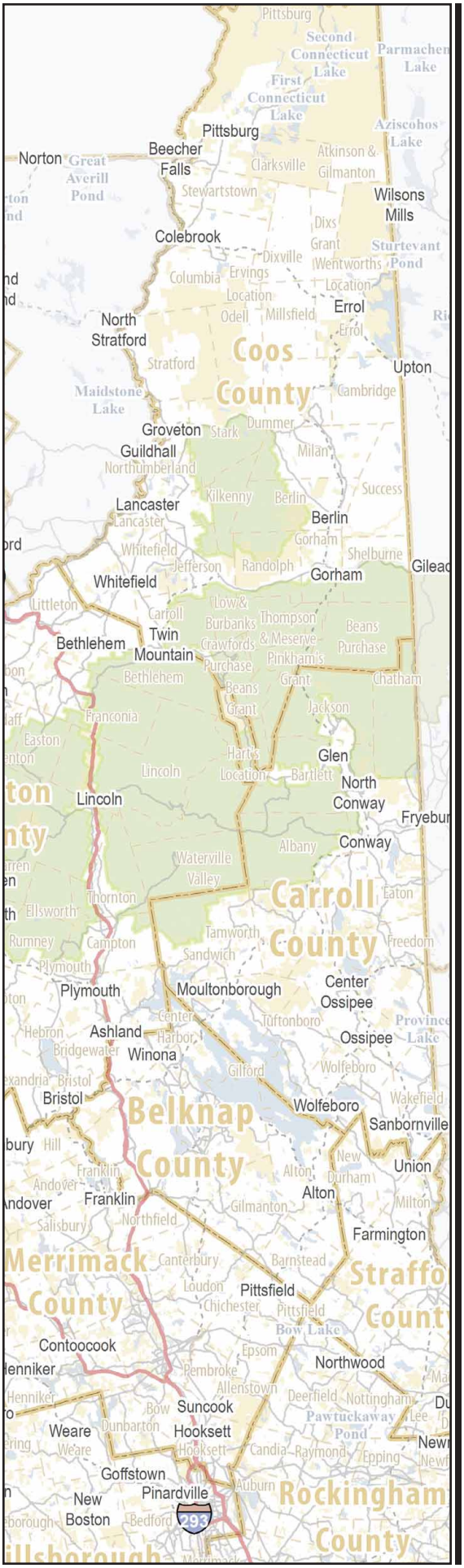


DOE/EIS-0463

FINAL

NORTHERN PASS TRANSMISSION LINE PROJECT ENVIRONMENTAL IMPACT STATEMENT

VOLUME 2: APPENDICES A–K

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

AUGUST 2017

Department of Energy
Washington, DC 20585
August 2017

Dear Sir/Madam:

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

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

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

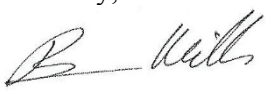
DOE has prepared this final EIS to evaluate the potential environmental impacts in the United States of the proposed action and the range of reasonable alternatives, including the No Action alternative. Under the No Action alternative, the Presidential permit would not be granted, and the proposed transmission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

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

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

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

Sincerely,



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

FINAL

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

Volume 2: Appendices A–K

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

COOPERATING AGENCIES

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

August 2017

COVER SHEET

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

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

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

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

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

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

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

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

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

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

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

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

APPENDIX F
FOREST PLAN CONSISTENCY ANALYSIS

APPENDIX F. FOREST PLAN CONSISTENCY ANALYSIS

F.1 INTRODUCTION

The White Mountain National Forest's (WMNF) 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 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 (1930s and 1940s). 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 final 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.

FOREST-WIDE	
Standards and Guidelines	**Consistency Analysis**
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, 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.	Consistent under all action alternatives. A Phase IA archaeological investigation and a reconnaissance survey of architectural resources 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 final EIS does not discuss 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/final-eis/technical-reports).
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 unless the activity is proposed specifically to improve future snowshoe hare habitat.	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**
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 5 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 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.	Implemented under all action alternatives. Existing construction access and maintenance roads would close to public use, except where they are designated trails, and would not be upgraded to increase human activity.

FOREST-WIDE	
Standards and Guidelines	**Consistency Analysis**
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.
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.

FOREST-WIDE	
Standards and Guidelines	**Consistency Analysis**
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 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 inches DBH) cut or moved in this zone should be placed in a fashion that benefits riparian functions or aquatic habitats when possible.	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.
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	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

<table>
<tr><th colspan="2">FOREST-WIDE</th></tr>
<tr><th>Standards and Guidelines</th><th>Consistency Analysis</th></tr>
<tr><td>recruitment, hydrologic function, wildlife habitat, and scenic values. Regeneration group cuts should be limited to less than 1 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>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>
<tr><td>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.</td><td>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.</td></tr>
<tr><td>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.</td><td>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.</td></tr>
</table>

FOREST-WIDE	
Standards and Guidelines	**Consistency Analysis**
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, and 7. 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. Alternatives 4a, 4b, 4c, 5a, 5b, 5c, 6a, 6b, and 7 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.

FOREST-WIDE	
Standards and Guidelines	**Consistency Analysis**
	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) outlined in *Agriculture Handbook 701, Landscape Aesthetics – A Handbook for Scenery Management*.	Alternatives 2 and 5b: Guideline not implemented. Tower installation would be consistent with a SIO of "Very Low" and inconsistent with 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.

FOREST-WIDE	
Standards and Guidelines	**Consistency Analysis**
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.
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.

FOREST-WIDE	
Standards and Guidelines	**Consistency Analysis**
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.
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.

FOREST-WIDE	
Standards and Guidelines	**Consistency Analysis**
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.
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.

FOREST-WIDE	
Standards and Guidelines	**Consistency Analysis**
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.
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.

FOREST-WIDE	
Standards and Guidelines	**Consistency Analysis**
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.
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.

FOREST-WIDE	
Standards and Guidelines	**Consistency Analysis**
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 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.

FOREST-WIDE	
Standards and Guidelines	**Consistency Analysis**
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.
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.

FOREST-WIDE	
Standards and Guidelines	**Consistency Analysis**
WILDLIFE RESERVE TREES	
Standards	
S-1. When harvest reduces the basal area of a stand below thirty square feet per acre, uncut patches totaling 5 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.
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 analyzed 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 to 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 analyzed 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, 6b, and 7: 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 analyzed 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 EIS. 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.
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.

MANAGEMENT AREA 8.3 – APPALACHIAN NATIONAL SCENIC TRAIL	
Standards and Guidelines	**Consistency Analysis**
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.
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.

MANAGEMENT AREA 8.3 – APPALACHIAN NATIONAL SCENIC TRAIL	
Standards and Guidelines	**Consistency Analysis**
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.
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 4-173**), 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

A Biological Assessment has been prepared in order to evaluate the potential impacts of the proposed Project on federally listed threatened or endangered species, and to comply with the requirements of the Endangered Species Act (ESA or "the Act") of 1973 (16 United States Code [U.S.C.] § 1531–1534). The Proposed Action by the DOE is the issuance of a Presidential permit that would authorize Northern Pass to construct, operate, and maintain the proposed Project crossing of the U.S./Canada border. DOE will continue to consult with the U.S. Fish and Wildlife Service regarding the potential impacts of the proposed Project on federally listed species.

Correspondence related to ESA Section 7 consultation is available on the EIS website: http://www.northernpasseis.us/consultations/section-7/.

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 or other permitting agency requests or directs that additional or different measures be adopted. In particular, this analysis assumes that the Applicant will adhere to all stipulations defined in all permits issued by the State of New Hampshire, including those defined by the New Hampshire Department of Environmental Services in their March 2017 approval recommendation to the SEC (NHDES 2017a). 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. The analysis of potential impacts in this EIS assumes that these measures would be applied during implementation of the Project, if approved.

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.

Table H-1. Applicant-Proposed Measures

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 equipment properly 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.
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, procedures to further identify the boundaries of the potentially eligible sites for areas within the APE and measures that will be taken to avoid, minimize and mitigate potential adverse effects to such resources. Procedures will provide for 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 procedures 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 resources.
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 procedures, and may include training, use of barrier fencing, protective fill, matting, monitors or other protective measures. Additionally, the procedures will address 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.

Table H-1. Applicant-Proposed Measures

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 construction drawings as either culturally or environmentally sensitive areas.
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, 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.
RECREATION
The Project will be constructed underground in the road in the area of the ANST, and the Applicant anticipates that there will be some temporary lane closures during construction. In order to preserve continuous trail access, the Applicant will create a short detour around the work zone to re-route hikers for the brief period when the trail crossing segment is under construction. Appropriate signage directing hikers to the trail will be posted where construction may obscure the route.
The Project will meet the ANST where it crosses State Route 112. There is a parking lot there for day hikers. Northern Pass will assure that access to the parking lot is maintained throughout the period of construction in that area.
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.

Table H-1. Applicant-Proposed Measures

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.
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 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.

Table H-1. Applicant-Proposed Measures

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.
In final project design, the Applicant will, to the extent practicable, make additional changes in structure design to minimize impacts on historic resources and address other visual impacts in sensitive areas.
Because for most of its route the Project is located in the existing PSNH transmission corridor, the long-standing and accepted PSNH vegetation management plan will generally govern the Project. The plan includes typical practices for vegetation removal within the corridor and plantings at road crossings.
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.

Table H-1. Applicant-Proposed Measures

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.
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

Table H-1. Applicant-Proposed Measures

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.
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.

Table H-1. Applicant-Proposed Measures

- 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 Swartz
- 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

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

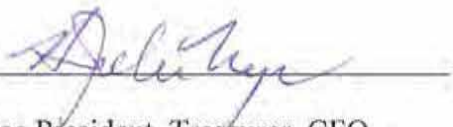
Ecology and Environment, Inc., on behalf of the company and its employees, hereby certifies as follows, to the best of its knowledge as of the date set forth below:

(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

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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

Date: August 5, 2011

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

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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:

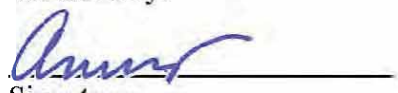
(a) ___XX___ has no financial or other interest in the outcome of the project

(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. — Name

President — Title

Date: February 2013

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

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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:

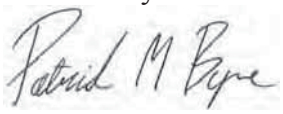
(a) ___XX___ has no financial or other interest in the outcome of the project.

(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.

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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:

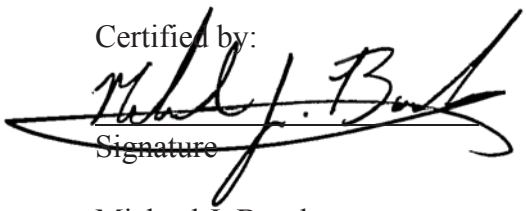
(a) ___XX___ has no financial or other interest in the outcome of the project

(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.

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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.

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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.

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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

APPENDIX J
HYBRID ALTERNATIVE

APPENDIX J. HYBRID ALTERNATIVE

The information presented in Appendix J summarizes potential resource impacts under an additional Project alternative requested by the U.S. Environmental Protection Agency (EPA) ("Hybrid Alternative"). During the draft EIS comment process for the Project, EPA expressed concern about the extent of wetland impacts in the Northern Section under Alternative 7 (the Proposed Action). To assess this concern and to quantify potential changes in impacts to resources, a Hybrid Alternative consisting of the following Project components was analyzed: Alternative 4c in the Northern Section and Alternative 7 in the Central and Southern Sections.

Under Alternative 4c in the Northern Section, the transmission line would be buried along US Route 3 from the U.S./Canada border to Whitefield, NH (see **Section 2.3.6.1** for more details).[1] In contrast, Alternative 7 in the Northern Section would establish a new Project corridor in which most of the transmission line would be overhead (see **Section 2.3.12.1** for more details). Under Alternative 7 in the Central Section, the Project would be both overhead in the existing PSNH transmission corridor, except for 52 miles underground in existing roadways within and near White Mountain National Forest (see **Section 2.3.12.2** for more details). Under Alternative 7 in the Southern Section, the Project would be constructed as an overhead transmission line within the existing PSNH transmission route (see **Section 2.3.12.3** for more details).

To assist comparisons between the Hybrid Alternative and the other Project alternatives, the tables presented in this appendix reflect the format and information provided in **Section S-9**, with the exception of visual and socioeconomic resources. Additional discussion for those resources is also provided.

J.1 SUMMARY OF IMPACTS

J.1.1 Visual Resources

For visual resources, calculation of scenic impacts is based on modeling that cannot be separated by geographic section. Overall, the scenic impact of the Hybrid Alternative would be less than Alternative 7 because the portion of the Project in the Northern Section would be underground rather than overhead. Under the Hybrid Alternative, "Net Change in Miles (km) of Road with Visibility" would be 18 (215 km) compared to 40 (64 km) under Alternative 7.

J.1.2 Socioeconomic Resources

Most socioeconomic resource data for the action alternatives in this EIS were calculated on a corridor basis rather by geographic section. The only economic resource data available that conforms to the Hybrid Alternative are property taxes. Under the Hybrid Alternative, annual property taxes would increase an estimated $47.8 million. Under Alternative 7, annual property taxes would increase an estimated $37.0 million. Under the Hybrid Alternative, it is estimated that Total Constructions Costs would be roughly $1.5 billon, as compared to $1.37 billion under Alternative 7.

[1] The Project would transition from overhead lines to underground cables at a transition station in Pittsburg, NH, immediately on the U.S. side of the border with Canada. The Project would follow (from north to south): the Alternative 2 alignment from the U.S./Canada border crossing to US Route 3 in Clarksville, NH, US Route 3 south to Whitefield, NH at approximately MP 60, NH Route 116 south to the junction with NH Route 142 at approximately MP 63, and NH Route 142 south to the border between Coös and Grafton counties at approximately MP 64.

Tourism

Under this Hybrid Alternative, underground portions of the Project would be expected to generate short-term impacts on tourism during construction and no long-term impacts (see **Section 4.1.2.3** for more details). Overhead portions of the Project may have some long-term impacts on tourism. However, those impacts are not quantifiable based on available information related to the impact of transmission lines on tourism. Additional information regarding potential impacts to tourism from overhead portions of the Project is discussed in **Section 4.1.2.2**.

J.1.3 Recreational Resources

Table J-1. Summary of Potential Impacts to Recreational Resources – Construction

Alternative	Point Sites	Potential Federal Wild and Scenic Rivers (type of crossing)	Sites with Spatial Area acres (ha)	Trails	
				miles (km)	ANST[a] Crossings
1 (No Action)	--	--	--	--	--
2	1	9 (overhead)	496 (201)	5.6 (9)	1
3	1	9 (buried)	496 (201)	5.6 (9)	1
4a	--	8 (buried)	112 (45)	0.3 (0.5)	1
4b	--	8 (buried)	141 (57)	0.2 (0.3)	1
4c	--	7 (buried)	82 (33)	0.2 (0.3)	1
5a	1	9 (overhead and buried)	312 (126)	1 (1.6)	1
5b	1	10 (overhead and buried)	410 (166)	0.9 (1.4)	1
5c	1	10 (overhead and buried)	334 (135)	0.9 (1.4)	1
6a	--	8 (overhead and buried)	127 (51)	0.4 (0.6)	1
6b	--	9 (overhead and buried)	155 (63)	0.3 (0.5)	1
7 (Proposed Action)	1	7 (overhead and buried)	295 (119)	0.8 (1.3)	1
Hybrid Alternative	1	5	184 (74)	0.7 (1.0)	< 0.2

Note: Point sites are recreational resources with small spatial area such as a scenic overlook, boat launch, etc. Sites with spatial area are recreational resources such as parks that have larger areas.
[a] ANST impacts are included in the total impact to trails.

In the Northern Section, the Hybrid Alternative would cross the Israel River, an eligible Wild and Scenic River, as an underground transmission cable. However, this crossing is not expected to have recreational impacts as there is already an existing road crossing in this location and the cable would likely be installed underneath the existing bridge. In the Central Section, the Hybrid Alternative would cross the Wild Ammonoosuc River, an eligible federal Wild and Scenic River, as an underground transmission cable where there is already an existing road crossing in this location, and the cable would likely be installed underneath existing bridges. The Hybrid Alternative would also cross the Ammonoosuc River, and eligible federal Wild and Scenic River, as an overhead transmission line. However, impacts to recreation would be relatively minor and incremental as there is already an existing transmission line crossing in this location. In the Southern Section, the Hybrid Alternative would cross the Merrimack, Soucook, and the Suncook rivers as an overhead transmission line. Each of these rivers is an eligible federal Wild and Scenic River. Impacts to recreation would be incremental as there is already an existing transmission line crossing in these locations.

In terms of trail impacts, a short segment of the Beaver Brook Trail/ANST in the Kinsman Notch area would be impacted by the Project under the Hybrid Alternative. Although this impact would occur in a previously-impacted area along NH Route 112, construction activities could alter the recreation experience on this portion of the ANST.

Table J-2. Summary of Recreational Resources with Potential to Experience Long-Term Visual Impacts

Alternative	Point Sites	Sites with Spatial Area acres (ha)	Trails	
			miles (km)	ANST[a] miles (km)
1 (No Action)	--	--	--	--
2	15	2,267 (917)	9 (14)	0.1 (0.2)
3	--	--	--	--
4a	--	--	--	--
4b	--	--	--	--
4c	--	--	--	--
5a	13	2,121 (858)	8 (13)	0.1 (0.2)
5b	14	2,207 (893)	8 (13)	0.1 (0.2)
5c	14	2,161 (875)	8 (13)	0.1 (0.2)
6a	3	--	0.6 (0.9)	--
6b	3	--	0.6 (0.9)	--
7 (Proposed Action)	12	2,109 (894)	9 (14)	0.1 (0.2)
Hybrid Alternative	1	352 (143)	1.2 (1.9)	0.5 (0.8)

Note: Point sites are recreational resources with small spatial area such as a scenic overlook, boat launch, etc. Sites with spatial area are recreational resources such as parks that have larger areas.

[a] ANST impacts are included in the total impact to trails.

[b] Alternatives 3, 4a, 4b, and 4c would be located underground, and the construction and operation would not result in long-term impacts resulting from vegetation management. Therefore, long-term impacts to recreation would occur but would be due to limited aboveground structures

J.1.4 Health and Safety

Table J-3. Summary of Potential Health and Safety Impacts

Alternative	Summary of Impacts
1 (No Action)	No impacts.
2	Risks related to spills, hazardous materials, petroleum products, hazardous wastes, worker safety, public safety, and fires would be minimized through the implementation of APMs (see **Appendix H**). In particular, design measures would reduce risks related to extreme weather events. The Project would generate electric and magnetic fields (EMFs), but there would be no impact of the Project due to EMFs outside of the transmission route, and minimal (not harmful) potential impacts due to AC electric fields within the transmission route.
3	Risks related to spills, hazardous materials, petroleum products, hazardous wastes, worker safety, and fires would be similar to those of Alternative 2. Risks related to weather, public safety, and EMFs would be reduced because the cable would be buried. There could be an increased risk of unearthing hazardous materials and/or contaminated groundwater.
4a	Risks would be similar to those of Alternative 3 because both alternatives would be underground cable; however, there could be more transportation-related risks because the cable would be buried in a roadway corridor.
4b	Same as Alternative 4a
4c	Same as Alternative 4a
5a	Same as Alternative 2 for aboveground portions; same as Alternative 4a for underground portions
5b	Same as Alternative 2 for aboveground portions; same as Alternative 4a for underground portions
5c	Same as Alternative 2 for aboveground portions; same as Alternative 4a for underground portions
6a	Same as Alternative 2 for aboveground portions; same as Alternative 4a for underground portions
6b	Same as Alternative 2 for aboveground portions; same as Alternative 4a for underground portions
7 (Proposed Action)	Same as Alternative 2 for aboveground portions; same as Alternative 4a for underground portions
Hybrid Alternative	For aboveground and underground transmission lines and facilities, risks are related to spills, hazardous materials, petroleum products, hazardous wastes, worker safety, public safety, and fires. For above-ground components in the Central and Southern Sections, there are greater risks associated with extreme weather events, and the Project would generate electric and magnetic fields (EMFs), but there would be no impact of the Project due to EMFs outside of the transmission route, and minimal (not harmful) potential impacts due to AC electric fields within the transmission route. For underground components in the Northern and Central Sections, there may be an increased risk of unearthing hazardous materials and contaminated groundwater.

J.1.5 Traffic and Transportation

Table J-4. Summary of Potential Traffic and Transportation Impacts – Roads within Study Area and Miles (km) Buried in Roadway Corridors

Alternative	Roadways within Study Area					Miles (km) Buried in Roadway Corridor
	Interstates	US Highways	State Highways	Local Roads	Total	
1 (No Action)	--	--	--	--	--	--
2	3	5	22	186	216	6 (10)
3	3	5	22	186	216	6 (10)
4a	3	6	22	440	471	173 (278)
4b	3	6	25	499	533	188 (303)
4c	3	6	22	574	605	179 (288)
5a	3	5	22	208	238	26 (42)
5b	3	5	22	199	229	19 (31)
5c	3	5	22	247	277	31 (50)
6a	3	5	22	413	443	137 (220)
6b	3	5	25	472	505	152 (245)
7 (Proposed Action)	3	5	24	283	315	58 (93)
Hybrid Alternative	3	3	23	452	484	120 (193)

Note: The study area is defined as the Project corridors. The names and locations of all roadways are discussed in the Traffic and Transportation Technical Report (http://www.northernpasseis.us/library/final-eis/technical-reports).

J.1.6 Land Use

Table J-5. Summary of Potential Land Use Impacts

Alternative	Land Use Conversion acres (ha)	Forest Plan Standards Inconsistencies
1 (No Action)	--	--
2	454 (184) non-developed to Developed, Open Space	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
3	454 (184) non-developed to Developed, Open Space	--
4a	28 (11) non-developed to Developed, Open Space	--
4b	28 (11) non-developed to Developed, Open Space	
4c	28 (11) non-developed to Developed, Open Space	--
5a	454 (184) non-developed to Developed, Open Space	--
5b	454 (184) non-developed to Developed, Open Space	1) MA 8.3 – Appalachian National Scenic Trail, Scenery Management Standard S-1
5c	454 (184) non-developed to Developed, Open Space	--
6a	28 (11) non-developed to Developed, Open Space	--
6b	28 (11) non-developed to Developed, Open Space	--
7 (Proposed Action)	454 (184) non-developed to Developed, Open Space	--
Hybrid Alternative	28 (11) non-developed to Developed, Open Space	--

J.1.7 Noise

Table J-6. Summary of Potential Noise Impacts

Alternative	Audible Corona Noise Level (dBA) During Operations			Exceed EPA Guidance Level of 55 dBA
	HVDC Transmission Line (below conductors)	345 kV AC Transmission Line (below conductors)	345 kV AC Transmission Line (150 feet [46 m] from centerline)	
1 (No Action)	--	--	--	--
2	28	44	36	No
3	No audible corona noise associated with underground lines			
4a	No audible corona noise associated with underground lines			
4b	No audible corona noise associated with underground lines			
4c	No audible corona noise associated with underground lines			
5a	Overhead portions would be identical to Alternative 2; No audible corona noise associated with underground lines			
5b	Overhead portions would be identical to Alternative 2; No audible corona noise associated with underground lines			
5c	Overhead portions would be identical to Alternative 2; No audible corona noise associated with underground lines			
6a	Overhead portions would be identical to Alternative 2; No audible corona noise associated with underground lines			
6b	Overhead portions would be identical to Alternative 2; No audible corona noise associated with underground lines			
7 (Proposed Action)	Overhead portions would be identical to Alternative 2; No audible corona noise associated with underground lines			
Hybrid Alternative	No audible corona noise associated with underground lines in the Northern and Central sections. In the Central and Southern sections, the audible noise due to the corona effect of the overhead HVDC and HVAC lines would not exceed the EPA guidance level of Ldn of 55 dBA for outdoor areas beyond the transmission route and would not present a long-term impact (see **Section 4.1.7.2** of the final EIS).			

In the Southern Section, the estimated noise level at the nearest receptor to the Franklin Converter Station (a residence at approximately 200 feet [61 m]) could range from 45 to 58 dBA depending on station layout, equipment, and orientation.

J.1.8 Historic and Cultural Resources

Table J-7. Summary of Potential Impacts to Archaeological Resources – Construction

Alternative	Within Direct APE[a]	NRHP-Listed[b]	NRHP-Eligible[b]	Not Yet Evaluated for NRHP Eligibility[b]
1 (No Action)	--	--	--	--
2	49	--	--	49
3	49	--	--	49
4a	30	--	--	30
4b	35	--	--	35
4c	36	--	--	36
5a	44	--	--	44
5b	52	--	--	52
5c	57	--	--	57
6a	36	--	--	36
6b	41	--	--	41
7 (Proposed Action)	43	--	--	43
Hybrid Alternative	42	0	0	42
AC System Support Projects	6	--	--	6

Source: Claesson et al. 2014a, 2015a, 2015b; Claesson and Peone 2016; Freedman et al. 2015
[a] The Area of Potential Effects (APE) is defined in **Section 3.1.8.2** of the final EIS.
[b] The National Register of Historic Places (NRHP) is described in **Section 3.1.8**, including a discussion of the process of determining eligibility.

Table J-8. Summary of Potential Impacts to Archaeologically Sensitive Areas – Construction

Alternative	Within Direct APE	Total Land Area within Potentially Disturbed Areas acres (ha)
1 (No Action)	--	--
2	254	150 (61)
3	254	109 (44)
4a	174	125 (51)
4b	216	118 (48)
4c	270	120 (49)
5a	233	136 (55)
5b	252	145 (59)
5c	273	140 (57)
6a	198	158 (64)
6b	241	161 (65)
7 (Proposed Action)	308	123 (50)
Hybrid Alternative	328	191 (77)
AC System Support Projects	45	--

Source: Claesson et al. 2014a, 2015a, 2015b; Claesson and Peone 2016; Freedman et al. 2015

Table J-9. Summary of Potential Impacts to Architectural Resources – Construction

Alternative	Within Indirect APE	Within Direct APE	NRHP-Listed or -Eligible (within Indirect APE)	Not Yet Evaluated for NRHP Eligibility (within Indirect APE)
1 (No Action)	--	--	--	--
2	226	30	17	209
3	225	29	16	209
4a	230	174	49[a]	174
4b	259	248	50[a]	202
4c	347	320	57[a]	283
5a	230	53	17	213
5b	226	34	17	209
5c	232	49	17	215
6a	218	188	27[b]	190
6b	246	212	26[b]	219
7 (Proposed Action)	327	72	20	301
Hybrid Alternative	391	228	39	346
AC System Support Projects	62	--	0[c]	49

Source: Claesson et al. 2014b; Dunham et al. 2017; Higgins et al. 2015, 2016a, 2016b, 2016c, 2016d, 2016e, 2016f
[a] Seven previously evaluated architectural resources were determined to be not NRHP-eligible.
[b] One previously evaluated architectural resources was determined to be not NRHP-eligible.
[c] Thirteen previously evaluated architectural resources were determined to be not NRHP-eligible.

Impacts from Operations, Maintenance, and Emergency Repairs

Archaeological Resources and Archaeologically Sensitive Areas

Under the Hybrid Alternative, operation of the Northern, Central and Southern sections of the Project would have no impacts on archaeological resources or archaeologically sensitive areas, including those resources that are NRHP-listed or -eligible, because operation would not result in any further surface or subsurface ground disturbance.

Impacts from maintenance and emergency repair activities would be as described in **Section 4.1.8.2**.

Architectural Resources

Within the Northern Section, long-term, adverse impacts on architectural resources within the study area for the indirect APE would be limited to the first approximately 2 miles (3 km) of the alignment where a roadway corridor does not exist. The remainder of this alternative would be located underground. These impacts would result from ongoing overstory vegetation management, which has the potential to alter the setting of these resources.

Operation activities within the Central Section would result in long-term visual impacts on 179 architectural resources, and 40 within the Southern Section, located within the indirect or direct APE for each section under the Hybrid Alternative. These impacts would result from ongoing overstory vegetation removal and installation of aboveground structures.

More detailed descriptions of the types of impacts resulting from operation, maintenance, and emergency repair activities are described in **Section 4.1.8.2**.

J.1.9 Environmental Justice

Under the action alternatives and, therefore, the Hybrid Alternative, the demographic composition of the potentially affected groups compared to the surrounding unaffected population shows little to no differences in the percentage of minority residents, percentage of families living below the poverty level, and median household income levels. Therefore, in considering EO 12898, DOE has not identified the potential for disproportionately high and adverse impacts that would affect minority or low-income populations under any of the action alternatives. Specific demographic data are presented for each geographic section in **Chapter 4, Sections 4.2.9**, **4.3.9**, and **4.4.9**.

J.1.10 Air Quality

Table J-10. Summary of Potential Impacts to Air Quality – Construction Emissions and Loss of CO_2 Uptake from Vegetation Removal

Alternative	Total Construction Emissions (Entire Construction Period)							Loss of Carbon Sink from Forest Removal (metric tons CO_2)
	Criteria Pollutants (tons)						GHG Emissions (metric tons)	
	NO_x	VOC	CO	SO_2	PM_{10}	$PM_{2.5}$	CO_2	
1 (No Action)	--	--	--	--	--	--	--	--
2	365	32	229	5	724	123	91,930	215,068
3	164	17	150	0	421	61	33,734	66,737
4a	134	14	124	0	336	48	27,663	16,599
4b	141	15	130	0	356	51	28,910	17,283
4c	140	14	129	0	353	51	28,744	17,226
5a	362	32	235	5	729	122	89,894	186,921
5b	374	33	241	5	749	126	93,288	206,295
5c	365	32	237	5	738	123	90,615	189,159
6a	183	18	149	1	414	63	41,440	16,711
6b	190	18	155	1	433	66	42,687	17,411
7 (Proposed Action)	333	30	222	4	691	114	81,529	159,651
Hybrid Alternative	198	19	149	2	436	69	51,539	49,293

J.1.11 Wildlife

Table J-11. Summary of Potential Impacts to Wildlife Habitat

Alternative	Impacts to Wildlife Habitat acres (ha)
1 (No Action)	--
2	1,838 (744)
3	1,295 (524)
4a	295 (119)
4b	308 (125)
4c	296 (120)
5a	1,663 (673)
5b	1,770 (716)
5c	1,674 (677)
6a	426 (172)
6b	439 (178)
7 (Proposed Action)	1,494 (605)
Hybrid Alternative	621 (252)

Under the Hybrid Alternative, habitat fragmentation would be less compared to Alternative 7. Impacts to listed species would be similar to, but less than, Alternative 7 (see **Sections 4.2.11.6**, **4.3.11.12**, and **4.4.11.12**). With the implementation of applicant proposed measures (see **Appendix H**), no long-term impacts to federally- or state-listed species would be expected.

J.1.12 Vegetation

Table J-12. Summary of Potential Impacts to Vegetation

Alternative	Impacts to Vegetated Habitats (including Forestlands) acres (ha)	Impacts to Forestlands acres (ha)
1 (No Action)	--	--
2	1,682 (681)	747 (302)
3	1,144 (463)	233 (94)
4a	159 (64)	58 (23)
4b	157 (94)	60 (24)
4c	132 (53)	60 (24)
5a	1,505 (609)	651 (263)
5b	1,607 (650)	717 (290)
5c	1,504 (609)	659 (269)
6a	306 (124)	58 (23)
6b	303 (123)	60 (24)
7 (Proposed Action)	1,303 (527)	558 (226)
Hybrid Alternative	575 (232)	136 (55)

Under the Hybrid Alternative, impacts to vegetation would be less compared to Alternative 7. Impacts to listed species would be similar to, but less than, Alternative 7 (see **Sections 4.2.12.6**, **4.3.12.12**, and **4.4.12.12**). With the implementation of applicant proposed measures (see **Appendix H**), no long-term impacts to federally- or state-listed species would be expected.

J.1.13 Water Resources

Table J-13. Summary of Potential Impacts to Water Resources

Alternative	Wetland Disturbance acres (ha)			Impacts to Vernal Pools acres (ha)	Disturbance in Locations Overlying Aquifers acres (ha)	Disturbance in FEMA Flood Zones[a] acres (ha)	Miles (km) of Impaired Rivers Crossed	Disturbance to Water Supply Resources		
	Direct	Temporary	Secondary					PWS Wells	SWPAs acres (ha)	WHPAs acres (ha)
1 (No Action)	--	--	--	--	--	--	--	--	--	--
2	2 (0.8)	212 (86)	37 (15)	<0.5 (<0.5)	304 (123)	1,782 (721)	<0.5 (<0.8)	--	1,491 (603)	161 (65)
3	3 (1)	194 (79)	15 (6)	<0.5 (<0.5)	223 (90)	1,250 (506)	<0.5 (<0.8)	--	1,104 (447)	112 (45)
4a[b]	3 (1)	3 (1)	<0.5 (<0.2)	--	117 (47)	275 (111)	<0.5 (<0.8)	--	312 (126)	27 (11)
4b[b]	3 (1)	3 (1)	<0.5 (<0.2)	--	130 (52)	287 (116)	<0.5 (<0.8)	--	343 (139)	28 (11)
4c[b]	2 (0.8)	3 (1)	<0.5 (<0.2)	--	125 (51)	274 (111)	<0.5 (<0.8)	--	325 (132)	26 (11)
5a	2 (0.8)	182 (74)	36 (15)	<0.5 (<0.5)	299 (121)	1,606 (650)	<0.5 (<0.8)	--	1,204 (488)	165 (66)
5b	2 (0.8)	198 (80)	37 (15)	<0.5 (<0.5)	308 (124)	1,714 (693)	<0.5 (<0.8)	--	1,404 (569)	161 (65)
5c	2 (0.8)	183 (74)	36 (15)	<0.5 (<0.5)	311 (126)	1,618 (655)	<0.5 (<0.8)	--	1228 (497)	161 (65)
6a[b]	1 (<0.5)	23 (9)	<0.5 (<0.5)	--	194 (79)	407 (165)	<0.5 (<0.8)	--	443 (179)	75 (30)
6b[b]	1 (<0.5)	23 (9)	<0.5 (<0.5)	--	207 (84)	420 (170)	<0.5 (<0.8)	--	474 (192)	77 (31)
7 (Proposed Action)	2 (0.8)	170 (69)	36 (15)	<0.5 (<0.5)	264 (107)	1,438 (582)	<0.5 (<0.8)	--	1,036 (420)	87 (35)
Hybrid Alternative	2 (1)	40 (17)	2 (1)	< 0.1 (< 0.1)	269 (108)	629 (355)	0.3 (0.5)	--	725 (293)	91 (37)

Note: A vernal pool is a seasonal depressional wetland covered by shallow water for variable periods (often during winter or spring) that may be completely dry during summer and fall. An impaired river is a waterbody identified as impaired according to Section 303(d) of the Clean Water Act. A Public Water Supply (PWS) is defined as a piped water system having its own source of supply, serving 15 or more services or 25 or more people, for 60 or more days per year. Source Water Protection Areas (SWPAs) and Wellhead Protection Areas (WHPAs) are defined and regulated by the NH Department of Environmental Services under the NH State Drinking Water Act and federal Safe Drinking Water Act.

[a] Including all FEMA Flood Zones (Zone A, Zone AE, and Zone X).

[b] No vernal pools were identified in the Project corridor. Additional surveys may be conducted, as necessary.

J.1.14 Geology and Soils

Table J-14. Summary of Potential Impacts to Geologic and Soil Resources

Alternative	Total Ground Disturbance acres (ha)	Disturbance to All Hydric Soils acres (ha)	Disturbance to Prime Farmland, Farmland of Statewide Importance, or Farmland of Local Importance acres (ha)
1 (No Action)	--	--	--
2	1,838 (744)	48 (19)	465 (188)
3	1,295 (524)	51 (21)	345 (140)
4a	295 (119)	7 (3)	103 (42)
4b	308 (125)	7 (3)	111 (45)
4c	296 (120)	6 (2)	109 (44)
5a	1,663 (673)	47 (19)	421 (170)
5b	1,770 (716)	49 (20)	462 (187)
5c	1,674 (677)	47 (19)	431 (174)
6a	426 (172)	13 (5)	210 (85)
6b	439 (178)	13 (5)	219 (89)
7 (Proposed Action)	1,494 (605)	48 (19)	399 (161)
Hybrid Alternative	884 (358)	24 (9)	500 (202)