employ special techniques to protect rare, threatened or endangered species, Forest Service Sensitive Species, and Exemplary Natural Communities.
Locations of rare, threatened and endangered species or their habitat will be treated as confidential. The identity and precise location of rare species will not be revealed on construction drawings. A note will direct the contractors to a construction management plan with instructions for complying with protective measures at each location.
A contractor training program will be developed prior to construction activities to familiarize the crews with the locations and species that will require special consideration, and to assist them to recognize rare reptiles and other recognizable species that may be encountered in the field.
An Environmental Monitor will be present for all construction activities where rare and unique species and communities are known to be present. An Environmental Monitor will be responsible for ensuring that prescribed protection measures are appropriately used during construction.
Vegetation clearing in high elevation (above 2,700 feet) areas will be conducted in fall or winter, and low impact harvest and construction equipment will be used where practicable.
Protective measures will be employed in the vicinity of all threatened and endangered plants, including protective fencing, use of low impact ground pressure equipment, timber mats, and appropriate seasonal restrictions.
In locations with known Blanding's, Spotted and Wood turtles and common nighthawks, exclusion fencing will be erected in known nesting areas from June through October, and daily searches will be conducted in these areas prior to construction activities.
Field surveys will be conducted by Environmental Monitors in all work areas near known rare turtle and Hognose and Black Racer snake habitats prior to construction. If rare reptiles are encountered, construction activities will be halted until the reptiles are relocated from the construction area to an appropriate habitat.
To the extent required by USFWS guidance, a seasonal restriction will be placed on clearing trees where the absence of Northern long-eared, and Indiana, bats has not been confirmed through acoustic survey. Activities near bat hibernacula will also be seasonally limited. All survey, clearing, blasting, and other construction activities will be conducted in compliance with applicable USFWS guidance.
A seasonal restriction will be placed on blasting activities at rocky outcrops in the Project corridor where the absence of Eastern small-footed bats has not been confirmed through acoustic survey. Blasting will also be prohibited in winter near known bat hibernacula.

Table H-1. Applicant-Proposed Measures

The Applicant will comply with other protective measures identified during consultation with the relevant state and federal agencies and as specified in permit conditions.
The Applicant will provide construction personnel with photographs and brief habitat information for recognizable rare species that could be encountered during construction, and protocols will be established for halting work and reporting to an Environmental Monitor.
In the event that the Applicant unexpectedly encounters any rare, threatened, or endangered species during preconstruction or construction activities, it will temporarily halt activities. An Environmental Monitor will identify the area of the sighting or encounter and record global positioning system (GPS) locations, report the sighting as soon as possible to appropriate federal or state agencies and work with responsible agency experts to implement appropriate protective measures.
Locations with rare, threatened and endangered plant species, unique natural plant communities and habitats of rare, threatened and endangered wildlife species will be restored following project-specific protocols for sensitive area restoration. Any unavoidable permanent impacts will be addressed in a compensatory mitigation plan developed with input from state and federal agencies and included in permit application documents.
Operation and construction of the Project within the WMNF will comply with the Forest Plan as it applies to rare, threatened and endangered species.
Consultation with managers of the Pondicherry Division of the Silvio O. Conte National Fish and Wildlife Refuge regarding operation and maintenance of the Project within the refuge will continue throughout project design and construction concerning the protection of rare, threatened or endangered species.
SOILS
To the extent practicable, the Applicant will avoid soil disturbance and excavation activities in areas of steep slopes. Where soil disturbance cannot be avoided entirely, it will be minimized using BMPs, such as matting, water bars, and stone-lined construction entrances from roadways.
Sediment and erosion control plans will be developed that specify the types of BMPs necessary. Depending on the site, BMPs may include installation of silt fence, straw wattles, mulch or stump grinding berms, straw bales, or check dams, and covering bare soils with mulch, blown straw, bonded fiber matrix or fiber rolls to protect drainage ways and streams from sediment runoff.
Environmental Monitors will inspect erosion control practices during construction, especially during significant precipitation events and as required by permit conditions.
Soil compaction in cultivated areas will be treated and restored through tillage operations (e.g., using a subsoiler). Where rilling occurs, the Applicant will repair the surface and restore ground vegetation upon completion of work in the affected area.
Selection of BMPs will be designed to minimize or avoid soil erosion and sedimentation risk in accordance with NHDES Alteration of Terrain program requirements.
Open trenching for underground installation will follow BMPs, and excavations will be open for the minimum amount of time practicable.
Disturbed areas will be revegetated in a timely manner once construction is complete in specific areas. The introduction and establishment of invasive plants will be minimized through the use of regular equipment inspection and cleaning by contractors and by prompt re-vegetation of disturbed areas using native species' seed mixes that are devoid of invasive species in accordance with NH Department of Agriculture regulations.
Impacts on soils within the WMNF will be minimized or avoided in a manner consistent with the Forest Plan.
TRANSPORTATION
The Applicant will develop a transportation management plan in compliance with NHDOT requirements and in coordination with state, federal, and local officials in order to minimize or avoid impacts on transportation. As part of that plan, heavy truck deliveries will be timed to occur during off-peak hours to the extent practicable.
The project will be designed in accordance with the NESC, which defines the basic clearance requirements between transmission lines and transportation corridors, such as highways and railroads.

Table H-1. Applicant-Proposed Measures

The installation and maintenance of electric power lines and structures over or under public highways in NH is permitted by RSA 231:161. The Applicant will coordinate with NHDOT for authority, as necessary, to cross highways along the Project corridor. The application will incorporate the requirements of the NHDOT Utility Accommodation Manual, Sections X and XII, which govern underground and overhead facilities, respectively.
The Project will cross railroads owned by the State of New Hampshire in several locations. The Applicant will follow the guidance of the NHDOT Utility Accommodation Manual, Section XX, for utility crossings of state-owned railroads. The Applicant will also seek PUC approval to cross land owned by the state, which for state-owned railroads entails compliance with the NESC.
The Applicant will observe FAA requirements for transmission lines in proximity to airports. The Applicant will continue its communications with the FAA in order to receive necessary FAA DNH.
VEGETATION
Where forested areas are cleared, appropriate herbaceous native or naturalized seed mixes from sources as close as possible to the immediate Project corridor, and subject to federal or state agency approval, will be used to promptly revegetate, to prevent encroachment by non-native or invasive weed species.
Small disturbed areas, peatlands and locations with, or near, rare, threatened or endangered plants or unique natural communities will be allowed to self-seed with native sources from the adjacent forest and the existing soil seed bank. Within these sensitive areas, care will be taken during construction to ensure that the surficial soil is, to the extent practicable, not compacted. At the conclusion of construction in a particular area, the Applicant will seek to restore the native topsoil that was present prior to construction.
The removal of vegetation will be limited to areas necessary for construction of the Project. Tree clearing will be limited to the minimum required width to meet safety clearances, root systems will be left in place in most locations, except over underground installations or where other earthwork must be conducted. Herbaceous and shrub vegetation will be left wherever practicable.
The Applicant will continue to coordinate with relevant state agencies concerning means and measures to minimize or avoid impacts on plant communities on state lands.
Where project construction will occur in wetlands and wet soils, the Applicant will schedule construction activities to occur during dry or frozen conditions, to the extent practicable, to minimize soil compaction. Construction mats or timber mats will be used to help protect wetland soils and vegetation where encountered during construction.
Larger areas of soil disturbance not permanently altered will be prepared for restoration and reseeded with native or naturalized seed mixes from sources as close as possible to the immediate Project corridor that are acceptable to the regulatory agencies with jurisdiction, or according to landowner requirements, subject to other regulations and permit conditions, including, control of invasive species, Section 401 and Section 404 of the CWA wetlands and waters permits, USFS, NHB recommendations, or any National Pollutant Discharge Elimination System permit required prior to construction.
The Applicant anticipates that vegetation management activities will be performed by Eversource Energy under a services agreement. Work will be performed in accordance with PSNH's vegetation management program, which currently employs only mechanical means for controlling vegetation within the Eversource ROWs. Eversource does not plan to use herbicides as part of its vegetation management program. As indicated in the Applicant application for a Presidential Permit, all vegetation management and maintenance will be carried out in accordance with the NHDFL BMPs for utility maintenance.
Any necessary revegetation within the WMNF will be carried out in a manner that is consistent with the Forest Plan.
VISUAL IMPACTS
In preparation of final design/engineering, the Applicant will continue to reduce the visibility of the Project by taking advantage of natural topography and forested buffers. In some locations, the Applicant may strategically add a structure to allow adjacent structure heights to be reduced.
There are some areas within the existing transmission route proximate to Concord, NH where relocation of existing facilities is not necessary to meet electrical code requirements. Nevertheless, the Applicant will relocate lines, as practicable, in order to reduce the structure heights for the 345kV line from Franklin, NH through Concord, NH.

Table H-1. Applicant-Proposed Measures

In final project design, the Applicant will, to the extent practable, make additional changes in structure design to minimize impacts on historic resources and address other visual impacts in sensitive areas.
WATER RESOURCES AND FLOODPLAINS
The Applicant will avoid or minimize impacts to waterways and floodplains, to the extent practicable, in route selection, siting, and design.
Prior to construction, the Applicant will obtain permits from the USACE under Section 404 of the CWA and Section 10 of the Rivers and Harbors Act and from the NHDES Water Pollution and Waste Disposal, and RSA 485-A(17) Terrain Alteration. These permits will guide construction, operation and maintenance of the Project. The Applicant will also comply with EO 11988 for Floodplain Management.
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. The Applicant will also adhere to stipulations in the Certificate of Site and Facility, which is administered by the SEC.
All erosion and sedimentation controls will be installed prior to construction in accordance with the Project's EPSC plan. The Project Engineer or Environmental Monitors may impose additional controls based on weather or field conditions.
Though soil disturbances will occur during construction, efforts will be taken to control erosion and runoff. BMPs, an EPSC plan and a SPCC plan will be employed to ensure water quality is protected.
Materials will be stockpiled away from stream banks and pond shorelines, and turbidity control methods will be used prior to discharging wastewater from concrete batching or other construction operations. Excavated materials will be disposed of in upland areas and will not be discharged directly to streams or other surface waters.
Erosion control practices will be inspected during construction, especially during significant precipitation events.
Stream crossings of watercourses and riparian strips will be made as close to perpendicular and as straight as possible. Vehicular activity within riparian corridors will be limited to the extent practicable.
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).
The Applicant will include in its SPCC plan protective measures to minimize contamination of waterways due to accidental spilling of fuels or other hazardous substances. Refueling will occur at sites away from wetlands and surface waters.
Environmental Monitors will ensure that the SPCC is implemented according to its terms.
Larger disturbed areas will be restored in a timely manner using native materials and seed mixes free of invasive species. Small disturbed areas will be stabilized, if necessary, and allowed to revegetate on their own.
Water resource and floodplain protection within the WMNF will be carried out in a manner that is consistent with the WMNF Forest Plan.
WETLANDS
Locations surveys of wetlands, streams, and vernal pools, have been conducted and considered in initial project design. Impacts to such resources will be avoided or minimized to the extent practicable through routing, siting and final design.
All necessary work in jurisdictional wetlands, streams, vernal pools and protected shoreland will be discussed at pre-application meetings between the Applicant and state and federal regulatory agencies and will be quantified and described in the state and federal permit applications for the Project. Prior to construction, the Applicant will obtain required permits from the USACE under Section 404 of the CWA and Section 10 of the Rivers and Harbors Act and from the NHDES under RSA 482-A Fill and Dredge in Wetlands and RSA 483-B Shoreland and Water Quality Protection Act. Mitigation measures and BMPs for wetland impacts will be determined 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. The Applicant will also adhere to stipulations in the Certificate of Site and Facility, which is administered by the NHSEC.

Table H-1. Applicant-Proposed Measures

Prior to construction, the Applicant will re-flag wetland boundaries and other sensitive resource areas, and will stake permitted access paths.
All erosion and sedimentation controls will be installed prior to construction in accordance with the EPSC plan. The Project Engineer or Environmental Monitors may require additional controls based on weather and field conditions.
Work to be conducted in wetlands will be scheduled to start and finish in the dry season or when the ground is frozen, to the extent practicable.
The Applicant will avoid major disturbance of individual wetlands and drainage systems during construction to the extent practicable. Structures and temporary access paths, pulling stations, laydown and staging areas, and crane pads will be sited to avoid and minimize wetland and stream impacts.
Brush and trees will be cut at ground level leaving the root systems intact. Tree stumps will only be removed in areas of underground trenching, and where necessary for safe access along the corridor.
Contractors will be required to follow access routes across wetlands and small streams that are approved in the permitting process. These will generally follow existing gravel roads and all-terrain vehicle trails where available, as recommended by the NHDES Wetlands Bureau.
All construction access in wetlands will use temporary work pads, such as timber mats. Small streams that cannot be avoided will be spanned with timber mats or functionally equivalent, low-impact bridging.
The Applicant will utilize construction BMPs such as matting, ice roads, and low ground pressure equipment, to the extent practicable, to minimize wetland impacts during construction. In some locations, helicopter construction may be used to reduce wetland impacts.
Stream crossings of watercourses and riparian strips will be located as close to perpendicular and as straight as possible. 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.
To minimize contamination of wetlands due to accidental spilling of fuels or other hazardous substances, the Applicant will develop and implement an SPCC plan or its equivalent. Refueling will occur at sites away from wetlands and surface waters. Environmental Monitors will ensure that construction is conducted in a manner that is consistent with the SPCC.
Construction equipment will not be washed in wetlands or within 100 feet of any wetland unless required to minimize the spread of invasive species. Run-off resulting from washing operation will not be permitted to enter any wetlands directly.
The use of construction equipment within wetlands will be limited to that necessary to install structures or dig trenches, install cables, backfill, and restore the construction corridor. All other construction equipment will use access roads in upland areas to the extent practicable.
Spoil and excavated materials will be stored outside of wetlands. All stockpiled material will be stored at a sufficient distance to prevent sedimentation into streams, wetlands, or other waterbodies. If no storage area is available, spoil will be adequately protected and erosion- and sediment-control measures will be installed to prevent materials from entering adjacent areas. All excess material will be disposed of in approved upland locations.
Any soil fill or topsoil used in wetland areas will be inspected at the source and be certified as weed free by the Environmental Monitor before being brought on site.
The Applicant will require contractors to segregate topsoil excavated from wetlands that will be only temporarily disturbed, to prevent the mixing of topsoil with subsoil. To expedite revegetation of wetlands, the top foot of surface soil will be stripped, retained, and later replaced.
Should it become necessary to remove water from a trench or other excavation, it will be pumped to a stable, vegetated upland area (where practical) and filtered through a filter bag or siltation barrier.
Unless work activities will resume within fourteen days, disturbed soils will be stabilized as soon as possible and no more than seven days upon temporary or permanent completion of ground-disturbing activities. If soil stabilization measures are not possible within seven days due to snow cover, frozen ground, or other weather conditions, soils will be stabilized as soon as practicable.

Table H-1. Applicant-Proposed Measures

All temporarily disturbed wetlands will be restored and monitored accordance with project restoration plans approved by state and federal agencies and permit conditions. Restoration work will be supervised by the Environmental Monitor and Project Engineer.
Native plantings that are appropriate for the transmission route may be installed to provide visual screening or to establish environmental buffers, such as along streams and rivers.
The Applicant will establish and implement a program to monitor the success of restoration upon completion of construction and restoration activities. The success of wetland revegetation will be monitored and recorded annually for the first two years (or as required by permits) after construction or until wetland revegetation is successful. Wetland revegetation will be considered successful when the vegetative cover is at least 80 percent of the type, density, and distribution of the vegetation in adjacent wetland areas that were not disturbed by construction.
If revegetation is not successful at the end of two years, the Applicant will develop and implement (in consultation with a professional wetland ecologist) a rehabilitation plan to actively revegetate the wetland with native wetland herbaceous plant species.
In revegetation or rehabilitation efforts, only native or non-persistent (annual, biannual, or sterile) species will be used.
The construction corridor will be inspected periodically during and after construction until final restoration has been completed. Erosion-control or restoration features will be repaired as needed in a timely manner until permanent revegetation has become successful.
All temporary erosion and sedimentation controls will be removed upon stabilization of the Project corridor and disposed of in an appropriate manner.
WILDLIFE
The Applicant has developed wildlife impact avoidance and minimization measures, and will comply with any additional permit conditions. These measures will be included in project plans and construction management plans, and they will be enforced by Environmental Monitors during construction.
For certain identified areas of sensitive wildlife habitat, the following impact avoidance and minimization measures will be applied during construction of the Project: • Clearing of trees and other vegetation will be the minimum necessary to satisfy the electrical safety clearance requirements, and take place in fall and winter to the extent practicable, to minimize impacts to nesting migratory birds. When clearing must be done during the nesting season, Environmental Monitors will inspect the work area for obvious bird nests and flag these for avoidance. • 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. • A seasonal restriction will be placed on clearing trees where Northern long-eared, and Indiana bat have not been determined to be absent through acoustic survey. All survey and clearing activities will be conducted in compliance with the applicable USFWS guidance. • The Applicant will incorporate industry best practices to reduce the risk of avian collisions with power lines, which are consistent with Avian Power Line Interaction Committee's 2012 guidelines. • 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. • Fenced exclusion zones will be established in locations with known threatened or endangered reptiles, snake hibernacula, turtle nesting areas, and similar resource areas. These exclusion zones will be visually inspected each day by an Environmental Monitor prior to construction activities, and work halted until animals can be moved from the construction area. • Special care and erosion and sedimentation measures will be employed during construction activities in or near perennial streams in the WMNF, and other potential trout streams, during the egg incubation period of October through April.

APPENDIX I
NEPA DISCLOSURE STATEMENTS FOR PREPARATION OF THE EIS

APPENDIX I: NEPA DISCLOSURE STATEMENTS FOR PREPARATION OF THE EIS

The Council on Environmental Quality regulations (CEQ) at Title 40 of the *Code of Federal Regulations* (CFR) Section 1506.5(c), which have been adopted by the U.S. Department of Energy (10 CFR Part 1021), require contractors who will prepare an environmental impact statement to execute a disclosure statement specifying that they have no financial or other interest in the outcome of the Project.

Preparers of this EIS having executed the requisite Disclosure Statements include:

- SE Group (a dba of Sno.engineering, Inc.)
- Ecology and Environment, Inc.
- Lucinda Low Schwartz
- Southeastern Archaeological Resources, Inc.
- Edgeworth Economics
- T.J. Boyle Associates, LLC.
- Teshmont Consultants, LP.
- Kenneth R. Foster
- Biodrawversity, LLC.

NEPA DISCLOSURE STATEMENT FOR PREPARATION OF THE NORTHERN PASS TRANSMISSION LINE ENVIRONMENTAL IMPACT STATEMEMT

The Council on Environmental Quality regulations (CEQ) at Title 40 of the *Code of Federal Regulations* (CFR) Section 1506.5(c), which have been adopted by the U.S. Department of Energy (10 CFR Part 1021), require contractors who will prepare an environmental impact statement to execute a disclosure statement specifying that they have no financial or other interest in the outcome of the project.

"Financial or other interest in the outcome of the project" is defined as any direct financial benefit such as a promise of future construction or design work in the project, as well as indirect financial benefits the contractor is aware of; it excludes any benefits such person or entity may enjoy in common with other electricity ratepayers in the same service territory.

In accordance with these requirements, SE Group and each of its subcontractors on the Northern Pass Project shall complete this document.

_SE Group (a dba of Sno.engineering, Inc.), on behalf of the company and its employees, hereby certifies as follows, to the best of its knowledge as of the date set forth below:

(a) ____SE Group_____ has no financial or other interest in the outcome of the project.

(b) _____ has the following financial or other interest in the outcome of the project and hereby agrees to divest itself of such interest prior to aware of this contract, or agrees to the attached plan to mitigate, neutralize or avoid any such conflict of interest.

Financial or Other Interests
1. none
2.
3.

Certified by:

_____*Principal/Vice President*___
Name, Title

_SE Group (a dba of Sno.engineering, Inc.)_____
Company

___August 5, 2011_ _____
Date

NEPA DISCLOSURE STATEMENT FOR PREPARATION OF THE NORTHERN PASS TRANSMISSION LINE ENVIRONMENTAL IMPACT STATEMEMT

The Council on Environmental Quality regulations (CEQ) at Title 40 of the *Code of Federal Regulations* (CFR) Section 1506.5(c), which have been adopted by the U.S. Department of Energy (10 CFR Part 1021), require contractors who will prepare an environmental impact statement to execute a disclosure statement specifying that they have no financial or other interest in the outcome of the project.

"Financial or other interest in the outcome of the project" is defined as any direct financial benefit such as a promise of future construction or design work in the project, as well as indirect financial benefits the contractor is aware of; it excludes any benefits such person or entity may enjoy in common with other electricity ratepayers in the same service territory.

In accordance with these requirements, SE Group and each of its subcontractors on the Northern Pass Project shall complete this document.

Ecology and Environment, Inc., on behalf of the company and its employees, hereby certifies as follows, to the best of its knowledge as of the date set forth below:

(a) _____X_____ has no financial or other interest in the outcome of the project

(b) _____ has the following financial or other interest in the outcome of the project and hereby agrees to divest itself of such interest prior to aware of this contract, or agrees to the attached plan to mitigate, neutralize or avoid any such conflict of interest.

Financial or Other Interests
1.
2.
3.

Certified by: _____

H. John Mye, Vice President, Treasurer, CFO
Name, Title

Ecology and Environment, Inc.
Company

August 5, 2011
Date

NEPA DISCLOSURE STATEMENT FOR PREPARATION OF THE NORTHERN PASS TRANSMISSION LINE ENVIRONMENTAL IMPACT STATEMEMT

The Council on Environmental Quality regulations (CEQ) at Title 40 of the *Code of Federal Regulations* (CFR) Section 1506.5(c), which have been adopted by the U.S. Department of Energy (10 CFR Part 1021), require contractors who will prepare an environmental impact statement to execute a disclosure statement specifying that they have no financial or other interest in the outcome of the project.

"Financial or other interest in the outcome of the project" is defined as any direct financial benefit such as a promise of future construction or design work in the project, as well as indirect financial benefits the contractor is aware of; it excludes any benefits such person or entity may enjoy in common with other electricity ratepayers in the same service territory.

In accordance with these requirements, SE Group and each of its subcontractors on the Northern Pass Project shall complete this document.

Lucinda Low Swartz, on behalf of the company and its employees, hereby certifies as follows, to the best of its knowledge as of the date set forth below:

(a) Lucinda Low Swartz has no financial or other interest in the outcome of the project

(b) _____xx_____ has the following financial or other interest in the outcome of the project and hereby agrees to divest itself of such interest prior to aware of this contract, or agrees to the attached plan to mitigate, neutralize or avoid any such conflict of interest.

Financial or Other Interests
1.
2.
3.

Certified by:

Lucinda Low Swartz

Lucinda Low Swartz

Date: August 5, 2011

NEPA DISCLOSURE STATEMENT FOR PREPARATION OF THE NORTHERN PASS TRANSMISSION LINE ENVIRONMENTAL IMPACT STATEMENT

The Council on Environmental Quality regulations (CEQ) at Title 40 of the *Code of Federal Regulations* (CFR) Section 1506.5(c), which have been adopted by the U.S. Department of Energy (10 CFR Part 1021), require contractors who will prepare an environmental impact statement to execute a disclosure statement specifying that they have no financial or other interest in the outcome of the project.

"Financial or other interest in the outcome of the project" is defined as any direct financial benefit such as a promise of future construction or design work in the project, as well as indirect financial benefits the contractor is aware of; it excludes any benefits such person or entity may enjoy in common with other electricity ratepayers in the same service territory. In accordance with these requirements, SE Group and each of its subcontractors on the Northern Pass Project shall complete this document.

Southeastern Archaeological Research, Inc., on behalf of the company and its employees, hereby certifies as follows, to the best of its knowledge as of the date set forth below:

(a) ___XX___ has no financial or other interest in the outcome of the project

(b) _____ has the following financial or other interest in the outcome of the project and hereby agrees to divest itself of such interest prior to execution of this contract, or agrees to the attached plan to mitigate, neutralize or avoid any such conflict of interest.

Financial or Other Interests:

1. None
2.
3.

Certified by:

_____
Signature

Anne V. Stokes, Ph.D. _____ President _____
Name Title

Date: February 2013

NEPA DISCLOSURE STATEMENT FOR PREPARATION OF THE NORTHERN PASS TRANSMISSION LINE ENVIRONMENTAL IMPACT STATEMENT

The Council on Environmental Quality regulations (CEQ) at Title 40 of the *Code of Federal Regulations* (CFR) Section 1506.5(c), which have been adopted by the U.S. Department of Energy (10 CFR Part 1021), require contractors who will prepare an environmental impact statement to execute a disclosure statement specifying that they have no financial or other interest in the outcome of the project.

"Financial or other interest in the outcome of the project" is defined as any direct financial benefit such as a promise of future construction or design work in the project, as well as indirect financial benefits the contractor is aware of; it excludes any benefits such person or entity may enjoy in common with other electricity ratepayers in the same service territory. In accordance with these requirements, SE Group and each of its subcontractors on the Northern Pass Project shall complete this document.

Edgeworth Economics, on behalf of the company and its employees, hereby certifies as follows, to the best of its knowledge as of the date set forth below:

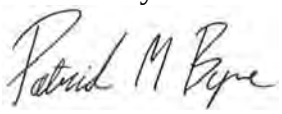
(a) ___XX___has no financial or other interest in the outcome of the project.

(b) _____has the following financial or other interest in the outcome of the project and hereby agrees to divest itself of such interest prior to execution of this contract, or agrees to the attached plan to mitigate, neutralize or avoid any such conflict of interest.

Financial or Other Interests:

1. None
2.
3.

Certified by:



_____
Signature

Patrick Byrne _____ Partner & COO _____
Name Title

Date: July 2013

NEPA DISCLOSURE STATEMENT FOR PREPARATION OF THE NORTHERN PASS TRANSMISSION LINE ENVIRONMENTAL IMPACT STATEMENT

The Council on Environmental Quality regulations (CEQ) at Title 40 of the *Code of Federal Regulations* (CFR) Section 1506.5(c), which have been adopted by the U.S. Department of Energy (10 CFR Part 1021), require contractors who will prepare an environmental impact statement to execute a disclosure statement specifying that they have no financial or other interest in the outcome of the project.

"Financial or other interest in the outcome of the project" is defined as any direct financial benefit such as a promise of future construction or design work in the project, as well as indirect financial benefits the contractor is aware of; it excludes any benefits such person or entity may enjoy in common with other electricity ratepayers in the same service territory. In accordance with these requirements, SE Group and each of its subcontractors on the Northern Pass Project shall complete this document.

T.J. Boyle Associates, LLC, on behalf of the company and its employees, hereby certifies as follows, to the best of its knowledge as of the date set forth below:

(a) ___XX___ has no financial or other interest in the outcome of the project

(b) _____ has the following financial or other interest in the outcome of the project and hereby agrees to divest itself of such interest prior to execution of this contract, or agrees to the attached plan to mitigate, neutralize or avoid any such conflict of interest.

Financial or Other Interests:

1. None
2.
3.

Certified by:

_____
Signature

Michael J. Buscher _____ Owner _____
Name Title

Date: March 2013

NEPA DISCLOSURE STATEMENT FOR PREPARATION OF THE NORTHERN PASS TRANSMISSION LINE ENVIRONMENTAL IMPACT STATEMENT

The Council on Environmental Quality regulations (CEQ) at Title 40 of the *Code of Federal Regulations* (CFR) Section 1506.5(c), which have been adopted by the U.S. Department of Energy (10 CFR Part 1021), require contractors who will prepare an environmental impact statement to execute a disclosure statement specifying that they have no financial or other interest in the outcome of the project.

"Financial or other interest in the outcome of the project" is defined as any direct financial benefit such as a promise of future construction or design work in the project, as well as indirect financial benefits the contractor is aware of; it excludes any benefits such person or entity may enjoy in common with other electricity ratepayers in the same service territory. In accordance with these requirements, SE Group and each of its subcontractors on the Northern Pass Project shall complete this document.

Ralph Kurth, on behalf of the company and its employees, hereby certifies as follows, to the best of its knowledge as of the date set forth below:

(a) __X__ has no financial or other interest in the outcome of the project

(b) _____ has the following financial or other interest in the outcome of the project and hereby agrees to divest itself of such interest prior to becoming aware of this contract, or agrees to the attached plan to mitigate, neutralize or avoid any such conflict of interest.

Financial or Other Interests:

1.

2.

3.

Certified by:

Ralph Kurth

Signature

Ralph Kurth

Name

President, Teshmont Consultants LP

Title

Date: Aug. 20, 2014

NEPA DISCLOSURE STATEMENT FOR PREPARATION OF THE NORTHERN PASS TRANSMISSION LINE ENVIRONMENTAL IMPACT STATEMENT

The Council on Environmental Quality regulations (CEQ) at Title 40 of the *Code of Federal Regulations* (CFR) Section 1506.5(c), which have been adopted by the U.S. Department of Energy (10 CFR Part 1021), require contractors who will prepare an environmental impact statement to execute a disclosure statement specifying that they have no financial or other interest in the outcome of the project.

"Financial or other interest in the outcome of the project" is defined as any direct financial benefit such as a promise of future construction or design work in the project, as well as indirect financial benefits the contractor is aware of; it excludes any benefits such person or entity may enjoy in common with other electricity ratepayers in the same service territory. In accordance with these requirements, SE Group and each of its subcontractors on the Northern Pass Project shall complete this document.

Kenneth R. Foster, on behalf of the company and its employees, hereby certifies as follows, to the best of its knowledge as of the date set forth below:

(a) XX has no financial or other interest in the outcome of the project

(b) _____ has the following financial or other interest in the outcome of the project and hereby agrees to divest itself of such interest prior to becoming aware of this contract, or agrees to the attached plan to mitigate, neutralize or avoid any such conflict of interest.

Financial or Other Interests:

1.

2.

3.

Certified by:

Kenneth R Foster

_____
Signature
Kenneth R. Foster
_____ Consultant_____
Name Title

Date: 20 Aug. 2014

NEPA DISCLOSURE STATEMENT FOR PREPARATION OF THE NORTHERN PASS TRANSMISSION LINE ENVIRONMENTAL IMPACT STATEMENT

The Council on Environmental Quality regulations (CEQ) at Title 40 of the *Code of Federal Regulations* (CFR) Section 1506.5(c), which have been adopted by the U.S. Department of Energy (10 CFR Part 1021), require contractors who will prepare an environmental impact statement to execute a disclosure statement specifying that they have no financial or other interest in the outcome of the project.

"Financial or other interest in the outcome of the project" is defined as any direct financial benefit such as a promise of future construction or design work in the project, as well as indirect financial benefits the contractor is aware of; it excludes any benefits such person or entity may enjoy in common with other electricity ratepayers in the same service territory. In accordance with these requirements, SE Group and each of its subcontractors on the Northern Pass Project shall complete this document.

Biodrawversity, LLC, on behalf of the company and its employees, hereby certifies as follows, to the best of its knowledge as of the date set forth below:

(a) ___XX___has no financial or other interest in the outcome of the project

(b) _____has the following financial or other interest in the outcome of the project and hereby agrees to divest itself of such interest prior to execution of this contract, or agrees to the attached plan to mitigate, neutralize or avoid any such conflict of interest.

Financial or Other Interests:

1. None
2.
3.

Certified by:

Ethan J Nedeau

Signature

Ethan J Nedeau

Name

Principal

Title

Date: June 2013