NORTHERN PASS TRANSMISSION LINE
VISUAL IMPACT ASSESSMENT

OCTOBER 14, 2015

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Northern Pass Transmission Project

Pittsburgh to Deerfield, New Hampshire

October 14, 2015

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1. OUTLINE

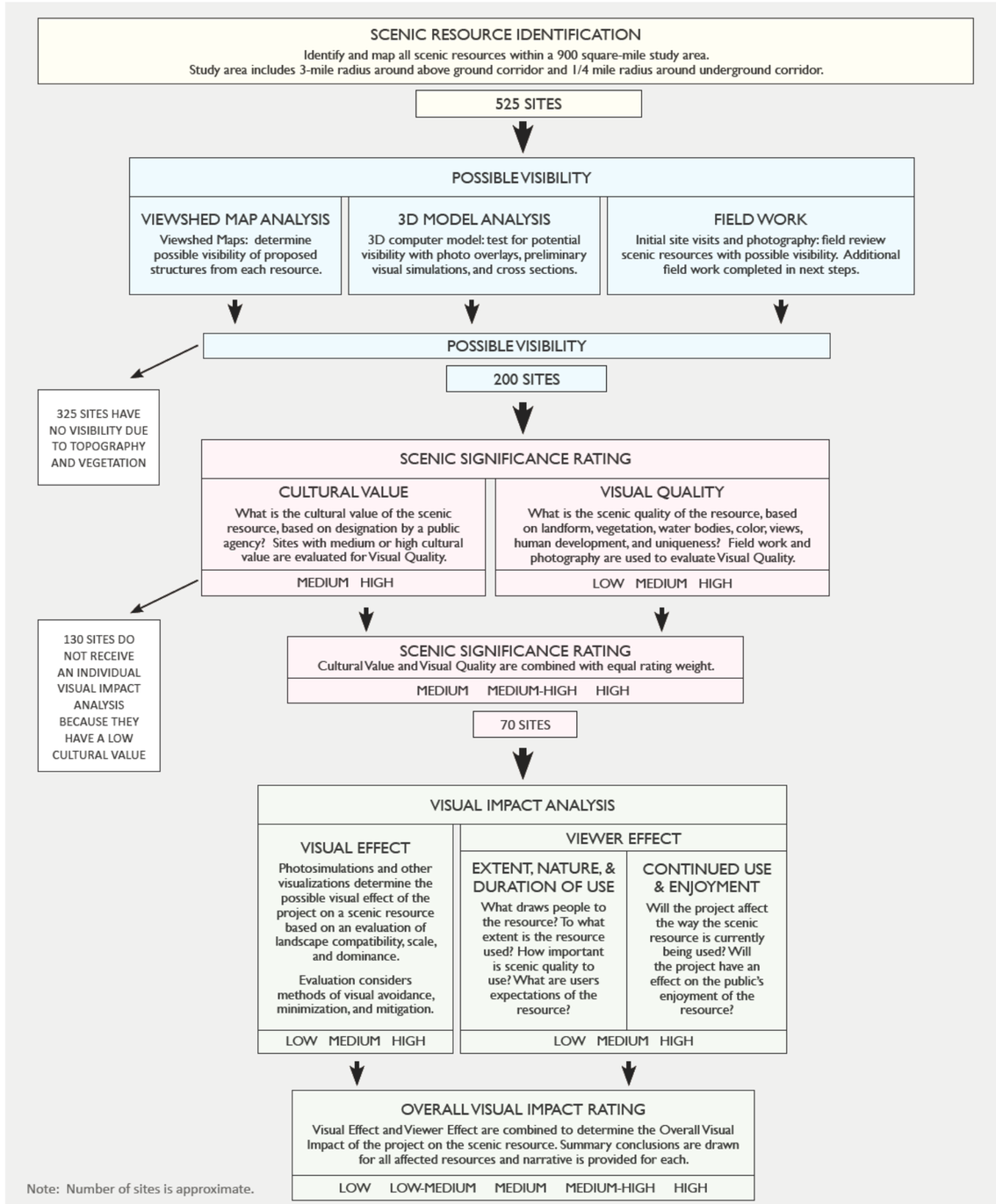
The methodology used to assess the potential visual effect of the Northern Pass Transmission Project (NPT) and to determine if it has an "unreasonable adverse effect on aesthetics," as required by New Hampshire law, uses well-understood methods for performing objective visual impact assessments (VIAs)[1]. The methodology for the NPT evaluation accounts for the characteristics of the New Hampshire landscape in accordance with the applicable legal standards pursuant to RSA 162-H.

VIAs for large-scale facilities typically contain the following components, all of which are included in the VIA for NPT:

- **Project Description** (narrative and graphic) of the proposed project and all associated facilities.
- **Methodology** used to identify and evaluate the visual quality of the landscape and the visual effects of the proposed project.
- **Legal Framework:** a brief description of the applicable legal criteria.
- **Existing Landscape Character:** a narrative and graphic depiction of the existing landscape near the proposed project that provides the context for evaluating any visual change.
- **User Expectations:** a narrative description of the average person's expectations related to the visual experience while visiting scenic resources. The assessment is based upon descriptions of the scenic resource in guidebooks and publications, field observations, as well as professional experience.
- **Viewshed Analysis:** a computer-based screening analysis to determine where project components may be visible within the area of potential effect (APE). For the above ground section of the NPT project, the study area extends out 3 miles on either side of the transmission corridor. For the underground sections of the proposed transmission line the study area extends out ¼ mile on either side of the line.
- **Inventory of Scenic Resources:** a listing of recognized scenic resources within the APE and a description of the landscape characteristics of those resources where the proposed project may be visible.
- **Visualizations:** photosimulations (highly accurate computer-enhanced photographs) that illustrate the visual appearance of the proposed project after its construction to determine its visual effects.
- **Mitigation Measures:** a description of the measures that have been taken to the extent practicable and/or will be taken to avoid, minimize, or mitigate potential visual effects of the proposed project.
- **Conclusion:** a determination of whether the site and facility would have an unreasonable adverse visual effect on aesthetics.

Based on an inventory of scenic resources within the designated study area, the methodology applies a screening process to determine from which of the scenic resources the NPT may be visible. As a result of this screening, some resources drop out of consideration for further evaluation. The Methodology Flow Chart provides a graphic depiction of the VIA process.

METHODOLOGY FLOW CHART



Note: Number of sites is approximate.

2. GEOGRAPHIC SCOPE

2.1 Study Area

For the above ground portion of the NPT, the study area (also known as the Area of Potential Effect or APE) is defined as a band of land 6 miles in width; 3 miles on either side of the centerline of the existing or proposed transmission corridor. This is consistent with the approach used in similar projects in other New England states. It is important to understand in setting the width of the study area that the visibility of transmission structures and corridors diminishes substantially with increased distance. While narrower study corridors are common for transmission line VIA's in the Northeast, we concluded that the more conservative 6-mile width was appropriate, given the elevation of the surrounding topography that can potentially provide viewing opportunities into the midground and beyond.

The transmission structures and corridor are generally not visible at distances greater than 3 miles. The GIS viewshed analysis described in Section 4.1 was performed to a distance of 5 miles on either side of the project to evaluate the newly-cleared transmission corridor (in the northern portion of the line[2]) that may be visible at this greater distance from elevated viewpoints.

Where the transmission line will be located underground in existing public roadways, there will be no above ground transmission structures or additional clearing beyond the public right-of way. Where the line is underground within public road rights-of-way, the study area is reduced to ¼ mile on either side of the roadway in recognition of the limited visibility of the project.

2.2 Subareas

The description of the existing landscape character is organized by subareas that are distinct physiographic areas with similar physical and visual characteristics. The VIA starts with Pittsburg at the northern end of New Hampshire on the Canadian border and terminates at an existing substation in Deerfield, NH, where the line interconnects with the New England power grid. Six subareas have been identified and are depicted on the following figure.

Subarea 1: 51.54 miles (includes two underground segments) from the Canadian/NH border to the Stark/Northumberland boundary.

Subarea 2: 29.05 miles from the Stark/Northumberland boundary to the Bethlehem/Sugar Hill boundary.

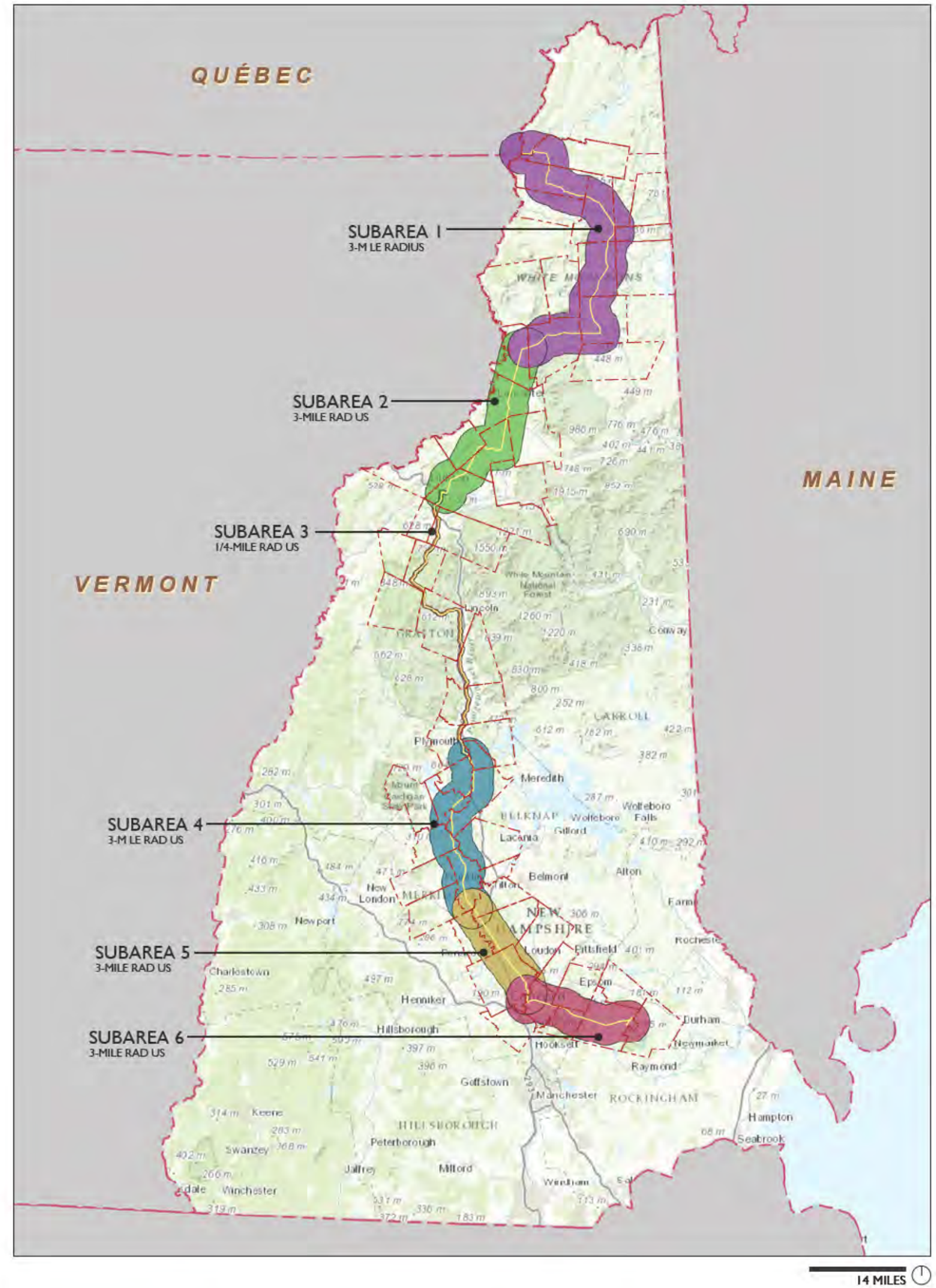
Subarea 3: 52.28 miles (underground section) from the transition station adjacent to Route 302 in Bethlehem to the transition station near Rt. 3 on the west side of the Pemigewasset River in Bridgewater.

Subarea 4: 25.89 miles from the Bridgewater transition station to the Franklin/Northfield boundary (near the Franklin converter station).

Subarea 5: 15.58 miles from the Franklin/Northfield boundary to the Concord/Pembroke boundary.

Subarea 6: 17.56 miles from the Concord/Pembroke boundary to the Deerfield substation.

SUBAREA MAP



2.3 Distance Zones

The designation of foreground, midground, and background distance zones provides a framework for evaluating the visibility of transmission lines in the larger landscape. Distance zones are based on the capacity of the observer to differential the type and detail of objects at varying distances under ideal viewing conditions. The United States Department of Agriculture (USDA) Forest Service visual analysis criteria for forested landscapes utilizes this approach. The distance zones used for the Northern Pass VIA are defined as:

Immediate Foreground (0 to 300' from the observer): At this distance people can recognize and distinguish individual trees, flowers, bark patterns, and other details of the natural world. They can also can detect details in the built environment, such as stone walls, building materials, and individual components of transmission structures (e.g., insulators, bolts, foundations for transmission structures).

Foreground (300' to 0.5 mile in distance): Within the foreground, observers are able to detect surface textures (e.g., the finish and pattern on a steel transmission structure), details (e.g., the individual components of lattice structures or converter stations), and a full spectrum of color. Where transmission lines cross public roads is a good example of a foreground view.

Midground (0.5 mile to three miles in distance): Within the midground (also known as the middle ground) the details in the landscape become subordinate to the whole: individual trees lose their identities and become forests; buildings are seen as simple geometric forms; roads and rivers become lines. Development patterns are readily apparent, especially where there is noticeable contrast in scale, form, texture, or line. Colors become somewhat muted (especially noticeable as the distance from the observer increases) and details become subordinate to the whole. This effect is intensified in hazy or rainy weather conditions, which tend to reduce color intensity and de-sharpen outlines even further. The majority of the viewpoints analyzed in the VIA are located in the midground.

Background (greater than three miles): Most transmission structures cease to be uniquely recognizable at distances greater than 3 miles. In the background the effects of distance and atmospheric haze (a phenomenon also known as atmospheric perspective) will obliterate surface textures, detailing, and forms of individual elements that make up the landscape. Changes to the landscape seen at this distance are visible only if they present a noticeable contrast in line or form, such as a hilltop transmission corridor, which may appear as a notch in the skyline, or an extended section of a transmission corridor that may appear as an introduced straight line.

Immediate Foreground: The closest Weathering Steel H-frame structure is 220 feet away in the Immediate Foreground. At that distance the observer can recognize details and individual components (e.g., insulators, bracing, hardware).
Foreground: The 2nd, 3rd, and 4th H-frame structures are in the Foreground (within 0.5 mile of the observer). At that distance some of the details are still apparent and individual structures are readily identified.
Midground: The last set of H-frame structures are in the Midground (0.5 mile to 3 miles). At that distance colors start to become muted and details are subordinate to the whole structure. Individual structures and conductors are difficult to distinguish, especially when looking down a transmission corridor.
Location: North of Nottingham Road in Deerfield.

Background. Transmission lines in the background (greater than 3 miles) are only recognizable if they present a noticeable contrast in form or line. Atmospheric haze and distance will obliterate surface texture, details, and the form of individual transmission structures in the background.
Location: North Overlook at Weeks State Park in Lancaster.

Midground. The corridor clearing is seen as a distinct line in the midground, where trees lose their individual identities and are seen as forests. Lattice structures in the midground tend to blend into the surrounding vegetation. Conductors are difficult to see except under certain lighting conditions.
Location: Inspiration point at Slim Baker Conservation Area in Bristol (Photosimulation).

Midground. From an elevated position in the midground the corridor clearing is seen as a distinct line created by the contrast between forest and ground plane textures. The color of the weathering steel structures will be somewhat muted at this distance and will be similar to the hues found in the surrounding landscape.
Location: The Rocks Estate (Photosimulation)

3. COMMUNITIES ALONG THE ROUTE

An overview of the existing built environment is included in the analysis of the landscape for each of the communities along the route of the Northern Pass Transmission project. This section describes each community and surrounding area as it exists today, from which any proposed changes can be compared and evaluated. Information has been derived from field observations, municipal and regional plans, online sources, reference books on natural and cultural history, topographic maps, aerial photography, road atlases, and similar sources.

Communities. The following information is provided for each community:

- Physical Characteristics: landforms, water features, vegetation patterns, and cultural modifications
- Population: overview, size, and density
- Development Patterns: town development and current use patterns
- Land Use Planning: overview of town and regional plans.

Characteristic Photographs. Annotated photographs of the landscape and scenic features in the vicinity of the transmission corridor.

Scenic Resource Map. A topographic base map indicates the location of major roadways, water bodies, parks, conservation areas, and other landmarks. Scenic resources identified in the base map are also listed in the Scenic Resources Table (see description below). The map also shows the existing or proposed transmission corridor and the boundaries of the three-mile and ¼ mile[3] study area.

Scenic Resources Table. The scenic resources identified within the study area in each community are listed in a Scenic Resource Table that provides the following information:

- Name of the scenic resource and a number that is keyed to the location map
- A brief description of the resource
- The publication or source(s) of the information identifying the resource
- Ownership
- Distance to the nearest point on the transmission corridor
- Ratings of Cultural Value, Visual Quality, and Visual Significance
- Possible visibility of the proposed structures based on viewshed mapping.

Scenic resources with possible views (based on preliminary screening) of the NPT project that received a scenic significance rating of at least 'medium' are highlighted in yellow.

4. DETERMINATION OF VISIBILITY

4.1 Viewshed Mapping

The term 'viewshed' has two meanings relative to the Northern Pass VIA:

- **Scenic resource viewshed** is all the surface area visible from a scenic resource.
- **Project viewshed** is the area from which the transmission structures may be visible.

A viewshed map is a predictive screening tool used to illustrate where transmission structures may be visible. Viewshed maps are used as an initial step to determine where proposed transmission structures might be visible in the study area, and more specifically, whether they may be visible from certain scenic resources.[4] Such maps are also used to help determine whether the transmission line may not be visible from a scenic resource due to topography, intervening vegetation, or buildings, and therefore would not be affected.

Appendix A presents a series of three types of viewshed maps at a consistent scale for the entire length of the project.[5] There are no viewshed maps for Subarea 3, since this section is entirely underground in an existing roadway, i.e., there are no proposed transmission structures.

See the *Viewshed Cross Section* below for further explanation of how a viewshed map functions.

Existing Structure Visibility Map

The first map in the series shows all locations where existing transmission structures may be currently visible within 5 miles on either side of the corridor. A transmission structure will be counted as 'visible' if the computer determines that a single point on the top of the structure would be seen from a point on the ground and not blocked by trees or buildings. This is a very conservative approach to estimating visibility, since structures are generally not visible beyond 3 miles. The map does not make any distinction as to the degree of visibility, as long as just the very top of the structure may be visible. The areas shown in purple should therefore be interpreted with caution.

The areas where existing structures may be visible are shown in shades of purple and are grouped according to the number that may be partially or fully visible: 1-5 structures; 6-10 structures; 11-20 structures; and over 20 structures.

Proposed Structure Visibility Map

The second map in the series shows where transmission structures (both existing 115-kV structures, relocated 115-kV structures, and new NPT structures) may be visible within 5 miles following the installation of the NPT project. As in the first map, the areas where structures may be visible are shown in shades of purple and are grouped according to the number that may be partially or fully visible: 1-5 structures; 6-10 structures; 11-20 structures; and over 20 structures. Areas shown in purple provide only an indication of possible visibility and do not distinguish degrees of visibility.

In areas where the NPT project is located in an existing transmission corridor, the Proposed Structure Visibility Maps show a composite of the existing and proposed visibility areas. In those areas that are located in a new transmission corridor (i.e., in Subarea 1 north of Bickford Mountain in Dummer), the Proposed Structure Visibility Maps only show where proposed structures would be visible.

Increased Areas of Structure Visibility (Delta)

The third map in the series shows the 'delta' or areas with possible increase in structure visibility. The two colors represent: a) where both the existing transmission structures may be partially or fully visible within 5 miles (colored orange), and b) where the existing, relocated, and proposed NPT transmission structures may be partially or fully visible within 5 miles (colored purple). The map is composed of an overlay of the first two maps.

VIEWSHED MAP EXAMPLES

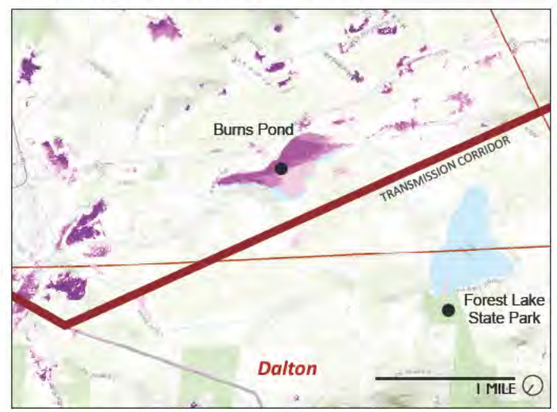
LEFT: Shows number of existing structures visible within 5 miles.

MIDDLE: Shows number of existing and proposed NPT structures within 5 miles.

RIGHT: Change notes to read: (Orange) Areas where existing and proposed structures are visible (Purple) Areas where only proposed structures are visible

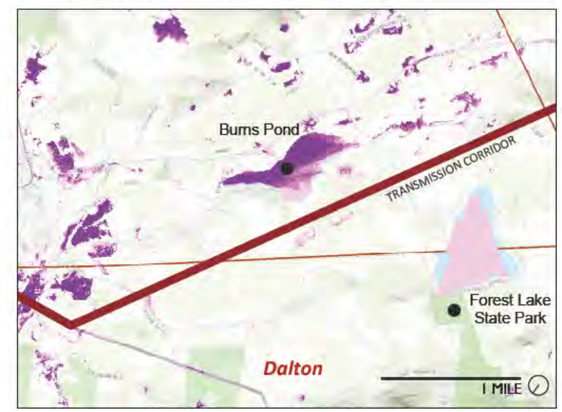
See all maps in Appendix A

EXISTING STRUCTURE VISIBILITY MAP

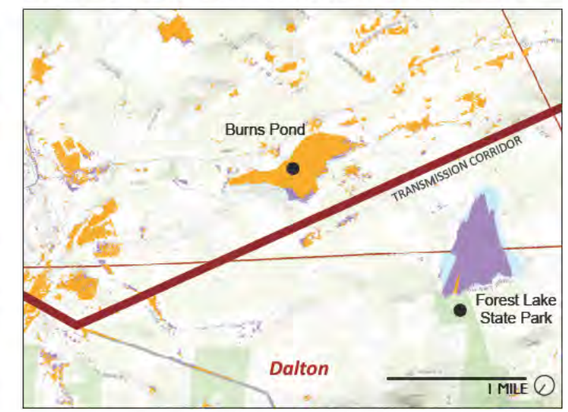


1-5 VISIBLE STRUCTURES
6-10 VISIBLE STRUCTURES
11-20 VISIBLE STRUCTURES
> 20 VISIBLE STRUCTURES

PROPOSED STRUCTURE VISIBILITY MAP



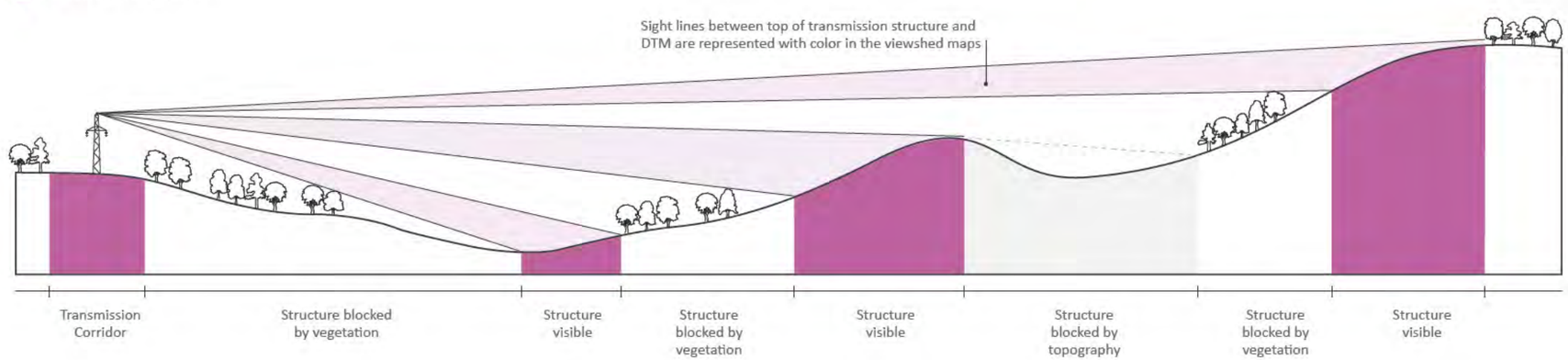
AREAS OF INCREASED STRUCTURE VISIBILITY MAP



Areas where existing and proposed structures are visible
Areas where only proposed structures are visible

VIEWSHED CROSS SECTION

The section to the right depicts how various points in the landscape may have possible visibility of a structure, or how visibility may be blocked by topography or vegetation.



METHODOLOGY

Limitations of Viewshed Mapping

Due to the relative coarseness of the data, the LiDAR and other data used to create the viewshed maps does not account for every condition within the study area. There are areas where the maps indicate transmission structures would be visible, when, in fact, field observations and 3-D modeling analyses show the opposite, primarily due to existing vegetation. There are likewise some situations where the viewshed maps indicate that a resource would not have views, but field observations have determined the existing (and therefore proposed) corridor does have a view. This latter condition occurs in heavily forested areas where the observer looks over recent clear-cuts, fields, or other similar openings in the trees.

While viewshed maps indicate where and approximately how many structures may be visible, they do not provide the detail necessary to evaluate potential visual effects: e.g., how much of a structure may be visible, the distance to individual structures, which specific structures would be visible, the relative size of proposed structures compared to trees and other scalable features, or whether they would be noticeable at all. This is why the raw depiction of visibility data can be misleading. Viewshed mapping provides the first step in identifying what areas may have visibility. Additional visual studies (e.g., visual simulations, cross sections, 3-D modeling) and fieldwork are used to determine actual visibility and the details and context of a view from any location (See 6. Fieldwork).

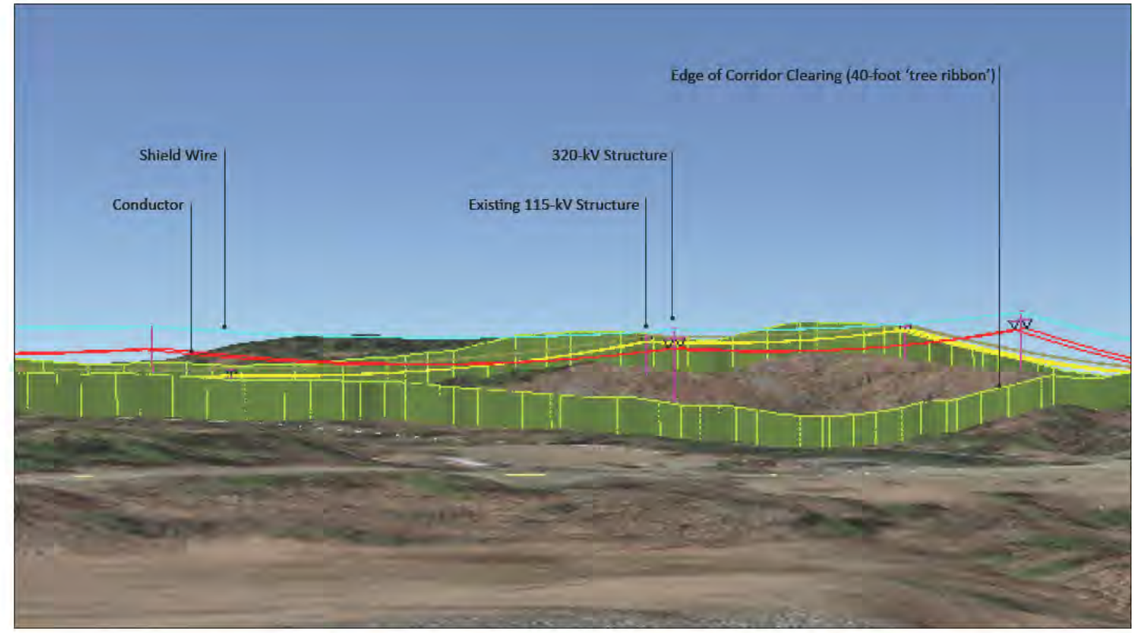
See Appendix A for the technical description of the viewshed development process. The description also includes information about data accuracy and the ESRI model used to develop the Viewshed Maps.

4.2 Determination of Possible Visibility from Scenic Resources

The viewshed map showing visibility of all existing, relocated, and proposed structures was used to determine possible visibility of structures from scenic resources. All identified scenic points, linear features, and scenic areas were evaluated to determine if the viewshed area overlapped the resource feature. To account for inaccuracies in the viewshed data, a second analysis was conducted to determine if the viewshed area was located within 50 feet of each resource. If the viewshed map intersected with a resource or was located within 50 feet of a resource, the resource was classified as having possible visibility. The potential visibility classification is included as a column in the Community Resource Table for each community.

4.3 Computer Modeling

Viewshed mapping is used to determine possible visibility of transmission structures within the study area. The visibility of the clearing required for the transmission corridor is analyzed with 3-D computer modeling using Google Earth Pro and ESRI ArcScene. Data on the proposed corridor (width, alignment) is imported into the computer program in the form of geo-referenced shapefiles. The limits of the corridor clearing are then extruded as 40-foot high vertical 'ribbons' that represent the proposed tree line on either side of the cleared corridor.[7] The resultant computer model of the proposed corridor clearing is then evaluated from key observation points to determine if the sides of the clearing may be visible (and thus creating a line in the landscape) and whether the ground surface would be visible (thus creating a potential contrast in color and texture).



Computer Modeling in Google Earth Pro. Model of proposed transmission structures and 40-foot 'tree ribbon' represents edge of corridor clearing.

5. SCENIC RESOURCES

5.1 Inventory of Scenic Resources

The inventory of scenic resources includes:

- **Publicly accessible places** that have been designated or recognized by municipal, regional, state, or national authorities[8] for their scenic or recreation quality and are visited by the general public for the use, observation, enjoyment, and appreciation of their scenic or recreational qualities.
- **Conservation lands** or easements that have been recognized for their visual quality and are open to the public.
- **Tourism destinations** (e.g., lakes, ponds, rivers, parks, trails, recreation areas, inns, grand hotels, etc.) that are open to the public.
- **Town and village centers** with recognized visual quality.

The inventory identifies scenic resources within the study area, based on published documents (government publications and maps, guidebooks and atlases, municipal and regional plans), on-line sources (State GIS data, Google Earth, tourist and recreation websites), and field investigations. The results of this listing are provided in the Inventory of Scenic Resources Table for each community. A listing of source material used to identify scenic resources is provided for each community and as a complete list in Appendix B.

5.2 Significance of Scenic Resources

All the resources identified in the Inventory of Scenic Resources are assumed to possess some cultural and visual quality. However, some resources have greater scenic or cultural value than others. The next step in the evaluation process is to determine the significance of each scenic resource that may have a view of the project. Scenic resources within the study area include places of national, state-wide, regional, and local significance. Scenic resources that are visited by large number of people from across the country or the state are generally considered to be of national or state-wide significance. Scenic resources primarily visited by people from the local communities are considered to be of local or regional significance.

In making a determination of significance, each resource was evaluated for its visual sensitivity (i.e., sensitivity to change) based on its cultural value and visual quality.

5.2.1 Cultural Value

Cultural value is the value that has been placed on a particular resource by a public agency or non-governmental organization, and indicated by formal designation, inclusion in current planning documents, or similar sources of information. Scenic resources are classified as having high, medium, or low cultural value:

High Cultural Value: Resources of national or state significance that are designated, protected, or noteworthy due to the quality of the surrounding scenery that is intrinsic to their designation. In most cases these are resources that attract large numbers of visitors from across the state and areas outside New Hampshire. Examples include:

- National Scenic Byways
- Rivers designated under the National Wild and Scenic River System
- State Parks that are noteworthy for the quality of their scenic resources
- NHDOT designated scenic overlooks
- Conservation areas with high visual quality and heavy recreational use by visitors from the region or state
- Publicly accessible properties on the National Register of Historic Places that derive their significance from their landscape setting.

Medium Cultural Value: State or national resources that are designated, protected, or primarily noted for values other than scenic, but have a scenic component evident in the designation; or state or national resources noted for visual quality that primarily attract regional or local users. Examples include:

- State Forests with developed recreation facilities, such as hiking trails, campsites, boat launches
- Publicly accessible State historic sites that have a scenic component related to their historic designation
- State-wide and regional non-motorized trail systems
- State Scenic and Cultural Byways
- Accessible fire towers owned by the State and administered by the NH Division of Forests and Lands
- Rivers with particular scenic qualities recognized in the NH Rivers Management Protection Program[9]
- Lakes and ponds with public access
- Conservation lands open to the public and preserved primarily for scenic qualities and recreational use.

Low Cultural Value: Resources that are designated, protected, or noted primarily for values other than scenic, or scenic areas that primarily attract local users. Examples include:

- State forests without developed recreation facilities
- Town and village centers with locally recognized visual quality
- Town forests
- Municipal parks and recreational areas
- Scenic resources noted only on municipal plans
- Municipal scenic roads
- National Natural Landmarks
- Wildlife management areas
- State-wide snowmobile and ATV trails
- Rivers not included in the NH Rivers Management Protection Program
- Conservation areas with limited public accessibility or conserved for reasons other than for recreation or scenic qualities
- Lakes and ponds with limited public access

HIGH CULTURAL VALUE: a state park with structures on the National Register of Historic Places that derive their significance from their landscape setting. Location: Weeks State Park in Lancaster


MEDIUM CULTURAL VALUE: A publicly accessible waterbody on a State designated scenic byway. Location: Pontook Reservoir in Dummer


LOW CULTURAL VALUE: a municipal recreation area. Location: Municipal Field in Northumberland.

5.2.2 Visual Quality

The Bureau of Land Management's (BLM) Visual Resource Management System was used to analyze the visual quality of each scenic resource with potential project visibility.[10] These scenic resources were rated for landform, vegetation, water, color, views, uniqueness, and human development (see the Visual Quality Evaluation Chart). The ratings are based on comparisons with similar landscapes in New Hampshire.[11]

Evidence of human development (cultural modification) is an important part of the evaluation, since much of the study area has been altered to varying degrees. Development – which may include residential, commercial, industrial, or public buildings and infrastructure; roads, bridges and highways; transmission lines; cell towers; wind energy facilities; hydroelectric facilities – can add or detract from the quality of the landscape and affect visitors' expectation of visual quality.

The scores for each resource are totaled to determine its visual quality:

- **High** (Distinctive): Areas where landforms, vegetation patterns, water bodies, rock formations, development patterns, or combinations of these elements are of unusual or outstanding visual quality. **19 or more points.**
- **Medium** (Noteworthy): Areas where landform, vegetation patterns, water bodies, development patterns, or combination of these elements are less common than the characteristic landscape, but not outstanding relative to national or state-wide measures. **12 to 18 points.**
- **Low** (Common): The characteristic landscape of the area, where landform, vegetation patterns, water bodies, cultural development patterns, or combination of these elements have low to moderate scenic quality. These landscapes have some visual appeal, but may lack notable water bodies, significant landforms, or other distinguishing characteristics. They may have discordant features that are highly visible or may be affected by land uses that contrast with the character of the identified scenic area. **0 to 11 points.**

VISUAL QUALITY EVALUATION CHART

CATEGORY	HIGH (DISTINCTIVE)	MEDIUM (NOTEWORTHY)	LOW (COMMON)
LANDFORM	High vertical relief: prominent/ distinct peaks, cliffs, or extensive rock outcrops; high degree of complexity; abrupt change in elevation; significant physical features: cliffs, ledges, rockslides.	Rolling hills and mountains of moderate elevation; variety in size and shape of landforms; or detail features that are interesting though not dominant or exceptional.	Low unnamed hills; flat valley bottoms with no sense of enclosure; no distinguishing topographic features.
	5	3	1
VEGETATION	Large variety of vegetative types and species: interesting forms, textures, patterns, age classes.	Some variety of vegetation, but only one or two major types.	Little or no variety or contrast in vegetation.
	5	3	1
WATER BODIES	Lakes/ponds/rivers with complex shorelines; or water bodies are a dominant feature in the landscape.	Water bodies present, but simple in form.	Absent; or present, but not noticeable.
	5	3	0
COLOR	Rich color combinations, variety or vivid color; or pleasing contrasts in the vegetation, water, and other natural elements	Some intensity or variety in colors and contrast of the rock, and vegetation, but not a dominant scenic element.	Subtle color variations, contrast, or interest; generally muted tones.
	5	3	1
VIEWS	Complex views with visual interest in foreground, midground, or background; or dominant focal point	Views of similar shaped hills; views limited to midground.	Limited to foreground and midground; focal points absent
	5	3	1
UNIQUENESS	One of a kind; or unusually memorable, or scarce within the region.	Noteworthy, though somewhat similar to other landscapes within the region.	Interesting within its setting, but fairly common within the region.
	5	3	1
POSITIVE HUMAN DEVELOPMENT	Human development significantly adds to the visual quality and interest of the area.	Modifications are above average and add favorably to visual variety.	Modifications add little to no visual interest to the area.
	5	3	0
NEGATIVE HUMAN DEVELOPMENT	Totally natural landscape, or with modifications that are not seen as discordant elements.	Modifications are somewhat discordant and detract from the visual quality of the area.	Existing human development is very discordant and inharmonious.
	0	-3	-5

NOTE: Values for each rating criteria are maximum and minimum scores only. It is possible to assign scores within these ranges.

VISUAL QUALITY RATING EXAMPLES

LOW VISUAL QUALITY. Example of a common landscape that is characteristic of much of the study area. Location: Route 3 in Whitefield

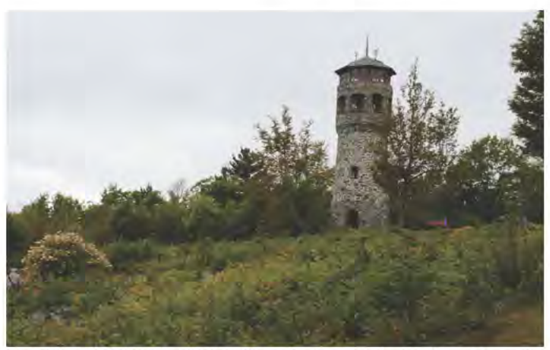
MEDIUM VISUAL QUALITY. Example of a landscape that is noteworthy for its rolling hills, water feature, variety of vegetation and color, and discordant modifications that are not highly visible, e.g., generator lead line, the top of a substation, wind turbines. Location: Big Dummer Pond, Dummer.

HIGH VISUAL QUALITY. Example of a landscape that is distinctive for its complex views of mountains with high vertical relief, variety in vegetation patterns, and development patterns that add visual interest. Location: Route 2 Overlook in Lancaster.

LANDFORM: High Rated view of Percy Peaks from Christine Lake in Stark.

WATERBODY: High rated view of Cherry Pond in Jefferson.

UNIQUENESS: High rated view of Franklin Falls Dam in Franklin.



POSITIVE HUMAN DEVELOPMENT: Stone fire tower at the Weeks Estate creates a distinctive focal point in the landscape.

VIEWS: High rated view of Presidential Range from the Mount View Grand Resort in Whitefield.

NEGATIVE HUMAN DEVELOPMENT: Industrial development on Route 3 in Bridgewater near transition station detracts from visual quality of the landscape.

5.2.3 Scenic Significance

The ratings for cultural value and visual quality for each scenic resource are combined in an equally weighted matrix to obtain a composite rating of Scenic Significance. The result provides a measure of the overall significance of each resource by considering inherent scenic qualities and the value placed upon these resources by the public.

Scenic resources that receive at least a 'Medium' Scenic Significance rating are further analyzed to determine the level of visual change/impact the NPT project may have on the resource.

SCENIC SIGNIFICANCE RATING MATRIX

		CULTURAL VALUE		
		LOW	**MEDIUM**	**HIGH**
VISUAL QUALITY	**LOW**	Low	Low-Medium	Medium
	MEDIUM	Low-Medium	Medium	Medium-High
	HIGH	Medium	Medium-High	High

Scenic resources with a rating in grey cells receive an individual Visual Impact Assessment.

6. FIELDWORK

Scenic resources with potential project visibility (identified in the Scenic Resource Inventory Table) were assessed by TJD&A staff, who visited each site to evaluate existing conditions and determine or verify visibility from roads, parks, trails, and other publicly accessible locations.

6.1 Key Observation Points (KOPs)

The evaluation of each scenic resource is based upon an assessment of views from key observation points (KOPs) to determine the visual effect of the project on the resource and the effect that it may have on public use. A KOP is a publically accessible location in or adjacent to a scenic resource where a) the largest number of transmission structures or the maximum extent of the proposed transmission corridor would potentially be visible, and b) where the greatest amount of public use is expected. These locations are determined from viewshed mapping, published information on the resource, and field verification.

6.2 Points, Lines, and Areas

Scenic resources often can be views from several locations, and more than one KOP may be evaluated. For the purpose of determining where to select KOPs, scenic resources can be categorized as scenic points, linear features, or areas.

- **Points** (e.g., scenic overlooks, historic structures, mountaintops). For these types of resources a single viewpoint will suffice to illustrate the effect of the NPT project. A point may be a location within a larger landscape (e.g., a State park) that attracts visitors by its prominence, location as a destination, or architectural/historical significance.
- **Linear Features** (e.g., scenic byways, river corridors, hiking trails). Linear resources often offer a sequential opportunity to experience the landscape from several viewpoints along a physical or cultural feature (such as a river or road). Locations are selected (from guidebooks and other published material) along the linear feature where a) the public is most likely to be attracted (e.g., boat launches on a river, scenic turnouts on a scenic byway, or open ridges on hiking trails), and b) viewshed mapping and computer modeling indicates the project is likely to be visible.
- **Scenic Areas** (e.g., large lakes, state parks, historic districts). Scenic areas, especially waterbodies, offer multiple vantage points to experience the landscape. Locations are identified (from guidebooks and other published material) where a) the public is most likely to be attracted (e.g., boat launches on a lake, camping areas in a state forest, or hiking trails within a state park), and b) viewshed mapping and computer modeling indicates the greatest number of structures are likely to be visible.

6.3 Fieldwork and Photography

Most of the photographs in the VIA were taken by TJD&A staff with a Nikon D7100 digital camera (24 megapixel), equipped with a GPS unit (Solmeta Geotagger Pro 2) that records the lat/long, elevation, and bearing for each image. At most scenic resources locations, a series of overlapping photographs were taken to create panoramic views that illustrate actual viewing conditions.

Two types of photographs were taken during field visits: 1) **context photographs**, to illustrate site conditions, scenic views, vegetation patterns, structures, etc., and 2) photographs from KOPs to be used in photosimulations. For the latter images, the camera was set to record at a "normal" focal length (i.e., equivalent to that found on a 50mm SLR camera), which matches the image seen by the human eye.

During the field visit photographs to be used in photosimulations are taken from several locations, based upon tree cover, evidence of public use, accessibility, and possible visibility of the proposed transmission line. The selection of the images for photosimulations is made after evaluating project visibility in Google Earth Pro to determine where the maximum number of structures may be visible from publicly accessible locations.

Beginning in April 2014, multiple site visits were conducted to observe existing conditions at different times of the year and under different lighting and atmospheric conditions. Most of the fieldwork was conducted by teams of 2-3 people, led by a principal or associate with experience in visual impact assessments. One person photographed the landscape and the other(s) reviewed the maps and recorded observations.

Maps were developed in Google Earth Pro prior to site visits to guide site investigations. The graphic content included aerial photography, topographic information, the transmission corridor location, and identified scenic resources within 3 miles of the transmission line. Field observations were recorded with written documentation, digital photography, GPS route records, and GPS photographic data. Collected field data includes:

- GPS coordinates of observation points
- Angle of view that contains existing structures
- Description of the visibility, number, and appearance of existing transmission structures
- Orientation of view
- Focal point(s) in the landscape, where present
- Approximate tree heights
- Identification of visible reference points in the landscape (e.g., road intersections, buildings) to register photographs with computer-generated models
- Use patterns evident on the site (parking areas, trails, people using the resource)
- Interpretive material (signs, pamphlets, maps) provided
- Discordant features.

METHODOLOGY

7. VISUALIZATIONS

Several visualization techniques are used in the VIA to illustrate the visual effect of the NPT project on scenic resources. These include computer modeling, cross sectional analyses, and photosimulations.

7.1 Photosimulations

Photosimulations (montages that combine photographs of the scenic resource with computer-generated models of the transmission line) are provided to illustrate how the NPT project will look from KOPs and the surrounding landscape. These are accurate representations of proposed future conditions that take into account topography, vegetation, existing transmission structures, and other factors to help reviewers understand the visual effect that the project may have on the scenic resource.

In determining the optimum location of the photosimulation, an initial evaluation of project visibility is done in Google Earth Pro using a 3-D computer model of the proposed transmission line. Burns & McDonnell (B&M), the design engineers for the NPT project, generated the model in PLS-CADD, a software program used to design overhead transmission lines. The ground elevations of the structures are based upon the high resolution LiDAR survey data used to create the viewshed maps. The computer model of the transmission line provides an accurate representation of conductors and shield wires, structure height, structure spacing, conductor sag between structures, and base elevations.

The photosimulations start with photographs that exhibit good atmospheric clarity and reflect a range of lighting and weather conditions that the average observer might experience throughout the year. Panoramic photographs are provided in locations where the horizontal field of view extends over more than a 45-degree angle to give a contextual view of the landscape and to illustrate the visible extent of the transmission corridor.

Photographs to be used in the photosimulations are inserted into Google Earth Pro, using GPS coordinates captured when the photographs were taken. The photographs are aligned to the Google Earth Pro image using vertical and horizontal reference points (e.g., buildings, walls, and background topography). See 4.3 for further explanation of the corridor modeling process. Once the photograph and the computer model are combined and properly aligned, it is possible to determine how much of the structures and the conductors would be visible from the selected viewpoint, whether structures would be seen above the horizon, and the extent that existing vegetation blocks views of the structures.

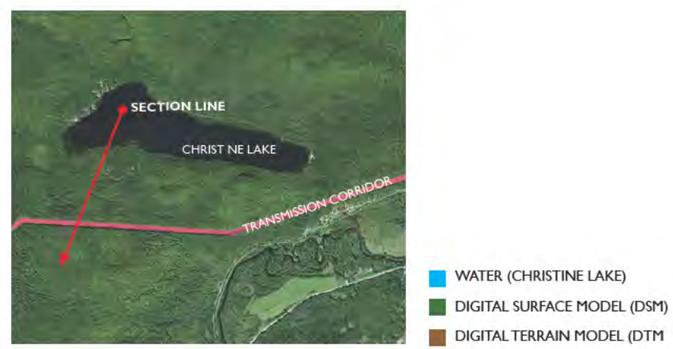
The Google Earth Pro photo overlay and the Sketchup model of each structure are aligned over the existing conditions photograph. Post-production editing eliminates those portions of the structures on the computer model that will be blocked by terrain or vegetation. Technical fine-tuning of the image accounts for time of day, weather conditions, haze, and other environmental factors to produce a realistic depiction of the proposed transmission line components.

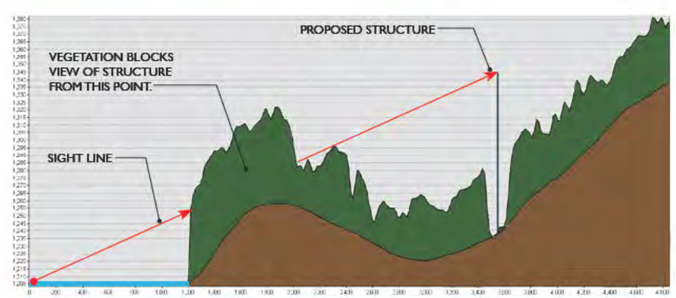
In some situations (e.g., Catamount Pond in Bear Brook State Park) the computer model and cross-sectional analysis indicated that there would be no views of the NPT project from the selected KOP. In these cases, the existing conditions photograph illustrates the proposed conditions.

7.2 Cross Sections

Cross sectional modeling is used to verify structure visibility in selected areas and assess the accuracy of photosimulations. The cross sections in the VIA are done in ESRI ArcMap and are based on the Digital Terrain Model (DTM) and Digital Surface Model (DSM) generated by Intermap LiDAR data. As a check, cross sections are also created in Google Earth Pro, which uses a conservative tree height of 40 feet.

CROSS SECTION

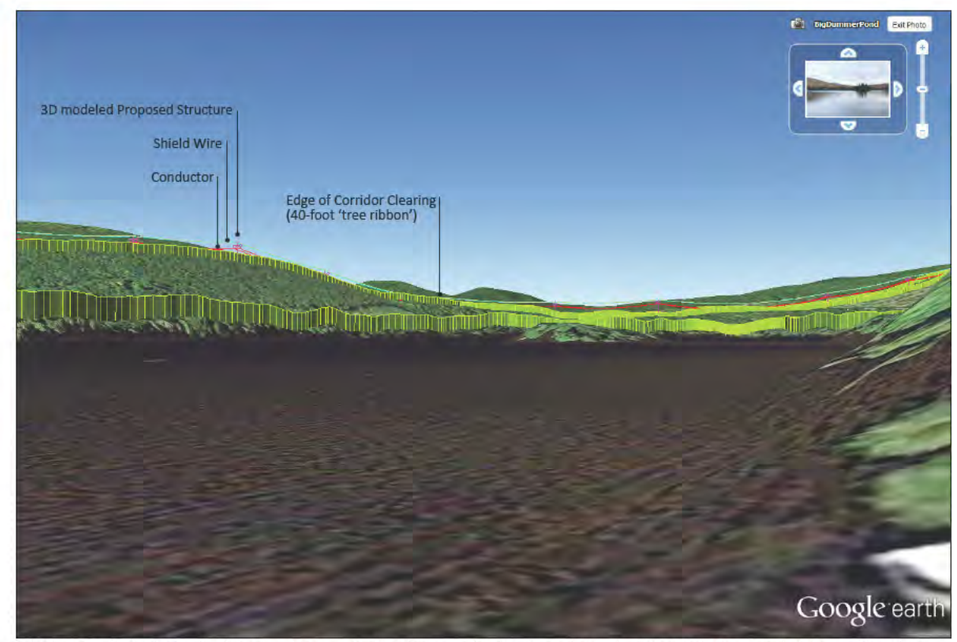




Cross section was generated using Intermap LiDAR data in ESRI ArcScene. Proposed transmission structure is placed in section to determine if it will be seen from a given location. This section demonstrates that there will be no visibility of this structure from this point in Christine Lake.

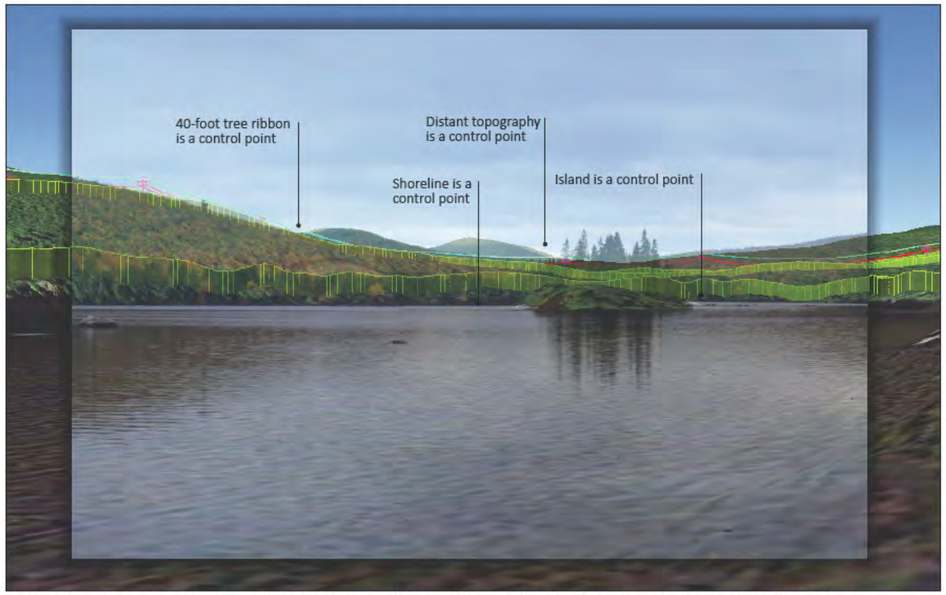
PHOTOSIMULATION PROCESS

STEP 1: Original Photograph is collected at a Key Observation Point (KOP). (Big Dummer Pond in Dummer provides example)

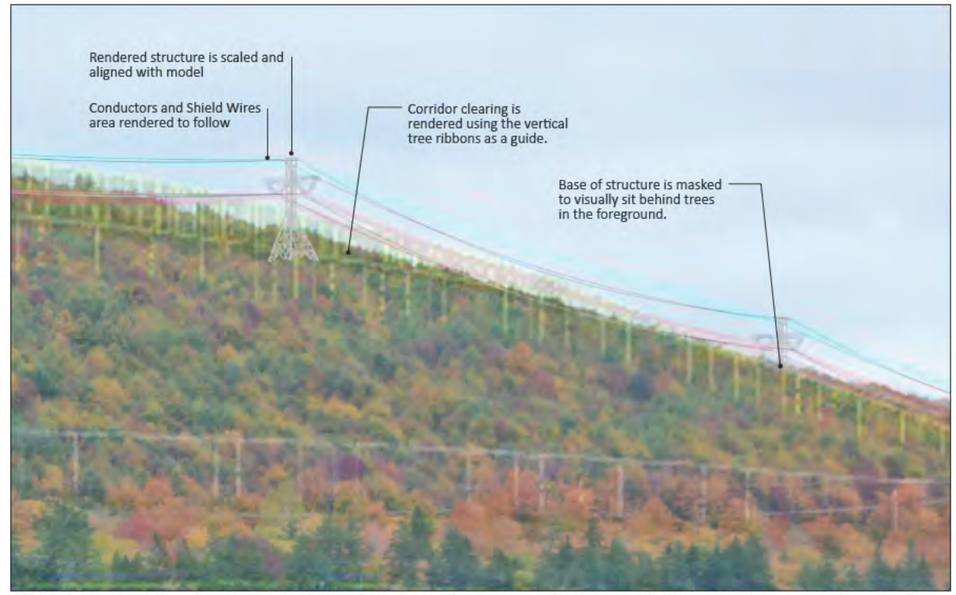


STEP 2: Google Earth Pro Model. The photography location provides the viewpoint in the 3D Model. Structure heights and locations, conductor and shield wire placement are represented in Google Earth terrain model. 40-foot tree ribbons are drawn on the shoreline and at the edge of the corridor clearing to represent tree height and location.

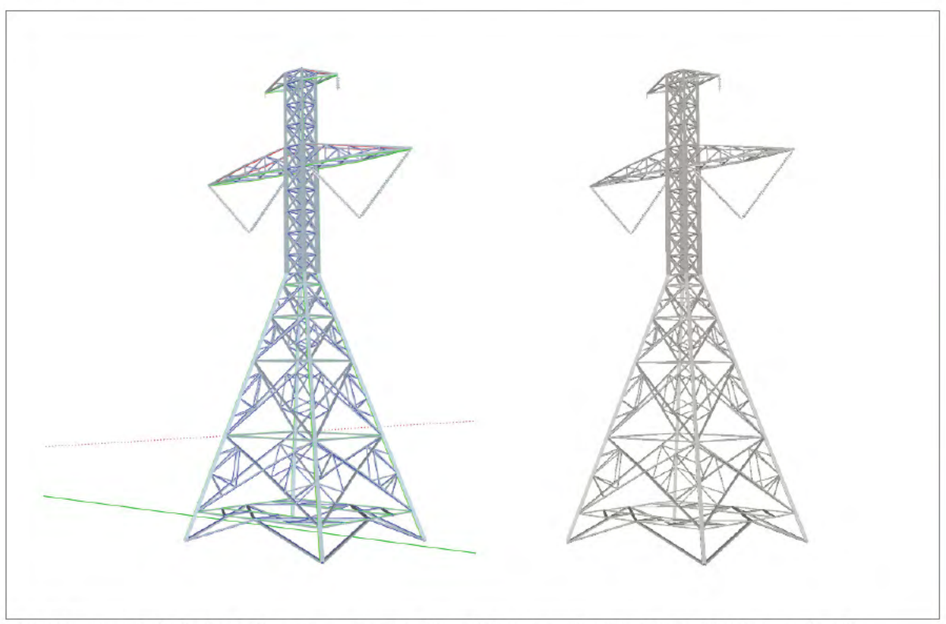
PHOTOSIMULATION PROCESS CONTINUED



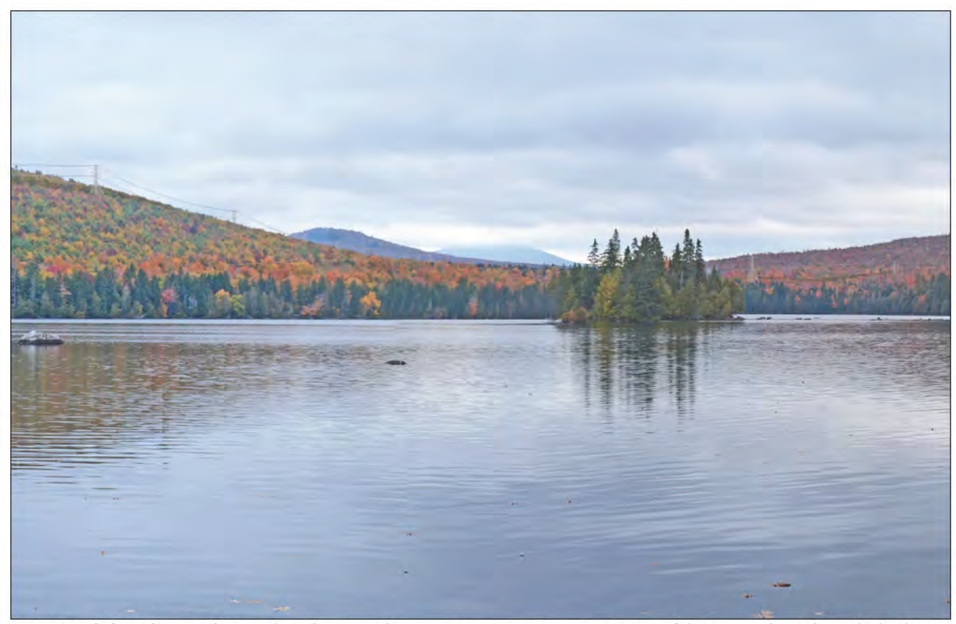
STEP 3: Google Earth Pro Photo Overlay. The photograph is overlaid with the Google Earth model (through the Photo Overlay software function. The camera focal length is set to match the original photograph (35mm or 55mm equivalent). The camera height is set to the same height as the original photograph (1.5 meters from ground elevation). Vertical and horizontal control points (including shorelines, buildings, vegetation, and topography) are used to align the photograph to the model. The control points used to align this photo overlay are called out above.



STEP 5: Photoshop Image Rendering. The Google Earth Overlay is exported to Photoshop and realigned with original photograph. The rendered models are exported from SketchUp and are aligned with the structure guides in the overlay. The conductors and shield wires are drawn between the structures. The corridor clearing is rendered into the exiting photograph following the modeled tree ribbons.



STEP 4: Structure Model Render. Design engineers generate DXF model of proposed structures types. Models are rendered in SketchUp and Photoshop software to match the viewing angle, material, and shadow of the proposed structure. The model on the left is an original view in SketchUp. The model on the right is rendered to appear as galvanized steel.



STEP 6: Final Photoshop Rendering. Photoshop is used to generate an accurate representation of the proposed corridor in the landscape. This includes removing vegetation in the corridor clearing, altering shadows, reflections on the water, and adjusting the transmission line structures and conductors to reflect accurate lighting conditions. See final photosimulation in VIA.

8. VISUAL IMPACT ASSESSMENT

The final step in the evaluation, the visual impact assessment (VIA), was performed for all scenic resources that achieved a scenic significance rating of medium or higher. The assessment is based upon field observations of the scenic resources; design plans for the NPT project provided by B&M; viewshed mapping; computer modeling, photosimulations, and cross-sectional evaluations; information regarding the extent, nature, and duration of public uses of the scenic resources; review of local, regional, and state-wide planning documents; and mitigation measures that have been incorporated into the planning and design of the project.

The visual assessment for each scenic resource is comprised of graphic and narrative components. The graphic component consists of:

- Location map showing where the scenic resource is located in relation to the NPT transmission line, transition station, converter terminal, and substations.
- Photographs of the scenic resource and the surrounding landscape.
- Photographs of existing transmission lines and other forms of development that are visible from the selected viewpoint.
- Photosimulation(s) of the view from/of the scenic resource that illustrate the effect of the NPT project.
- Other illustrations (e.g., cross sections, interpretive maps) as necessary to illustrate the findings in the VIA.

The narrative consists of the following components:

8.1 Overview

- **Introduction:** Description of the resource and its level of significance.
- **Existing Transmission Corridor** (where present): Description of corridor width, existing structures (number, materials, voltage, type); adjacent topography and vegetation; adjacent land use patterns.
- **Proposed Transmission Corridor:** Description of the visible components of the proposed transmission corridor: adjustments proposed for existing 115-kV transmission line(s) and local distribution lines(s) (where applicable); structures (height ranges, types, materials); conductors; and additional corridor clearing required. For new corridors, this section describes the required clearing and the proposed structures (types, height ranges, and materials) and conductors. For transition stations, the converter terminal, and substations this section describes the physical components, fencing, and clearing requirements.
- **Significance of Scenic Resource:** Description and rating of Cultural Value and Visual Quality and the resulting rating of Scenic Significance, following the methodology outlined in Section 5.2.

8.2 Visual Impact Assessment

- **Visual Effect:** Description and rating of the potential effects that the NPT project will have on the scenic resource, based on an evaluation of photosimulations, computer models, cross-sections, and other graphics.
- **Mitigation:** Overview of planning and design measures that have been taken and/or are being proposed to avoid, minimize, or mitigate potential adverse visual effects. See Section 9 for a description of NPT mitigations measures.
- **User Groups**: Description of the various categories of users who currently visit the scenic resource.
- **User Expectations:** Description and rating of people's expectation for visual quality when visiting the scenic resource.
- **Extent, Nature, and Duration of Public Use:** Description and rating of the type of public use(s) that occur at the scenic resource.
- **Overall Visual Impact:** Rating based on visual effect and analysis of extent, nature, and duration of public use; conclusion regarding the overall visual impact on the scenic resource and potential effect on future use and enjoyment.

8.3 Determination of Visual Effect

The determination of potential visual effects from the NPT project is derived from an evaluation of its landscape compatibility, scale contrast, and spatial dominance, when compared to the landscape associated with the scenic resource.

This aspect of the assessment was performed by a panel of three TJD&A professionals (acting independently of each other) who evaluated existing conditions, photo-simulations, computer models, cross sections, and other graphic components. A series of evaluations (listed below) were used to arrive at a consistent analysis of each resource and form the basis for the narrative description of the visual effect presented in the VIA. The results of the assessment are summarized in a Visual Effect Rating Form completed by each reviewer to arrive at a rating of none, low, medium, or high for each scenic resource.[12]

8.3.1 Landscape Compatibility

The analysis of landscape compatibility evaluates the project components (transmission structures, conductors, corridors, transition stations, converter terminal, substations) to determine how they will relate to their surroundings, including consideration of contrasts in color, form, line, and texture. The evaluation is based upon the anticipated appearance within 2-5 years of construction.[13]

Transmission Structures

Color

- The potential for color contrast when seen against a wooded backdrop or the sky
- The affect of distance and atmospheric perspective on color contrast
- The affect of aging on color contrast
- The affect of lighting and weather conditions on visibility and color contrast

Form

- The similarity in form to a) other structures within the corridor b) other visible transmission or distribution lines, or c) other man-made structures within view
- The likelihood of seeing this type of structures in the study area or surrounding communities
- The possible contrast in form that may be created with existing transmission structures within the corridor

Line

- The potential for contrast in line if the conductors and shield wires are seen against a wooded backdrop or the sky
- The affect of distance on conductor and shield wire visibility
- The increase in number of visible conductors over existing conditions
- The affect of sunlight and weather conditions on conductor visibility and appearance

Texture / Pattern

- The potential for texture contrast between the structures and other objects in the landscape
- The repetition of spacing between proposed and existing structures

Transmission Corridor

- The visibility of the proposed/expanded corridor clearing and its possible contrast in color, line, and texture
- Possible contrast in color and texture between the ground surface and the the surrounding landscape
- Similarities/differences between the lines created by the corridor to the width, direction, and character of other visible lines (natural or man-made)
- Changes in corridor alignment that may be visible from scenic resources

8.3.2 Scale Contrast

Scale Contrast evaluates the size and scope of the project elements relative to the scenic resource to determine if there will be a contrast in scale with the surrounding landscape.

Transmission Structures

- The height of the proposed structures relative to surrounding trees, existing transmission structures, nearby buildings, and other visible structures
- The relative height of structures in the foreground and immediate foreground, relative to their immediate surroundings

Transmission Corridor

- The presence of similar linear openings visible in the landscape
- The likelihood that the change in corridor width (for existing corridors) will be noticeable from the scenic resource

8.3.3 Spatial Dominance

Spatial dominance considers the position of project elements in the landscape and determines their degree of visibility relative to the surrounding landscape (landforms, nearby water bodies, or the sky).

Transmission Structures

- The extent to which structures may become dominant features in the landscape
- The effect of vegetation and topography to partially or fully screen the structures
- The proportion of the structures that may be visible
- The location and number of project elements in the foreground, midground, and background
- The extent of the horizontal field of view (HFOV) that may be occupied by transmission structures
- The number, distance from the viewpoint, and HFOV of structures that may be silhouetted against the sky
- The continuity of a line of structures v. lines of structures that are interrupted by trees, buildings, or topography
- The appearance of structures in the same field of view as existing focal points in the landscape (e.g., distinctive mountains, historic structures, islands)?
- The possibility to block or interfere with views of focal points or other significant landscape features
- Changes in structure visibility and visual effect from different viewpoints (in linear features and scenic areas)
- Length of viewing time and its influence on visual effect

Transmission corridor

- The potential for notches or box-cut clearings If the transmission corridor is seen on a ridgeline
- Similar cutting patterns visible in the landscape
- The proportion of the corridor in the foreground, midground, or background
- Competition for viewer attention when compared with existing features in the landscape
- Length of viewing time and its influence on visual effect

METHODOLOGY

VISUAL EFFECT RATING FORM

LANDSCAPE COMPATIBILITY		
Landscape Compatibility evaluates project elements (i.e., transmission structures, conductors, corridors, transition stations, converter terminal, substations) for potential contrasts in color, form, line, and texture when seen from a scenic resource.		
COLOR		
Color of project elements will highly contrast with colors of surrounding landscape.	HIGH	3
Color of project elements will contrast with colors of surrounding landscape.	MEDIUM	2
Color of project elements will have low contrast with colors of surrounding landscape.	LOW	1
Perceived color of project elements closely matches colors of surrounding landscape.	NONE	0
FORM		
Forms of project elements are highly dissimilar to natural or man-made features in the corridor or surrounding landscape.	HIGH	3
Forms of project elements are dissimilar to natural or man-made features in the corridor or surrounding landscape.	MEDIUM	2
Forms of project elements are somewhat similar to natural or man-made features in the corridor or surrounding landscape.	LOW	1
Form of project elements repeat forms found in the corridor, or ar e common in surrounding landscape, or structures not visible.	NONE	0
LINE		
Lines of project elements (structures, conductors, corridors) will be distinct, highly visible, and contrast highly with surrounding landscape; lines may be seen against the sky w/I 1 mile	HIGH	3
Lines of project elements (structures, conductors, corridors) will be visible and contrast with surrounding landscape; lines may be seen against the sky > 1 mile	MEDIUM	2
Project elements (structures, conductors, corridors) will be visible, but will follow or match existing lines in the landscape; lines will be seen against sky >3 mi	LOW	1
Project elements (structures, conductors, corridors) are not visible as distinct lines.	NONE	0
TEXTURE		
Textures of project elements (structures, corridor) will highly contrast with textures of surrounding landscape.	HIGH	3
Textures of project elements (structures, corridor) will contrast with textures of surrounding landscape.	MEDIUM	2
Textures of project elements (structures, corridor) will have low contrast with textures of surrounding landscape.	LOW	1
Project elements (structures, corridors) are far enough way so texture is not detectable.	NONE	0
TOTAL LANDSCAPE COMPATIBILITY RATING		

SCALE CONTRAST		
Scale Contrast evaluates the relative size and visible extent of project elements (transmission structures, conductors, corridors, transition stations, converter terminal, substations) and how their size will be perceived in the context of the surrounding landscape.		
Project elements will appear as major new objects in the landscape; or at least twice as large/wide as similar existing elements in the landscape.	HIGH	12
Project elements appear as large objects but at the same or slightly larger scale as existing structures and other landscape features.	MEDIUM	8
Project elements are distinct and at the same scale as existing structures and other features.	LOW	4
Project elements, if they are visible, appear as small objects in the surrounding landscape.	NONE	0
TOTAL SCALE CONTRAST RATING		

SPATIAL DOMINANCE		
Spatial Dominance evaluates the position of project elements in the landscape and determines their degree of visibility in the landscape (surrounding landforms, nearby water bodies, or the sky).		
PERCEIVED DOMINANCE		
Project elements are prominent features in the landscape.	HIGH	3
Project elements are conspicuous and co-dominant, relative to other features in the landscape.	MEDIUM	2
Project elements are apparent, but subordinate to other features in the landscape.	LOW	1
Project elements are inconspicuous features in the landscape.	NONE	0
DISTANCE ZONE		
Project elements are primarily in the foreground (within 0.5 miles)	HIGH	3
Project elements are primarily in the near midground (0.5 to 1 mile).	MEDIUM	2
Project elements are primarily in the far midground (1 to 3 miles).	LOW	1
Project elements are primarily in the background (> 3 miles).	NONE	0
HORIZONTAL FIELD OF VIEW (HFOV)		
Project elements appear continuously across the majority of horizontal field of view (HFOV).	HIGH	3
Project elements appear across the majority of HFOV, but are interrupted by topo / trees.	MEDIUM	2
Project elements are discontinuous across 10-45º of HFOV.	LOW	1
Up to 3 structures or <10º of corridor clearing are visible in HFOV	NONE	0
INTERFERENCE WITH EXISTING VIEW		
Project elements will block or interfere with focal points or other significant landscape features.	HIGH	3
Project elements will compete for viewer attention with existing natural or cultural features.	MEDIUM	2
Project elements are visible, but will not compete for viewer attention.	LOW	1
Project elements will not block or interfere with significant landscape features.	NONE	0
TOTAL SPATIAL DOMINANCE RATING		

TOTAL VISUAL EFFECT RATING: LANDSCAPE COMPATIBILITY + SCALE CONTRAST + SPATIAL DOMINANCE		
The project (transmission structures, conductors, and corridors) become a primary feature in the landscape, and may dominate the view due to its visibility, proximity to the viewer, position in the landscape, contrast with the surrounding landscape, duration of view, scale, or a combination of factors. The project will cause a fundamental alteration to the character of the scenic resource.	HIGH	27-36
Project elements will be clearly visible from the scenic resource and may attract attention due to their visibility, proximity to the viewer, spatial dominance, contrast with the surrounding landscape, duration of view, scale, or a combination of factors. The project will cause a moderate alteration to the landscape character, but the change is limited and other features of the landscape remain the primary focus.	MEDIUM	17-26
Project elements may be apparent but will not change the underlying character of the surrounding landscape. The existing cultural and natural landscape features remain dominant.	LOW	1-16

8.4 Determination of Viewer Effect

The second major component in determining overall visual impact is an understanding of the people who use the resource: their expectations in visiting the site, their use patterns, and the effect that the NPT project would have on their future use and enjoyment of the scenic resource.

8.4.1 User Expectation

Viewer expectation is a measure of the quality of the scenery that viewers anticipate encountering at the scenic resource. Viewer expectation can be influenced by a number of environmental and cultural factors: the quality of the landscape being visited, the amount and type of development currently visible, publicity about the site, prior experiences, and viewer motivation. Ratings are based upon our observations of the resource and experience with similar VIAs in the Northeast.

8.4.2 Extent, Nature, and Duration of Public Use

This part of the evaluation looks at current use patterns associated with the Scenic Resources and assigns a rating of high, medium, or low based on the responses to the Extent, Nature, and Duration of Public Use Form.

- **Extent** is an indication of the relative level of public use. High use areas are typically more visually sensitive than areas that receive little use. Accurate use levels are typically not available for public recreation areas, so a qualitative approach is used, based on accessibility, types of facilities, observations during field visits, and information in publications.
- **Nature** of use is an indication of what draws people to the resource, the type of activities users participate in while at the site, and the role that visual quality plays in their decision to use the facilities.
- **Duration** is a description of the relative length of time that the public spends at or on the resource, engaged in scenic or recreational activities. It is assumed that the longer a person spends at a resource the greater their sensitivity to the quality of the surrounding landscape.

8.4.3 Effect on Continued Use and Enjoyment

The intent of the evaluation of continued use and enjoyment is to determine a) whether the NPT project will affect the way the scenic resource is currently being used (i.e., number of users, types of uses, season of use, intensity of use, etc.), and b) whether the NPT project will have an effect on the public's enjoyment of the resource (i.e., will the public still derive aesthetic enjoyment and still enjoy visiting the resource for their traditional recreational and scenic pursuits)?

The evaluation considers the visual effect of the NPT project on the resource and our understanding of user expectations and the extent, nature, and duration of public use. A rating of high, medium, or low effect on continuous use and enjoyment is based on our experience with energy projects in New England, and the limited research on the effects of certain types of energy facilities and other changes to the visual landscape on the use and enjoyment of scenic resources.

8.5 Overall Visual Impact

The Visual Effect Rating is combined with the Viewer Effect Ratings (Extent, Nature, and Duration of Public Use and Effect on Continued Use and Enjoyment) to arrive at a determination of the Overall Visual Impact (see Overall Visual Impact Rating Form). For those resources that receive a 'Medium-High' or 'High' Overall Visual Impact rating after evaluation of the visual change that may result from the NPT project, additional narrative evaluation is provided.

EXTENT, NATURE, AND DURATION OF PUBLIC USE FORM

EXTENT OF USE		
An indication of the relative level of public use that the scenic resource and its facilities and activities receive, and the relative duration of use.		
Highly popular with a diverse recreating public. Access is well marked and easy. Facilities are generally large and well maintained, as indicated by numbers of campsites, parking spaces, hiking trails, and other visitor use areas. Site is well publicized.	HIGH	3
Average number of visitors. Public access to the site may be circuitous. Facilities are adequate for moderate numbers of visitors. Site is not extensively promoted with brochures or on the internet.	MEDIUM	2
Relatively small number of recreational visitors. Access can be difficult and not obvious; facilities are limited and not well maintained; site may be primarily used by local population who know of its existence.	LOW	1
Occasional or virtually no recreational users. Access can be difficult and not obvious; facilities are limited and not well maintained; site may be primarily used by local population who know of its existence.	NONE	0
NATURE OF ACTIVITY		
An indication of what draws people to the resource and the role that visual quality plays in their decision to use the facilities or participate in activities.		
Activities in which visual quality is an intrinsic part of and may significantly affect the experience, e.g., kayaking, photography, driving scenic byways, viewing scenery, and hiking.	HIGH	3
Activities in which visual quality is important but may secondary to the primary experience; e.g., fishing, swimming, boating, camping.	MEDIUM	2
Activities in which visual quality is much less important than the primary experience; e.g., ATV-riding, hunting.	LOW	1
Activities in which visual quality is not specifically intrinsic to the experience, e.g., visiting museums, indoor recreation.	NONE	0
DURATION OF VIEW		
A description of the relative length of time that the general public spends at or on the resource where there will be a view of the NPT project, engaged in scenic or recreational activities.		
Activities where the general public may be expected to spend the equivalent of at least a morning or afternoon (>4 hours) pursuing an outdoor activity: e.g., fishing, camping, hiking, nature study.	HIGH	3
Activities where the general public may be expected to spend less than a morning or afternoon (30 minutes to 4 hours) pursuing an outdoor activity: e.g., picnicking, short hikes	MEDIUM	2
Activities where the public may stop briefly for an activity (<30 minutes, e.g., at a scenic overlook)	LOW	1
Activities where views of the NPT project are fleeting and discontinuous (e.g., scenic byways, or periodic glimpses along a hiking trail).	NONE	0
TOTAL EXTENT, NATURE, AND DURATION OF PUBLIC USE RATING		

TOTAL EXTENT, NATURE, AND DURATION RATING		
	HIGH	7-9
	MEDIUM	4-6
	LOW	7-9

OVERALL VISUAL IMPACT RATING FORM

VISUAL EFFECT	VIEWER EFFECT		OVERALL VISUAL IMPACT
	Extent, Nature, Duration of Use	Continued Use & Enjoyment	
LOW	LOW	LOW	LOW
LOW	LOW	MEDIUM	LOW
LOW	LOW	HIGH	LOW-MEDIUM
MEDIUM	LOW	LOW	LOW-MEDIUM
MEDIUM	LOW	MEDIUM	MEDIUM
MEDIUM	LOW	HIGH	MEDIUM
HIGH	LOW	LOW	MEDIUM
HIGH	LOW	MEDIUM	MEDIUM-HIGH
HIGH	LOW	HIGH	MEDIUM-HIGH
LOW	MEDIUM	LOW	LOW
LOW	MEDIUM	MEDIUM	LOW-MEDIUM
LOW	MEDIUM	HIGH	LOW-MEDIUM
MEDIUM	MEDIUM	LOW	MEDIUM
MEDIUM	MEDIUM	MEDIUM	MEDIUM
MEDIUM	MEDIUM	HIGH	MEDIUM-HIGH
HIGH	MEDIUM	LOW	MEDIUM
HIGH	MEDIUM	MEDIUM	MEDIUM-HIGH
HIGH	MEDIUM	HIGH	HIGH
LOW	HIGH	LOW	LOW-MEDIUM
LOW	HIGH	MEDIUM	LOW-MEDIUM
LOW	HIGH	HIGH	MEDIUM
MEDIUM	HIGH	LOW	MEDIUM
MEDIUM	HIGH	MEDIUM	MEDIUM
MEDIUM	HIGH	HIGH	MEDIUM-HIGH
HIGH	HIGH	LOW	MEDIUM-HIGH
HIGH	HIGH	MEDIUM	HIGH
HIGH	HIGH	HIGH	HIGH

9. MITIGATION

Mitigation is defined as any action taken or not taken to avoid, minimize, rectify, reduce, eliminate, or compensate for actual or potential adverse environmental impact. Many mitigation measures have been incorporated into the planning and design of the NPT project in order to avoid, minimize, rectify, reduce or eliminate potentially adverse visual impacts. These include:

- Locating portions of the project underground to avoid visual resources such as the White Mountain National Forest.
- Co-locating the majority of the transmission line in existing transmission corridors to minimize the amount of new corridors that would be required for the NPT project.
- Locating new transmission structures in proximity to existing structures to maintain the same spacing and avoid irregular linear patterns that can be caused by adjacent conductors being out of synch with each other.
- Matching materials for relocated 115-kV structures and proposed transmission structures to minimize contrasts in color and texture and contribute to a sense of visual continuity within the corridor.
- Designing transmission structures with a relatively narrow profile that minimize the amount of clearing required within the existing corridor.
- Relocating existing transmission and distribution lines within the existing corridors to provide adequate clearance for the proposed NPT structures and minimize the amount of clearing necessary for their installation.
- Using weathering steel monopole transmission structures in certain locations. This type of structure has a dark brown color that is commonly found in the NH landscape, which minimizes color contrasts. Monopole structures also have a thinner profile and a simpler appearance than lattice structures.
- Maintaining and/or restoring vegetation at road crossings, subject to underlying landowner permission, to minimize or screen the view down transmission corridors and concentrate viewer attention in the immediate foreground. Vegetation specified in the vicinity of the transmission line must be non-capable, i.e., it cannot be capable of achieving a height tall enough to interfere with the electrical conductors.
- Maintaining and/or restoring riparian vegetation at river and stream crossings, subject to underlying landowner permission, to minimize boaters' views down transmission corridors and to restore cleared areas with naturalistic landscaping. Riparian vegetation likewise has to be non-capable, i.e., it cannot be capable of achieving a height tall enough to interfere with the electrical conductors.
- Planting native tree and shrub species to restore landscape disturbed by underground cable installation, subject to underlying landowner permission. Where the landscape adjacent to public roads is disturbed as part of the installation of underground conductors it will be restored with native trees and shrubs, while maintaining a clear path needed for inspection and maintenance.

1.9 CONCLUSION: EFFECTS ON AESTHETICS

The determination of whether the site and facility may have an unreasonable adverse effect on aesthetics is evaluated for each subarea and the project as a whole.

10.1 Subarea Level

The results of the assessment of each scenic resource are presented at the beginning of each subarea chapter. A matrix summarizes the scenic significance and overall visual impact for each resource that is included in the VIA. The conclusions regarding possible adverse effect on the aesthetics of the subarea are based upon summaries of:

1. The significance of the scenic resources within the subarea and their distance from the NPT project.

2. The extent, nature, and duration of public uses of the scenic resources within the subarea.

3. The anticipated scope and scale of change in the landscape that is viewed from scenic resources.

4. The overall visual impacts of the NPT project on the scenic resources within the subarea. This section also includes a summary of cumulative visual impacts to linear resources (e.g., scenic byways, trails, and rivers).

5. An evaluation of whether the visibility of NPT project elements within the subarea would offend the sensibilities of a reasonable person.

6. An evaluation of the effectiveness of the mitigation measure being proposed by NPT to avoid, minimize, or mitigate adverse effects on the aesthetics of the subarea.

10.2 Project Level

The conclusion regarding whether the site and facility may have an unreasonable adverse effect on aesthetics is based upon a) the results of each subarea analyses and b) an evaluation of the project as a whole. A table is provided that presents the key facts about the project, listed by subarea:

- number of scenic resources identified throughout the project area
- number with potential project visibility
- number with at least a medium level of scenic significance
- number with an overall visual impact of medium-high or high.

The summaries for each subarea (described above) provide a description of: the existing visual character of the communities within the study area; the significance of scenic resources that may be affected by the NPT project; the extent, nature, and duration of public uses of the scenic resources that may be affected; and the anticipated changes to the landscape.

The final conclusion for the project as a whole considers: whether any part of the NPT project would be a dominant feature in landscapes where existing human development is not already a prominent feature, as viewed from affected scenic resources; the effectiveness of the best practical measures planned by NPT to avoid, minimize, or mitigate adverse effects on aesthetics; and whether the NPT project as a whole would offend the sensibilities of a reasonable person.

METHODOLOGY

ENDNOTES

1 The methodology draws upon systems that have been developed by and are widely used by federal and state agencies, i.e., the Bureau of Land Management's (BLM) Visual Resource Management System, the United States Forest Service's (USFS) Landscape Aesthetics Handbook, the Federal Highway Administration's (FHWA) Visual Impact Assessment for Highway Projects, and the State of Maine's Chapter 315: Assessing and Mitigating Impacts to Existing Scenic and Aesthetic Uses.

2 This area starts at the Canadian/NH border and extends south to the point where the line joins and existing transmission corridor in Dummer.

3 The ¼ mile study area is only where the transmission line will be underground. The underground sections in Subarea 1 (Pittsburg/Clarksville and Clarksville-Stewartstown) fall within the 3-mile study area of above ground structures. The underground section in Subarea 3 (Bethlehem to Bridgewater) is defined by the ¼ study area.

4 A more detailed description of the process used to create the viewshed maps is included in Appendix. A

5 The viewshed mapping for NPT did not include an analysis of bare ground conditions, i.e., using topographic data only with no trees present. Topography-only analysis greatly overestimates possible project visibility, since trees play a significant role in screening transmission structures.

6 Another way of looking at viewshed maps is to envision a light on the very top of a transmission structure. The viewshed map indicates where the light would hit the ground (within five miles) and not be blocked by topography, vegetation, or buildings.

7 Forty feet is a conservative estimate of the height of forest vegetation that is typically used in VIAs in the eastern United States.

8 For example, these could include Master Plans prepared by local communities; corridor management plans for scenic byways prepared by regional planning agencies; river segments with aesthetic values identified by the NH Rivers Management Protection Program; National Scenic Byways designated by the Federal Highway Administration.

9 While the NH Rivers Management Protection Program was established to protect water quality, a river's scenic or recreational resources may be considered as part of the designation process.

10 A panel of three TJD&A professionals (acting independently of each other) evaluated each scenic resource using the Visual Quality Evaluation Chart, based upon personal knowledge of existing condition or site photographs. The results of each assessment are averaged to arrive at a visual quality rating of low, medium, or high.

11 Seasonal variations may affect visual quality as well as visibility. These types of variables are considered in the evaluation process and noted in the site descriptions.

12 The Visual Effect Rating Form is derived from Appendix B. Basic Visual Impact Assessment Form, Guidance for Assessing Impacts to Existing Scenic and Aesthetic Uses under the Natural Resources Protection Act, Maine Department of Environmental Protection. July 2003.

13 Within this time frame the effects of construction will have dissipated and the project will begin to achieve its permanent appearance; i.e., temporary construction roads will have reverted to grass; transmission structures will start to show their patina; conductors will begin to weather and lose their reflectivity; shrub plantings installed at road crossings will start to achieve their full size.

GLOSSARY OF TERMS

ADVERSE VISUAL IMPACT: The negative effect of a regulated activity on the visual quality of a landscape.

AESTHETICS: The science or philosophy concerned with the quality of sensory experience; the use here is limited to visual experience.

ATMOSPHERIC PERSPECTIVE: The effect of distance from the viewer on the color and distinctness of objects. Typically, as distance increases, objects become bluer, grayer, lighter, less contrasting and less distinct.

CHARACTER TYPE: A relatively large area of land that has common distinguishing visual characteristics of landform, rock formations, water forms, and vegetative patterns.

CHARACTERISTIC LANDSCAPE: The naturally and culturally established landscape in a region. It is described visually by the basic vegetative patterns, landforms, rock formations, water forms, and structures that are repeated throughout the area.

COLOR: The portion of the electromagnetic spectrum visible to the human eye that causes activity in the retina of the eye and its associated nerve systems, enabling one to distinguish between identical objects. Color consists of the three components of saturation, hue and brightness.

CONE OF VISION: The horizontal and vertical angle of the landscape that is visible from a viewpoint. Constrictions to the viewer's eye may include buildings, street trees, forest edges, or foreground landforms. Travel speed and the design of the automobile are additional constrictions to the viewer's eye.

CONFIGURATION: The amount of irregularity and/or enclosure in the shoreline. Shorelines with coves, points, bays, islands, and other features are considered highly configured, and are usually thought to be highly scenic.

CONTRAST: The way in which an introduced element may be compared to determine differences. Contrast is measured in terms of form, line, color, texture, dominance, or scale.

DISTANCE ZONES: Horizontal divisions of the landscape being viewed.

- **Foreground**: The visible landscape within one-quarter mile from the observer.
- **Midground**: Extends from the edge of the foreground to 3-5 miles from the observer.
- **Background**: Extends from the midground to infinity.

DOMINANCE: The extent to which an object is noticeable when compared to the surrounding context. An object(s) may be:

- **Dominant**: The element is visually prominent and occupies a visually sensitive position within a landscape, often at an upper elevation.
- **Co-Dominant**: Two or more elements have relatively equal visual importance in the landscape.
- **Subordinate**: The object is visually inferior to the rest of the landscape as a result of its relative size, brightness, distance, color, or mass.

DURATION: Relative measure of the time available to experience a view. The actual elapsed time will be a function of many factors: mode of transportation, speed of movement, obstacles in the foreground, intention of the viewer, amount of clearing between viewer and view, and opportunities for pull-offs along a road.

- **Short Views**: Fleeting glimpses of relatively short duration, from 1 to 3 seconds.
- **Medium Views**: Visible for a moderate amount of time, from 3 to 10 seconds.
- **Long Views**: Visible for extended periods of time, greater than 10 seconds.

FORM: The mass or shape of an object or combination of objects that appear unified: the physical structure of an object(s).

LANDFORM: The dominant topographic features of the landscape, described in terms of slope and repetitive natural forms.

LANDSCAPE: The surface features of an area including landform, water, vegetation, cultural features and all other objects and aspects of natural and human origin.

LANDSCAPE QUALITY: Relative level of visual diversity or landscape character. Features such as Landform, Vegetation, Water, and Cultural Features are compared singularly or in combination with those commonly found in the study area. Landscapes can be classified into variety classes to indicate the degree of variety present:

- **HIGH: Distinctive**. Areas where vegetation patterns, landforms, water bodies, rock formations, cultural patterns, or combinations of these elements are of unusual or outstanding visual quality, and are generally considered to be of state-wide or national significance.
- **MEDIUM: Noteworthy**. A combination of landscape elements that is above the average for the characteristic landscape, but not outstanding relative to national or state-wide measures.
- **LOW: Common**. The characteristic landscape of an area.

LINE: Anything that is arranged in a row or sequence. The path, real or imagined, that the eye follows when perceiving abrupt differences in form, color, or texture, or when objects are aligned in a one-dimensional sequence. Line is usually evident as the edge of shapes or masses in the landscape.

MITIGATION: Any action taken or not taken to avoid, minimize, rectify, reduce, or eliminate actual or potential adverse environmental impact, including adverse visual impact. Actions may include:

- **Avoidance**. Not taking a certain action
- **Design**. Measures taken during the siting or design of a facility to minimize contrasts in form, line, color, texture, or scale with the surrounding landscape.
- **Screening**. Installation or preservation of physical visual barriers to minimize views of a proposed activity.
- **Minimization**. Limiting the magnitude, duration, or time of an activity.
- **Rectification**. Restoration, repair, or rehabilitation of an affected environment.
- **Management**. Reducing or eliminating an impact through preservation and maintenance operations during the life of a project.
- **Compensation**. Replacement of affected resources or provision of substitutes.

SCALE: The proportional size relationship between an introduced object(s) relative to the surrounding landscape.

SCENERY: The general appearance of a place; the features seen in the landscape.

SCENIC AREA: An area that exhibits a high degree of variety, harmony, and contrast among the basic visual elements, resulting in a place with greater than normal visual quality.

GLOSSARY OF TERMS

SCENIC BYWAY (NATIONAL): The National Scenic Byways Program was created by Congress in 1991 as part of the Intermodal Surface Transportation Efficiency Act (ISTEA). This legislation authorized Federal Highway Administration funding for federal and state-designated scenic byways.

SCENIC BYWAY (STATE): The New Hampshire Scenic and Cultural Byways Program was established under RSA 238:19 "to provide the opportunity for residents and visitors to travel a system of byways which feature the scenic and cultural qualities of the state within the existing highway system, promote retention of rural and urban scenic byways, support the cultural, recreational and historic attributes along these byways, and expose the unique elements of the state's beauty, culture and history." The NH Department of Transportation (NHDOT) administers the state's program with the assistance of an advisory body called the Scenic and Cultural Byways Council.

SCENIC RESOURCE: Public natural resources or public lands visited by the general public, in part for the use, observation, enjoyment, and appreciation of natural or cultural visual qualities.

SIGHTLINE: The unobstructed line of sight between an observer and an object.

TEXTURE: The aggregation of small forms or color mixtures into a continuous surface pattern, resulting in a surface's mottling, graininess, or smoothness. These smaller parts do not appear as discrete objects in the landscape.

VALUE: The sensation that one color appears to be lighter or darker than another. Value is one element in determining the relative contrast or congruity between landscape elements.

VIEW: That portion of the landscape that is seen from a particular vantage point.

VIEWER ELEVATION: The position of the viewer relative to the scene being viewed.

- **Viewer Inferior**: Viewer is below that portion of a scene with the greatest visual interest.
- **Viewer Normal**: Viewer looks straight ahead to see the majority of the view; the most common relationship between viewer and scenery.
- **Viewer Superior**: Viewer is elevated above the scene observed, usually looking down to the rear portions of the foreground. This position tends to increase the importance of landscape elements observed because of the viewer's usual tendency to look slightly downward and more of the view is obstacle-free.

VIEWER EXPECTATION: An estimate of people's concern for visual quality in the environment.

VIEWERS: People who see the landscape at present, or who are likely to see a project in the future.

VIEWPOINT: The actual point from which a viewer sees the landscape or a proposed alteration.

VIEWSHED: All the surface areas visible from a particular viewpoint or a proposed activity; also, the surface area(s) within which a critical object or viewpoint is seen. The viewshed may include the total visible activity area from a single observer position or the total visible activity area from multiple observers' positions.

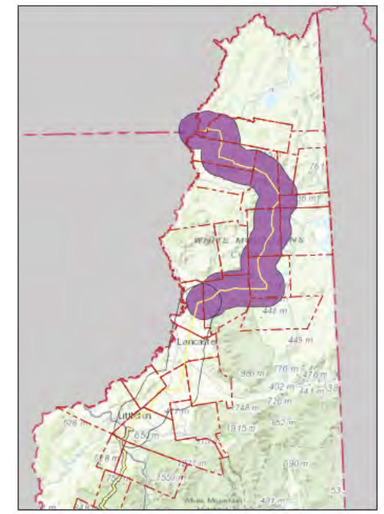
VISUAL CHARACTER: The overall impression of a landscape created by the order of the patterns composing it: the visual elements of these patterns are the form, line, color, and texture of the landscape's components. Their interrelationships can be described in terms of dominance, scale, diversity, and continuity.

VISUAL IMPACT: The degree of scenic quality change that results from a land use activity. Negative visual impacts affect environmental quality, either by limiting visual access to scenic resources or by disrupting the harmony, diversity or character of natural landscape elements.

VISUAL QUALITY. The essential attributes of the landscape that when viewed elicit overall benefits to individuals and, therefore, to society in general. The quality of the resource and the significance of the resource are usually, but not always, correlated.

VISUAL RESOURCES: The features that make up the visible landscape.

SUBAREA 1



Pittsburg
Clarksville
Stewartstown
Dixville
Millsfield
Dummer
Stark

SUBAREA 1 DESCRIPTION

CORRIDOR LENGTH: 51.5 miles

LOCATION: New Hampshire / Canadian national border to the Stark / Northumberland town border.

HOST COMMUNITIES
- Pittsburg
- Clarksville
- Stewartstown
- Dixville
- Millsfield
- Dummer
- Stark

ADJACENT COMMUNITIES
- Colebrook
- Dix Grant
- Wentworths Location
- Errol
- Odell
- Stratford
- Milan

Subarea 1 is the study area surrounding the northernmost section of the Northern Pass transmission corridor. The NPT project in Subarea 1 is a 320-kV DC line that starts at the Canadian/US border in Pittsburg, NH and continues 51.5 miles in a southerly direction through Pittsburg, Clarksville, Stewartstown, Dixville, Millsfield, Dummer, and Stark. Seven communities are adjacent to the line (i.e., the 3-mile study area includes portions of these communities, but the transmission line is not located in them): Colebrook, Dix Grant, Wentworths Location, Errol, Odell, Stratford, and Milan.

The majority of the line in Subarea 1 will be constructed in a new 120-foot wide corridor. Two portions of the line will be located underground: a 3,785-foot segment in Pittsburg and Clarksville where it crosses the Connecticut River, and a 7.5 mile segment in Clarksville (1.4 miles) and Stewartstown (6.1 miles). Most of the underground segments will be constructed in municipal and state highway corridors. Once the line reaches Bickford Hill in the southern part of Dummer, it will continue overhead 11.4 miles to the west in an existing transmission corridor in Dummer (2.9 miles) and Stark (8.5 miles).

PHYSICAL CHARACTERISTICS

Landform

Subarea 1 lies within the Quebec/New England Boundary Mountains ecoregion, which is characterized by relatively low, forested mountains and broad river valleys. The highest and steepest mountains are found in Dixville (in privately held forestland north and east of Dixville Notch State Park) and Stark (at the southern end of Nash Stream Forest). The mountains typically range from 2,300 to 3,500 feet in elevation.

Water

Subarea 1 contains numerous streams, rivers, lakes, and ponds that offer a variety of recreational opportunities. Many of the lakes are stocked by NHF&G. The western end of the subarea drains into the Connecticut River, which has its headwaters in the Connecticut Lakes at the north end of the county. The eastern and southern end of the subarea drains into the Androscoggin River. Water resources within the study area include the Connecticut River, Lake Francis, Little and Big Diamond Ponds, Nathan Pond, Millsfield Pond, Bragg Pond, Long Pond, Little and Big Dummer Ponds, Androscoggin River, Upper Ammonoosuc River, and Christine Lake. Most of the lakes and ponds are less than one mile in length and less than 0.3 miles in width, and are often connected by small streams.

Vegetation

Forest cover is primarily northern hardwood with spruce and fir forests on the cooler lowland slopes; at higher elevations (above 2,500 feet) spruce-fir become the dominant species.

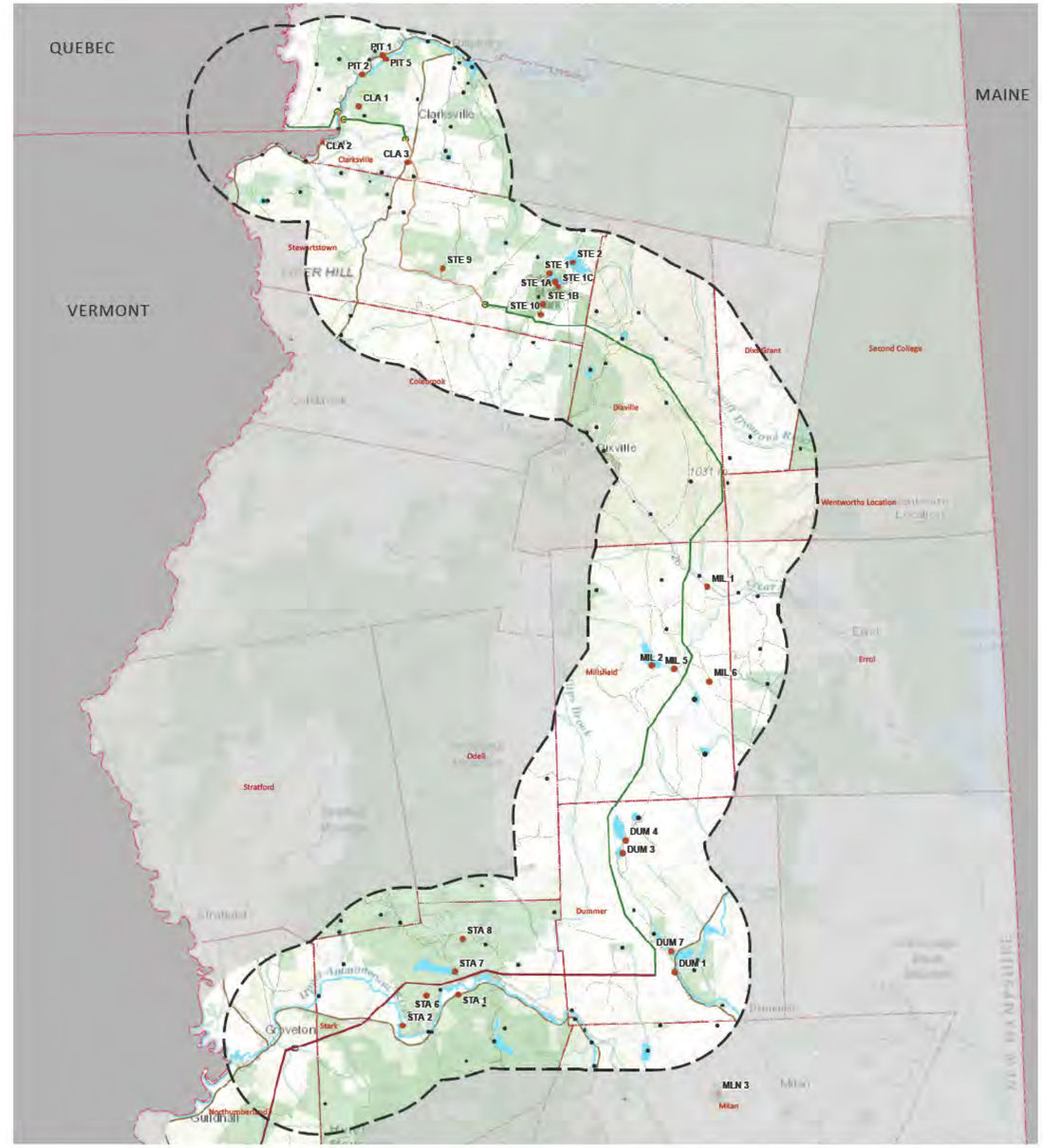
CULTURAL DEVELOPMENT PATTERNS

Subarea 1 is located in Coos County, the least populated and the largest land area of the ten counties in New Hampshire. Coos County is supported by a resource-based economy, dependent upon the forest products industry, recreation, and agriculture. Populations in the seven host communities in Subarea 1 range from 12 in Dixville to 993 in Stewartstown. Development is typically concentrated in small villages located on the main roads and larger rivers. The southern part of the county is served by a network of state highways, many of which follow the river corridors. Several of the roads have been designated as scenic byways: the Connecticut River National Scenic Byway (Route 3); Moose Path Trail Scenic Byway (Routes 3, 26, 145, and 16); Woodland Heritage Trail Scenic Byway (Route 110).

Most of the communities have large tracts of land dedicated for conservation and recreation. These include State Parks (Coleman, Dixville Notch); State Forests (Devils Slide State Forest, Kauffman Forest); Wildlife Management Areas (Paul Bofinger Conservation Area); private conservation lands (The Balsams Resort); Nash Stream Forest (state-owned); White Mountain National Forest; and Town Forests.

RECREATION & TOURISM

Coos County is known as a four-season recreation destination. The area features hundreds of miles of snowmobile and ATV trails; many lakes and rivers that attract canoeists, kayakers, fishermen, birdwatchers, and rafters; large tracts of forestland for hunting, hiking, and camping. One of the largest concentrations of recreation activities is found in the vicinity of the Pontook Reservoir on the Androscoggin River in Dummer, where there are opportunities for boating, rafting, picnicking, fishing, bird watching, and hiking.



EXISTING TRANSMISSION CORRIDOR
PROPOSED TRANSMISSION CORRIDOR
UNDERGROUND TRANSMISS ON CORRIDOR
OTHER TRANSMISSION LINE
SUBSTATION
SCENIC RESOURCE WITH INDIVIDUAL VIA
SCENIC RESOURCE WITHOUT AN INDIVIDUAL VIA
CONSERVATION AREA
WATER RESOURCE
SCENIC BYWAY
TRANSITION STATION

3 MILES

SUBAREA 1 IMPACT SUMMARY

SUMMARY TABLE: SCENIC RESOURCES WITH INDIVIDUAL VISUAL IMPACT ASSESSMENTS

MAP ID	TOWN	SCENIC RESOURCE	SCENIC SIGNIFICANCE	OVERALL VISUAL IMPACT
CLA-1	CLARKSVILLE	Washburn Family Forest	MEDIUM	LOW
CLA-2	CLARKSVILLE	Connecticut River Scenic Byway	MEDIUM-HIGH	MEDIUM
CLA-3	CLARKSVILLE	Moose Path Trail Scenic Byway	MEDIUM	MEDIUM
DUM-1	DUMMER	Moose Path Trail Scenic Byway	MEDIUM-HIGH	MEDIUM
DUM-3	DUMMER	Little Dummer Pond	MEDIUM	LOW-MEDIUM
DUM-4	DUMMER	Big Dummer Pond	MEDIUM	MEDIUM
DUM-7	DUMMER	Pontook Reservoir	MEDIUM-HIGH	MEDIUM
MIL-1	MILLSFIELD	Moose Path Scenic Byway	MEDIUM-HIGH	LOW
MIL-2	MILLSFIELD	Millsfield Pond	MEDIUM	LOW
MIL-5	MILLSFIELD	Bragg Pond	MEDIUM	LOW
MIL-6	MILLSFIELD	Signal Mountain Fire Tower	MEDIUM	LOW-MEDIUM
MLN-3	MILAN	Milan Hill State Park and Fire Tower	HIGH	NONE
PIT-1	PITTSBURG	Connecticut River Scenic Byway	MEDIUM-HIGH	LOW
PIT-2	PITTSBURG	Moose Path Trail Scenic Byway	MEDIUM	LOW
PIT-5	PITTSBURG	Connecticut River	MEDIUM	LOW
STA-1	STARK	Woodland Heritage Trail Scenic Byway	MEDIUM	LOW-MEDIUM
STA-2	STARK	Upper Ammonoosuc River / Northern Forest Canoe Trail	MEDIUM-HIGH	MEDIUM
STA-6	STARK	Kauffmann Forest	LOW-MEDIUM	LOW-MEDIUM
STA-7	STARK	Christine Lake	MEDIUM-HIGH	NONE
STA-8	STARK	Nash Stream Forest	HIGH	LOW
STE-1	STEWARTSTOWN	Coleman State Park	MEDIUM-HIGH	MEDIUM
STE-10	STEWARTSTOWN	Diamond Pond Road	MEDIUM	LOW-MEDIUM
STE-1A	STEWARTSTOWN	Little Diamond Pond	MEDIUM-HIGH	LOW-MEDIUM
STE-1B	STEWARTSTOWN	Visitor Center and Recreation Building	MEDIUM	LOW-MEDIUM
STE-1C	STEWARTSTOWN	Coleman State Park Campground	MEDIUM	LOW-MEDIUM
STE-2	STEWARTSTOWN	Big Diamond Pond	MEDIUM	LOW-MEDIUM
STE-9	STEWARTSTOWN	Cohos Trail	MEDIUM	LOW-MEDIUM

The proposed Northern Pass Transmission project will not have an unreasonable adverse effect on the aesthetics of Subarea 1. This conclusion is based upon the following:

1. Existing Visual Character

The 51.5-mile long Subarea 1 is the northernmost and least populated section of the Northern Pass project. It is also the only subarea where the proposed transmission line will be located in a new corridor, i.e., the 32.1-mile section from the Canadian border to Bickford Hill in Dummer. Two sections of the line in Subarea 1 are located underground, totaling 7.9 miles. The scenic character of Subarea 1 is defined by its low, forested mountains; broad river valleys; an abundance of rivers, streams, lakes, and ponds; and a diversity of small villages that are connected by state roads and rivers.

The description of Subarea 1 and the descriptions of each of the 7 host communities and the 7 communities that are adjacent to the host communities provide an overview of the existing landforms, water bodies, vegetation, and cultural patterns that characterize the subarea and the land adjacent to the proposed corridor.

2. Significance of Scenic Resources and Distance from the NPT Project

A total of 86 scenic resources within the six-mile wide study area were identified within the 14 communities that comprise Subarea 1. Of these, 27 resources with at least medium cultural significance and potential visibility were further evaluated to determine the possible visual effect of the NPT line. This list of resources is presented in the Summary Table.

The horizontal distance to the NPT transmission corridor varies throughout Subarea 1. The Scenic Resources table for each community provides the distance to the corridor, measured at the place where the viewpoint evaluated in the VIA is nearest the corridor.

Several scenic resources of state significance within the 3-mile study area will not have views of the project. These include: Lake Francis in Clarksville; the Pittsburg-Clarksville Covered Bridge; The Balsams Resort and Dixville Notch State Park in Dixville; Paul O. Bofinger Conservation Area in Dummer; Stark Covered Bridge, Devils Slide State Forest, Christine Lake, and South Pond in Stark.

3. Extent, Nature, and Duration of Public Use

There is a wide variety of public uses in Subarea 1, including backcountry hiking, bird watching, fishing, rafting, sightseeing, snowmobiling, ATV riding, ice fishing, and cycling. See the VIA for individual scenic resources for a description of the expected extent, nature, and duration of public use.

4. Scope and Scale of Change in the Landscape

New Transmission Corridor

The 32.1 miles of new transmission corridor at the northern end of Subarea 1 will create a 120-foot wide clearing, primarily in privately owned commercial forestland. The new clearing will be visible from a limited number of public viewpoints, due to the topography, existing roadside vegetation, and limited number of public roads in the area. Places where the corridor will be visible include the west side of Route 145 in Clarksville, the Route 26 crossing in Millsfield, and the west side of Route 16 in Dummer at the causeway over the Pontook Reservoir.

Existing Transmission Corridor

Starting at Bickford Mountain in Dummer, the southern end of the transmission line in Subarea 1 will be located in an existing 11.4-mile corridor that is typically 150 feet in width. The existing corridor typically contains a 115-kV transmission line supported on wooden H-frame structures. In some areas the 115-kV line will be relocated within the corridor to accommodate the 320-kV DC line and will be supported on steel monopole structures. All new structures will be of the same material (either galvanized steel or weathering steel) to maintain continuity in color and texture. In some places additional clearing within the right-of-way will be necessary to conform to current code requirements.

Transmission Structures

The NPT project will introduce new transmission structures to transmit the 320-kV DC electrical power. The most commonly used design will be a galvanized steel lattice structure. In certain locations, the line will be supported by weathering steel monopole structures. The most common 320-kV DC structure height in Subarea 1 will be 75 to 85 feet. Taller structures will be used in specific locations to cross roads, rivers, and other power lines; to account for changes in topography; and to provide the clearances required by the National Electrical Safety Code for electrical transmission lines and gas pipelines (where present within the transmission corridor).

Conductors and Shield Wires

The arms of the structures on the proposed 320-kV DC line support insulator strings and bundled conductors. The relocated 115-kV line will also have arms that support insulator strings and conductors. Both will have thinner overhead shield wires attached to the top of the structures.

Underground Sections

The installation of the line in the two underground sections will have little visual effect on the landscape. The major evidence of the route will be sections of the road that will be removed and restored once the line is installed (where the line is in an existing road right-of-way). Where the line is off the road, the underground transmission corridor will be mowed periodically to prevent the growth of trees over the line. A fenced transition station will be constructed at either end of the underground section. These will be set back

5. Evaluation of Overall Visual Impact

The Summary Table indicates the visual effect and overall visual impact on each of the scenic resources that were evaluated in Subarea 1. The overall visual impact is derived from the assessment of visual effect and the possible effects on user groups, as determined by the VIA. There is a range of possible visual impacts in Subarea 1, for example:

- None (Christine Lake)
- Low (Connecticut River in Pittsburg, Millsfield Pond in Millsfield)
- Low-Medium (Big Diamond Pond in Stewartstown, Little Dummer Pond in Dummer)
- Medium (Route 145 in Clarksville, Little Diamond Pond in Coleman State Park, Pontook Reservoir in Dummer).

None of the overall visual impacts were found to be greater than medium within Subarea 1.

LINEAR RESOURCES

The individual VIAs provide an assessment of points along linear scenic resources where the NPT project may be visible. The following section evaluates the cumulative visual impact on those linear resources in Subarea 1 where the project may be visible from more than one point.

CONNECTICUT RIVER SCENIC BYWAY

The project intersects the Connecticut River Byway at two locations: on Route 3 over the Connecticut River on the Pittsburg/Clarksville town line and on Route 145 in Clarksville. **The overall visual impact on the 500-mile long Byway will be low**. This conclusion is based on the following:

- The transmission line is located underground at both corridor crossings.
- Several transmission structures will be visible at each location; the closest visible structures are more than 1,000 feet from the roadway.
- The cumulative time that structures may be in view is less than a minute (up to 15 seconds at the Pittsburg/Clarksville town line, and 25 seconds in Clarksville). This represents a small fraction of time that motorists will have visual contact with the structures over a typical day's drive.
- Views of the structures are not in the immediate foreground of the view.
- Scenic Byway visitors are not likely to encounter both crossings in the same trip. Both are located on parallel roadways where the byway splits. Motorists headed in a single direction must choose between Route 145 and Route 3.

MOOSE PATH TRAIL SCENIC BYWAY

The NPT project intersects the Moose Path Trail at Route 145 in Clarksville and Route 26 in Millsfield. The project is visible from a third location on Route 16 where it crosses the Pontook Reservoir in Dummer. The overall visual impact on the Moose Path Trail Scenic Byway will be low. This conclusion is based on the following:

- The view of the transmission structures represents a very small percentage of the 98-mile length of the byway. Views of the structures will be seen over approximately 2 miles of the Byway, which is less than 2% of the length of Moose Path Trail.
- There is one aboveground corridor crossing in the entire length of the Byway. This crossing is forested on both sides and only visible from within the corridor right-of-way.

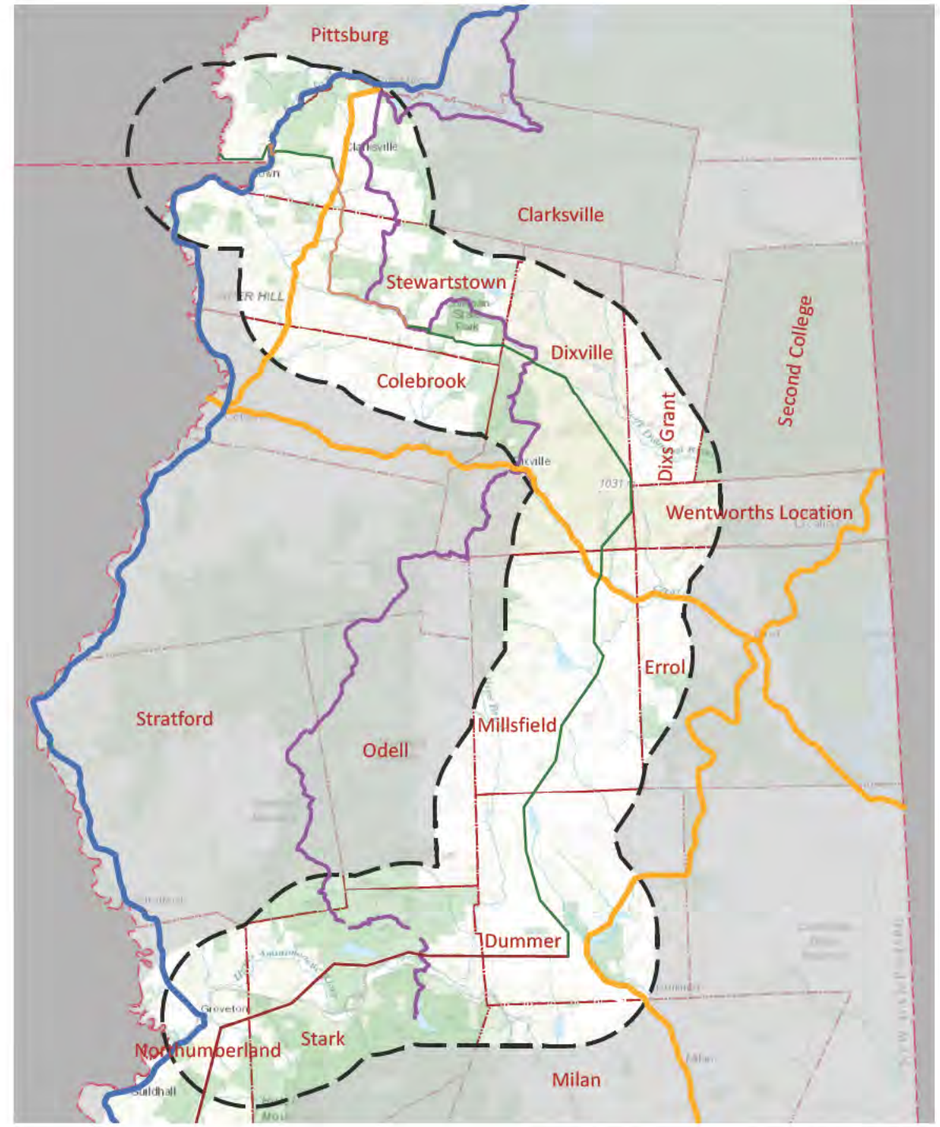
COHOS TRAIL

The Cohos Trail currently intersects the project corridor at 3 aboveground locations (the route is being refined and some on-road sections are being eliminated): at Heath Road (an unpaved rural road) in Stewartstown, at an unnamed woods road south of Nathan Pond in Dixville, and at an existing transmission corridor at the south end of Nash Stream Forest in Stark. The Trail also follows the underground section of the NPT project for 1.75 miles along Bear Rock Road in Stewartstown, starting west of the transition station.

The NPT project will be intermittently visible over two sections of Heath Road in Stewartstown, for a total of 0.4 mile. The project will also be visible in the midground from an alternate on-road route for the Trail that follows Diamond Pond Road south of Coleman State Park (see Diamond Pond Road Photosimulation).

The overall visual impact on the Cohos Trail will be low. This conclusion is based on the following considerations:

- The total length of the trail located within the above-ground project corridor is 415 feet, which is a small fraction of its overall length.
- The visual impact to the trail from the installation of the underground section will be temporary; once the project is in place, there should be little physical evidence of the line visible aboveground.
- There are very limited places on the trail where there will be views of the transmission line.
- Three corridor crossings occur either on rural or woods roads or in forestland, where visibility is limited to foreground viewing distances.
- Cohos Trail users are already exposed to transmission and distribution lines. One of the corridor crossings (in Nash Stream Forest) is in an existing transmission corridor, and sections of the trail follow roadways with parallel distribution lines.



LINEAR RESOURCES

- CONNECTICUT RIVER SCENIC BYWAY
- MOOSE PATH TRAIL SCENIC BYWAY
- COHOS TRAIL

TRANSMISSION LINE

- EXISTING TRANSMISSION CORRIDOR
- PROPOSED TRANSMISSION CORRIDOR
- UNDERGROUND TRANSMISSION CORRIDOR

6. Visibility of the NPT Project Will Not Offend the Sensibilities of a Reasonable Person

While there are places where the NPT project will be visible and may be considered an adverse visual effect, there are no locations in Subarea 1 where the visibility of the NPT will offend the sensibilities of a reasonable person. This conclusion is based upon the following considerations:

- The NPT project will be visible from a very limited number of scenic resources or other public viewpoints.
- There are very few locations where the project will be seen in the foreground (within ¼ mile) of scenic resources.
- There are no scenic resources in Subarea 1 where the project will be a dominant feature in the landscape where existing human development is not already a prominent feature.
- Most of the scenic resources where the transmission line will be visible also have other forms of human development, many of which are prominently visible in the landscape. Examples include views of wind turbines (e.g., Route 145 and Millsfield Pond in Millsfield, Little Dummer Pond in Dummer), transmission lines (Big Dummer Pond in Dummer, North Percy Peak and Victor Head Cliff in Nash Stream Forest, and Route 110 in Stark), State Highways (Route 3, Route 45), local distribution lines (e.g., Pontook Reservoir), hydro generating facilities (Androscoggin River and Pontook Reservoir in Dummer).
- The VIA demonstrates that the NPT project will not have a high overall visual impact on any of the scenic resources within Subarea 1.

7. Effectiveness of Mitigation Measures

The planning and design process for the NPT project incorporates many measures that are designed to avoid, minimize, or mitigate adverse effects on aesthetics:

Approximately 3,700 feet (0.7 mile) of the transmission corridor will be located underground in Pittsburg and Clarksville where the NPT project crosses the Connecticut River and U.S. Route 3 (designated as the Connecticut River Scenic Byway, a National scenic byway).

The transition stations where the line goes underground will be set back from the public road and screened by existing and/or new vegetation.

An additional 7.5 miles of the NPT project will be located underground, starting on the west side of Route 145 (designated as both the Connecticut River Scenic Byway and the New Hampshire Moose Path Scenic Byway).

The project has been redesigned to minimize the clearing required for the installation of the NPT project, in both the existing and the new corridor. The new corridor will be 120 feet wide, which is comparable to the existing transmission corridor currently serving northern New Hampshire.

At the Route 26 crossing in Millsfield the alignment of the corridor includes angle points close to the road, which minimizes the amount of clearing visible to passing motorists. This crossing also occurs at a reverse curve in the highway, which minimizes the time that a motorist will be in the new corridor. The NPT corridor is located in a forested landscape to maintain a buffer between the line and the scenic agricultural land to the southeast of the crossing.

Weathering steel monopole structures – with a slimmer profile and darker color than the typical lattice structures – will be used in certain locations to minimize visual impacts:

- Route 145 Moose Path Scenic Byway / Connecticut River Scenic Byway
- Coleman State Park and Little Diamond Pond
- Cohos Trail (Diamond Pond Road)
- Route 26 Moose Path Scenic Byway
- Pontook Reservoir / Androscoggin River
- Route 16 Moose Path Scenic Byway
- Route 110 Woodland Heritage Scenic Byway
- Nash Stream Forest
- Kauffmann Forest / Percy State Forest

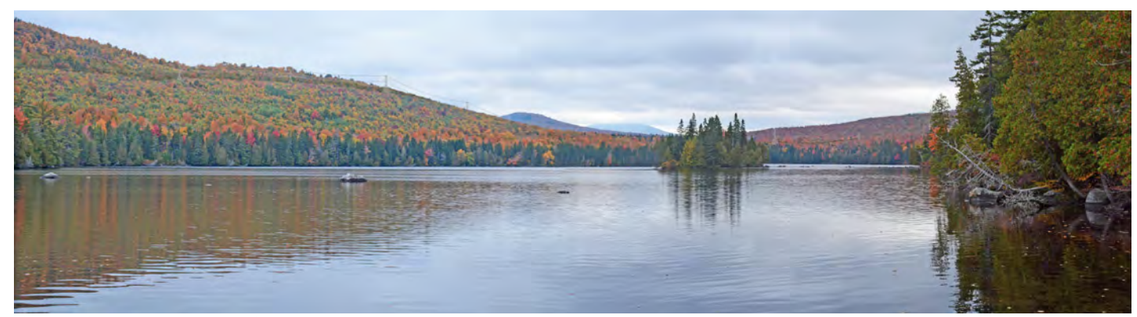
The transmission corridor follows the topography of Subarea 1 and avoids major mountains and prominent hills to minimize its visibility from surrounding viewpoints. In most situations the line is located on side slopes and/or at the base of mountains where transmission structures will be seen against a wooded backdrop and will not appear to break the horizon. One exception noted in the VIA is where the line crosses Sugar Hill in Stewartstown, south of Coleman State Park. In this situation the transmission line consists of weathering steel monopole structures to minimize their profile when seen from points within the park.

The southern end of the line (south of Dummer) follows an existing 115-kV transmission line, which is the typical condition for the remainder of the NPT project. The use of the existing corridor eliminates the need for a new corridor for the majority of the line and avoids the visual effect that a new line would have on the surrounding landscape.

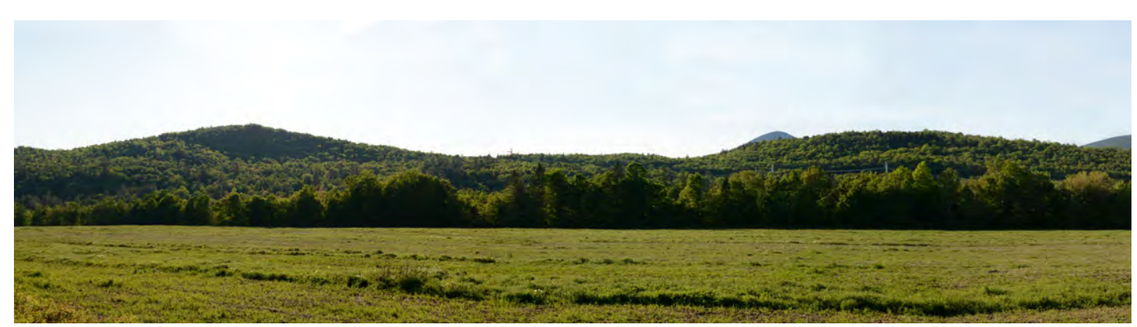
See individual scenic areas for a complete description of the mitigation measures employed in the planning and design process for Subarea 1.

Photosimulation: Route 145 in Clarksville

Photosimulation: Little Diamond Pond, Coleman State Park, Stewartstown



Photosimulation: Big Dummer Pond, Dummer



Photosimulation: Route 110, Stark

PITTSBURG DESCRIPTION

Land Area: 281.3 square miles (NHES)

Inland Water Area: 9.0 square miles (NHES)

Population: 848 residents (NHES)

Population Density: 3 persons per square mile (NHES)

Town Location: Pittsburg is located in Coos County; it is positioned north of Clarksville, Atkinson, and Gilmanton Academy Grant in New Hampshire; east of Canaan, Vermont; west of Maine, and south of the Province of Quebec, Canada.

Study Area: The study area is located in the southwest corner of town. The transmission line is located approximately 700 feet from the southern town boundary. The Study Area covers 3.18% of the total land area (5,927 acres).

Physical Characteristics

Pittsburg shares an international border with Canada to the west and north. The western edge of Pittsburg is defined by Halls Stream, being the "northwestern most headwaters of the Connecticut River," and borders the states of Maine (to the east) and Vermont (to the southwest). Directly to the south is Clarksville. The highest point in Pittsburg is the summit of Stub Hill, at 3,627 feet above sea level, and the general town topography is hilly. Lake Francis as well as both the First and Second Connecticut Lakes are located in Pittsburg (pittsburg-nh.com).

Demographics

The population of Pittsburg increased from 301 residents in 1830 to approximately 975 residents in 2014. Between 1980 and 1990 the population increased by 16%, and has been slowly decreasing since. The median age of residents is approximately 60 years, and a majority of residents are older than 35. Approximately 18% of the population 25 years of age or older has attained a Bachelor's degree or higher (NHES).

Cultural Development Patterns

Pittsburg was incorporated as a town in 1840. The majority of Pittsburg is undeveloped forest land and timber harvest is the largest economic driver in the community. Of the area that is developed, approximately 87% is residential and 7% is commercial. Approximately 90% of residential housing stock is single family (NHES). Development is dense in the village area, located west of Lake Francis. Rural residential development is scattered throughout town.

Land Use Planning

The Pittsburg Master Plan was adopted on April 23, 1992 by the Planning Board. The Planning Board and town subdivision regulations were abolished in 1994. The North Country Council provides resources for community development and land use planning for Pittsburg. The Town of Pittsburg does not have a zoning ordinance.

The town has a reputation for being the "Snowmobiling Capital of New England", according to the town's website, and is home to over 200 miles of snowmobile trails and approximately 140 miles of ATV trails. Approximately 88% percent of the town's land area is designated conservation land.

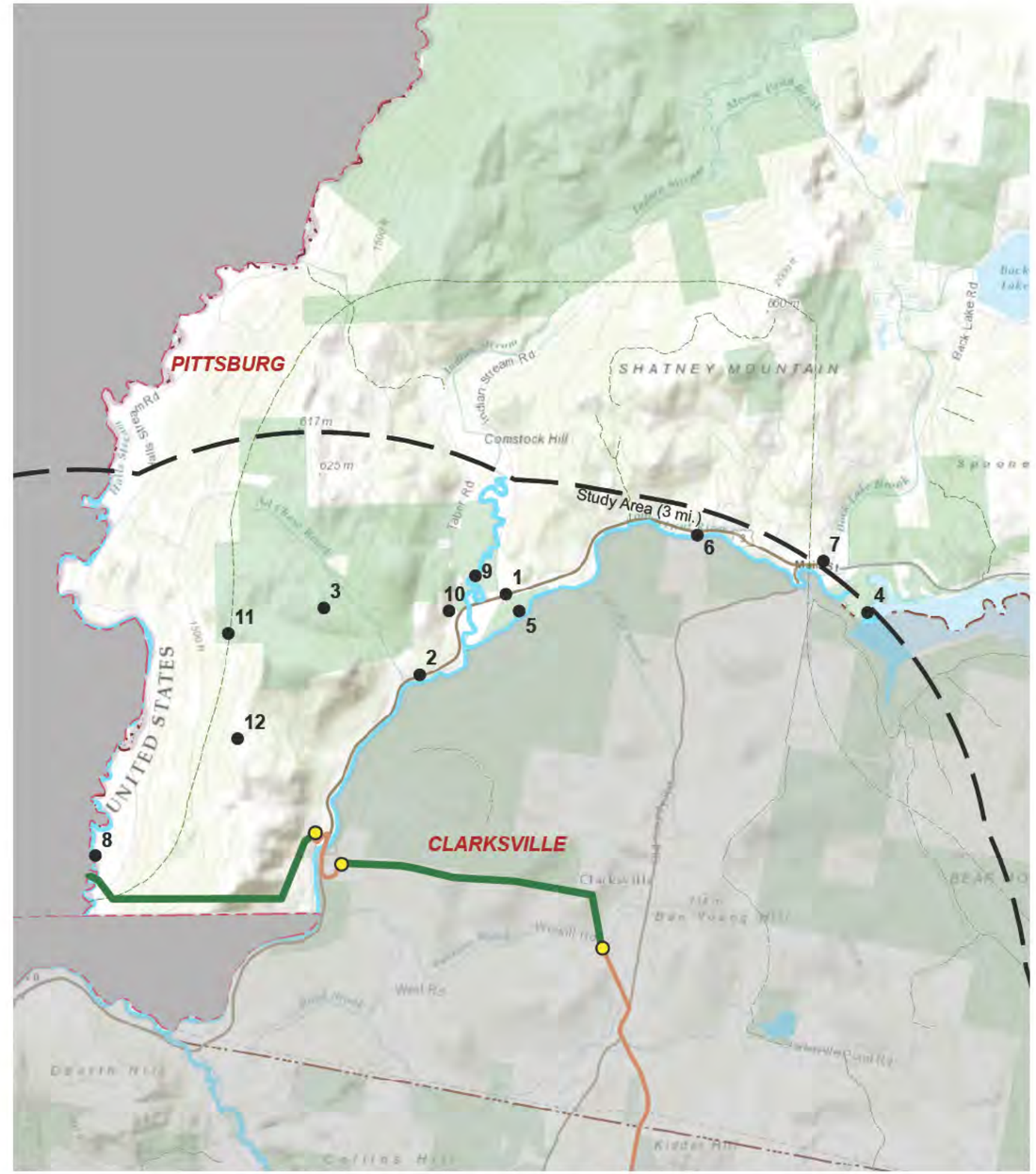
Proposed Transmission Corridor

Physical Features: The 320-kV transmission line corridor will be 120 feet in width and run west-east for approximately 2.1 miles near the southern town border. Proposed structures will range in height from 65 feet to 115 feet (only one structure reaches the height of 115 feet). The project will transition underground west of Beecher Falls Road, under the Connecticut River and continue into Clarksville.

Surrounding Topography: The area adjacent to the transmission corridor is characterized by a slope with a peak elevation of approximately 1,600 feet. Steep slopes are located along the eastern half of the proposed transmission corridor.

Vegetation: The majority of the land within and adjacent to the transmission corridor is forested, containing a mix of northern hardwood-conifer, hemlock-hardwood pine, and lowland spruce-fir, as well as some marshes (WAP).

Adjacent Land Use: Land use in the immediate vicinity of the transmission corridor is predominately forested. Low density residential is located along Halls Stream Road, however no residences are located adjacent to the corridor. Halls Stream Road is considered an ATV access trail. The proposed project goes underground before crossing Beecher Falls Road, and continues under US Route 3 and the Connecticut River. The proposed transmission corridor crosses the Corridor 20 snowmobile trail.



PROPOSED TRANSMISSION CORRIDOR
UNDERGROUND TRANSMISSION CORRIDOR
TRANSITION STATION
SUBSTATION
OTHER TRANSMISSION LINE
SCENIC RESOURCE (SEE SCENIC RESOURCE TABLE)
CONSERVATION AREA
WATER RESOURCE
SCENIC BYWAY
1 MILE

PITTSBURG SCENIC RESOURCES

TABLE 1-1: PITTSBURG SCENIC RESOURCES

#	SCENIC RESOURCE	DESCRIPTION	SOURCE	OWNERSHIP	DISTANCE TO CORRIDOR	CULTURAL VALUE	POSSIBLE VISIBILITY	VISUAL QUALITY	SCENIC SIGNIFICANCE
1	Connecticut River Scenic Byway	US Rt 3 / US Rt 145. National Scenic Byway.	8	NH Dept. of Transportation	Crosses corridor (UG)	HIGH	YES	MEDIUM	MEDIUM-HIGH
2	Moose Path Trail Scenic Byway	US Rt 3 / NH Rt 145. State designated Scenic and Cultural Byway.	8	NH Dept. of Transportation	Crosses corridor (UG)	MEDIUM	YES	MEDIUM	MEDIUM
3	Amey, J & Amey, D Conservation Easements	Conservation land is part of federal Grasslands Reserve Program.	14	NH Dept of Agriculture (easement holder)	1 mi	LOW	YES		
4	Lake Francis	Publicly accessible waterbody (boat ramp).	2 / B	NH Dept of Recreation & Economic Development	3.7 mi from boat ramp. 2.8 mi from Dam.	MEDIUM	NO		
5	Connecticut River	Designated in the NH Rivers Management Program.	2 / 14 / 9	NH Dept. of Environmental Services	Crosses corridor	MEDIUM	YES	MEDIUM	MEDIUM
6	Pittsburg-Clarksville Covered Bridge	18786 covered bridge spans Connecticut River. Eligible for listing on National Register of Historic Places.	16	Towns of Clarksville & Pittsburg	2.8 mi	HIGH	NO		
7	Pittsburg Memorial Park & Town Park	Public Park and War Memorial.	B	Town of Pittsburg	3.0 mi	MEDIUM	NO		
8	Halls Stream	River not designated in NH Rivers Management Program	30	State	Crosses Corridor	LOW	YES		
9	Indian Stream	River not designated in NH Rivers Management Program	30	State	2.2 mi	LOW	YES		
10	Indian Stream Schoolhouse	Listed on the National Register of Historic Places and the NH State Register of Historic Places. A public museum located on the Connecticut River Byway.	29 / 34	Town of Pittsburg	1.9 mi	LOW	YES		
11	State ATV Trail	State-wide ATV trail	17	Various	Crosses Corridor	LOW	YES		
12	State Snowmobile Trail 20, 128	State-wide snowmobile trail.	3	Various	Crosses Corridor	LOW	YES		

YELLOW ROWS: Resources described in this town section with possible VIEWS of the corridor and at least a MEDIUM Cultural Value Rating

SCENIC RESOURCE SOURCES:

STATE/REGIONAL SOURCES:

(2) New Hampshire Fish and Game Department Table of Public-access boating and fishing sites in New Hampshire: http://www.wildlife.state.nh.us/Outdoor_Recreation/access_sites_table.htm

(3) New Hampshire Snowmobile Association Map, 2014

(8) New Hampshire DOT Scenic Byway Map, October 2008. http://www.nh.gov/dot/programs/scbp/index.htm

(9) NH Fish and Game Department website the Merrimack River Wildlife Heritage Trail: http://merrimack.wildnh.com

(14) National Conservation Easement Database: http://www.conservationeasement.us/projects/

(16) New Hampshire Covered Bridges List: http://www.nh.gov/nhdhr/bridges/town.html

(17) State of New Hampshire OHRV Trails Map by Bureau of Trails New Hampshire: http://www.nhstateparks.org/uploads/pdf/ATV-Trail-Bike_Trails-Map.pdf

(30) Official List of Public Waters by New Hampshire Department of Environmental Services Water Division, January 17, 2014

LOCAL SOURCES:

(B) Master Plan for the Town of Pittsburg, 1992

RT. 3 CONNECTICUT RIVER SCENIC BYWAY (1) / RT. 3 MOOSE PATH SCENIC BYWAY (2) / CONNECTICUT RIVER (5)

PITTSBURG

OVERALL VISUAL IMPACT **LOW**

Connecticut River Scenic Byway

The Connecticut River Byway is a corridor of scenic highways, byways, and waterways along the Connecticut River in New Hampshire, Vermont and Massachusetts. Attractions along the Byway include historic sites and villages; covered bridges; recreation opportunities; arts and cultural institutions; and the classic New England scenery of the Connecticut River Valley.

The Connecticut River Byway is one of only three National Scenic Byways in New Hampshire, and the only one that intersects the NPT project (the other two National Byways are the Kancamagus Highway between Conway and Lincoln, and the White Mountains Trail, which follows Routes 3 and 302 between Conway and Lincoln). National Scenic Byways are roadways that are considered destinations unto themselves and deserve national recognition for their intrinsic values.

The Scenic Byway extends over 500 miles of roadways between New Hampshire and Vermont. Two roads in northern New Hampshire are a part of the Connecticut River Byway: Route 3 paralleling the Connecticut River from the Canadian border to Lancaster, and Route 145 between Pittsburg and Colebrook. Route 145 is also currently designated by the NH Department of Transportation as one component of the Moose Path Trail Scenic Byway. The Annual Average Traffic Volume (AADT) for Route 3 at the Clarksville town line and Connecticut River crossing is 1,000 trips/day (NH Dept. of Transportation, 2014).

The Connecticut River Scenic Byway has views of the transmission corridor at two individual locations. This description and analysis focuses on the visibility from Route 3 between Pittsburg and Clarksville. See the Subarea 1 for an overall visual impact assessment on the resource as a whole.

The scenic attractions along the Connecticut River Byway within 3 miles of Route 3 include periodic views of the Connecticut River, the Washburn Family Forest (see separate description), and Hurlbert Swamp (accessible from Route 145).

Connecticut River

The Connecticut River is the largest river in New England. The river starts on the Canadian border at NH's Fourth Connecticut Lake and winds its way over 400 miles to the Atlantic Ocean. It flows through 26 communities in New Hampshire and is the longest designated River in the NH River Corridor Management and Protection Program. The entire length of the Connecticut River in New Hampshire has been designated under this program since 1991. According to the NH Department of Environmental Services (NHDES), the river is "recognized as a high priority area for the NH Resource Protection Project due to the quality natural resource base. The targeted resources include: wildlife habitat, drinking water supplies, forestry, agriculture, recreation potential as well as pollution threats" (NH Dept of Environmental Services Environmental Fact Sheet).

Boating and fishing are two of the largest recreational opportunities on the Connecticut River. There are approximately 50 access sites along the river in New Hampshire from Pittsburg to Hinsdale. There are stretches of whitewater for expert kayakers and canoeists, and calm areas for flat water and motorized boating. Hundreds of people visit New Hampshire each year to fish in the waters of the river and its headwaters. The NH Fish and Game Department stocks approximately 33,750 trout for anglers and approximately 150,000 salmon fry each year as part of a salmon restoration effort. In addition to recreation on the river itself, several towns have visitor centers offering swimming, hiking, recreation fields, and picnic sites. Snowmobile and bike trails also offer recreation and scenic opportunities along the river. The trail closest to the project area is located in the Washburn Family Forest on the east bank of the river in Clarksville (see Washburn Family Forest description for more details).

In addition to the recreational opportunities on the Connecticut River, the river valley is also recognized for a variety of high quality scenic views. NHDES describes the scenic quality of the river valley as such:

"The Connecticut River and its valley provide New Hampshire with some of its most valuable scenic views. The river provides glimpses of long stretches of whitewater surrounding wetlands full of wildlife, and vast expanses of agricultural fields and farmlands. Distant peaks, town hall steeples, and traditional New England homes such as those in Orford are other sites admired by tourists and recreationalists alike. Scenic highlights of the region include the Cornish-Windsor covered bridge and the St. Gaudens' National Historic Site, with its commanding view of Mt. Ascutney" (NHDES Environmental Fact Sheet).

Proposed Transmission Corridor

The 320-kV DC transmission line will be located above ground on galvanized steel lattice structures in the center of a 120-foot cleared right-of-way on both the east and west sides of the Byway and the Connecticut River. The underground section will start at the Transition Station on Beecher Falls Road (Old Canaan Road) approximately 600 feet northeast of the Byway/River crossing. The line will travel under Beecher Falls Road to the intersection with Route 3, where it will bend south toward the Connecticut River. Beecher Falls Road is a secondary town road, heavily wooded on both sides except for one commercial structure on the north side of the road where it intersects with Route 3.

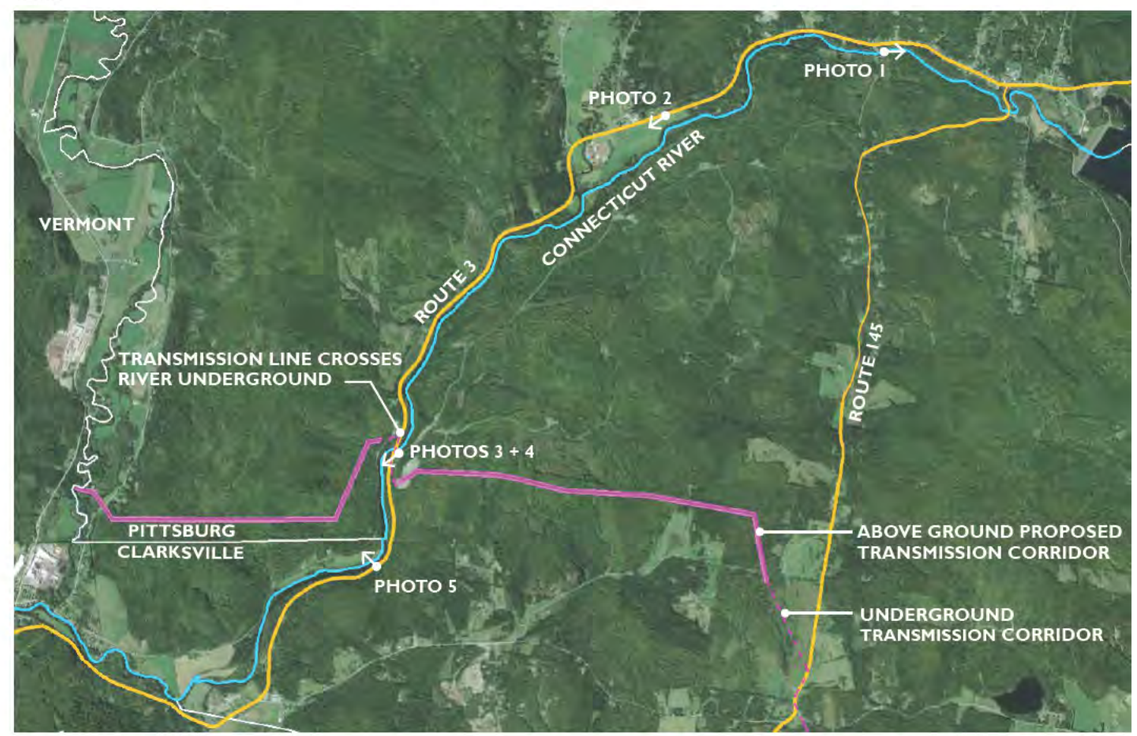
The transmission line will be located within the Route 3 right-of-way, crossing under the Connecticut River adjacent to the Route 3 highway bridge. On the east side of the river, near the entrance to the Washburn Family Forest, the underground line will cross Route 3 and head in a southeasterly direction to a second transition station located in a gravel pit on the east side of the road. From this point the transmission line will continue above ground.

PHOTO 1: View east from Clarksville-Pittsburg Covered Bridge over the Connecticut River. This location is 3 miles from the NPT project. There will be no project visibility from this location.

PHOTO 2: View of rolling topography from Route 3, approximately 2 miles north of the project corridor. The transmission corridor will not be visible from this viewpoint.

PHOTO 3: View facing south toward bridge over the Connecticut River. Underground transmission corridor to be located here. No structures will be visible.

PHOTO 4: View on bridge over Connecticut River. NPT corridor will be underground. No structures will be visible.



RT. 3 CONNECTICUT RIVER SCENIC BYWAY (1) / RT. 3 CONNECTICUT RIVER (5)

PITTSBURG

Cultural Value: High

One of three National Scenic Byways in the state of New Hampshire and one of 53 in the United States.

Visual Quality: Medium

The Byway includes periodic views of the Connecticut River and a landscape composed of rolling forested hills. The area within close proximity to the corridor crossing is primarily forested.

Scenic Significance: Medium-High

VISUAL IMPACT ASSESSMENT

Visual Effect: Low

- There will be no visual evidence of the above ground NPT line at the Route 3 (Connecticut River Byway) and Connecticut River crossing. There will be some clearing for the underground line (25 feet in width) present south of the corridor crossing.
- The two transition stations will consist of a dead-end structure enclosed by a security fence. The structure in the western station will be sited approximately 260 feet from Beecher Falls Road. The transition station on the east side will be located in an existing gravel pit approximately 840 feet from the Scenic Byway. The transition stations will not be visible from either the river or the Byway.
- Landscape restoration and other mitigation measures will be effective in minimizing adverse effects of the underground corridor and transition stations.
- The project may be partially visible to boaters heading downstream on the Connecticut River approximately 0.6 to 1.3 miles south of the corridor crossing. Vegetation on the foreground of the river should block views of most of the structures over the top of the hill northwest of the river.
- From the Byway, occasional gaps in the roadside vegetation between the river and the Byway will allow views of transmission line passing over a pronounced hill on the west side of the river for westbound motorists approximately 1.5 miles south of the corridor crossing. The top of approximately 6 structures may be briefly visible over the tree tops on the side of the hill. Eastbound motorists may see the tops of 2-3 structures for 12-15 seconds at a distance of one mile where Route 3 is aligned with the transmission line on the east side of the river.

Mitigation

- Locating the NPT line underground, thus avoiding potential visual impacts to a nationally designated Byway.
- Siting transition stations in locations that are not visible from Route 3 (Scenic Byway).
- Using existing road right-of-way for the underground section where possible to minimize loss of vegetation.
- Replanting native tree and shrub species to restore landscape disturbed for underground cable installation, subject to underlying landowner permission, (e.g., between transition station and Beecher Falls Road; at intersection of Beecher Falls Road / Route 3; near entrance to gravel pit and Washburn Family Forest).

User Groups: Byway travelers, motorists, local residents, commercial traffic, and cyclists.

User Expectation: Medium

- Touring motorists will have a heightened expectation of scenic quality due to the promotional material generated for the Byway and signage along the way.
- Tourists who select the Connecticut River Scenic Byway have a higher sensitivity than those who travel Route 3 frequently in their daily activities.
- This section of the Byway passes agricultural fields, commercial development, and rural residential areas. There is some expectation of cultural modifications along the Byway.

Extent, Nature, and Duration of Public Use: Medium

- Motorists will pass the underground crossing over the course of a few seconds. Most people will not notice the changes resulting from the NPT project. Motorists and passengers may catch a quick glimpse of the transition stations through the roadside vegetation.

Overall Visual Impact: Low

The new transition stations, overhead transmission line, and underground transmission line will have a low overall visual impact on this section of the Connecticut River and Connecticut River Byway. The project should not result in a change in the way people now use or enjoy the river or the Byway.

- The visibility of the corridor is virtually eliminated at the crossing by placing the corridor underground where it crosses the river and Byway.
- Landscape restoration and other mitigation measures will be effective in minimizing or eliminating adverse visual effects.
- Nothing proposed would block or interfere with existing scenic views.
- The brief views of the project for both east and westbound motorists are the only points along the Connecticut River Byway that will be affected by the project.

See the Subarea 1 Impact Summary for an assessment of the visual impact on the Connecticut River Byway as a whole.

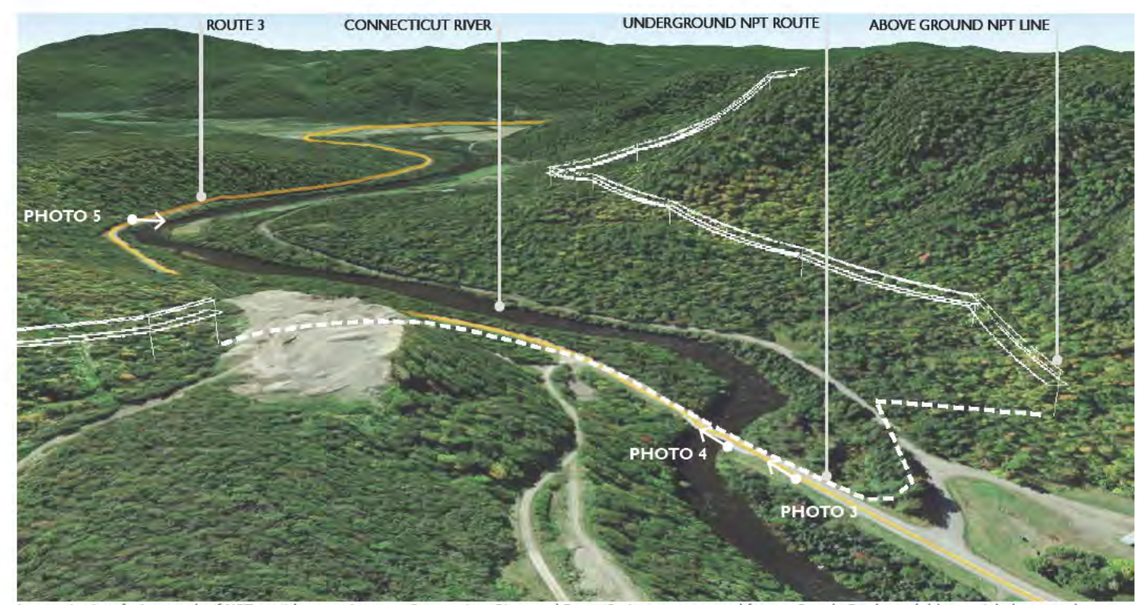
Pittsburg Works Cited:

NH Department of Environmental Services. Connecticut River Environmental Fact Sheet. 2008.

Connecticut River Byway Official Website. http://ctriverbyways.org/

North Country Council. North Country Scenic Byways Council. Moose Path Trail Corridor Management Plan. Draft for Public Hearing: August 25, 2015.

PHOTO 5: Northwest view at Connecticut River. Photo location is southeast of the corridor. The top of up to 6 structures will be briefly visible above the trees on the left side of the hill. The majority of the Byway is forested in this area. This break in the vegetation will expose structures to motorists (photo source: Google Earth Street View).



Isometric view facing south of NPT corridor crossing over Connecticut River and Route 3. Image generated from a Google Earth model (an aerial photograph overlaid a digital elevation model). The above ground structure are diagrammatic and shown to scale. The underground corridor is represented with a dashed line. No tree heights are accounted for in this image.

CLARKSVILLE DESCRIPTION

Land Area: 60.5 square miles (NHES)

Inland Water Area: 1.9 square miles (NHES)

Population: 325 residents (NHES)

Population Density: 5.4 persons per square mile (NHES)

Town Location: Clarksville is located in Coos County, and is positioned north of Stewartstown, Dixville, Dix's Grant; west of Atkinson and Gilmanton Academy Grant; and south of Pittsburg in New Hampshire; and east of Canaan, Vermont.

Study Area: The study area is located on the west side of town. The study area covers 31.09% of the total land area (12,408 acres).

Physical Characteristics

The western boundary of Clarksville is largely defined by the Connecticut River, while portions of the northern boundary abut Lake Francis. The topography in town is hilly, with steep slopes located in the eastern part of town, within the conserved Connecticut Lakes Headwaters land area. The western portion of town contains the Washburn Family Forest and large gravel pits. The town contains peaks reaching 2,000 feet.

Demographics

The population of Clarksville has remained relatively steady since 1980, when approximately 262 residents lived within town. In 2014 the population measured approximately 325 residents. The median age of residents is approximately 51 years of age, and a majority of residents are over 35 years of age. Approximately 20% of residents 25 years of age or older have attained a Bachelor's degree or higher (NHES).

Cultural Development Patterns

Clarksville originated as a tract of land purchased from Dartmouth College in 1789 and was later incorporated as Clarksville in 1853. Natural resources dominate the economy here as they do in much of Coos County. Businesses associated with logging are the three largest employers in Clarksville. Opportunities related to outdoor recreation are the primary attractions listed for the town. Development in Clarksville is approximately 92% residential, and of that approximately 85% of residential housing is single family (NHES).

Land Use Planning

The town of Clarksville does not have a master plan, town website, or zoning. The town selectmen act as the Planning Board. Rural residential development is primarily located in the southwestern portion of town. The North Country Council provides resources for community development and land use planning for Clarksville.

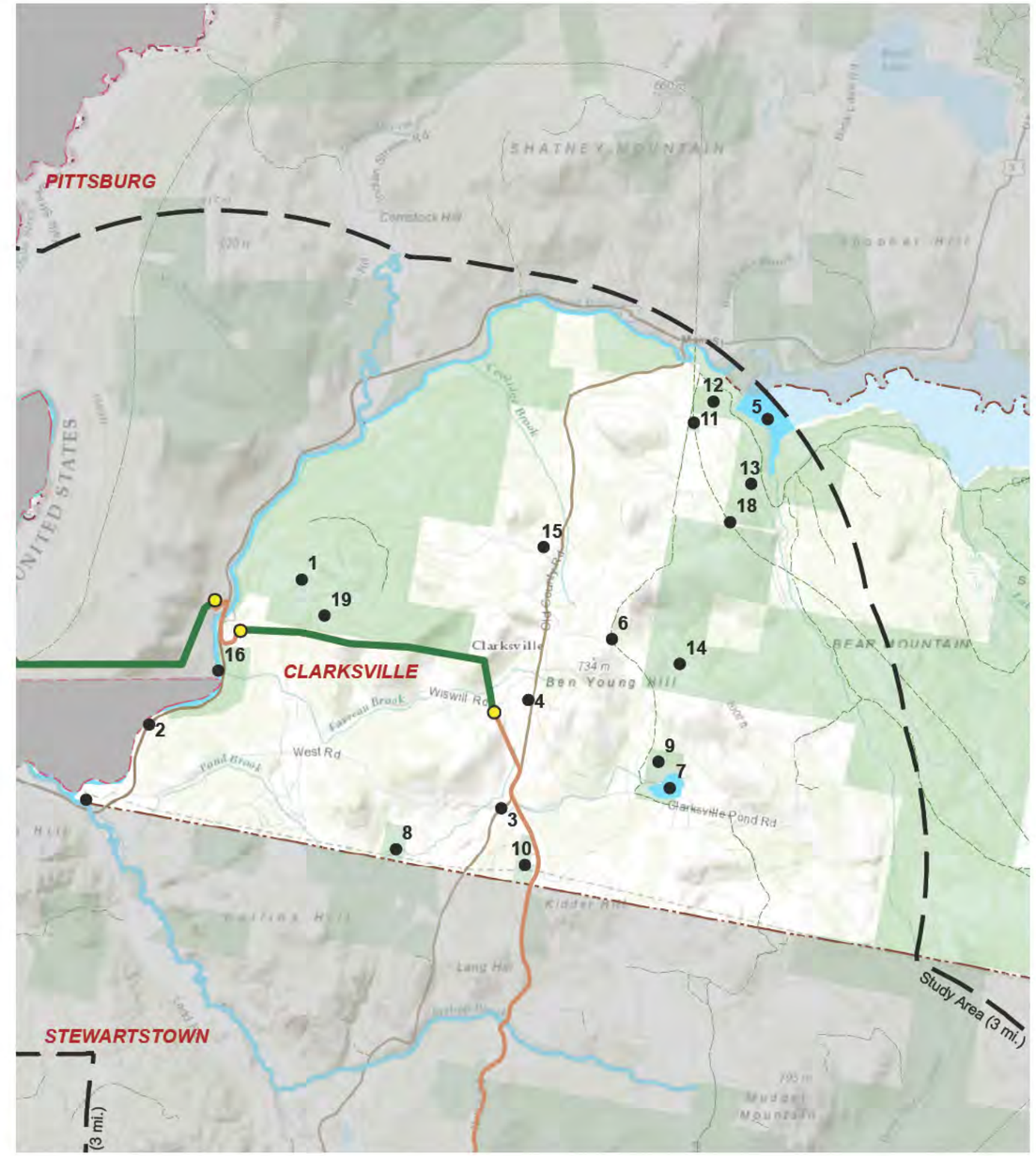
Proposed Transmission Corridor

Physical Features: The 320-kV transmission line corridor will be 120 feet in width and run west-east for approximately 2.5 linear miles from the west town boundary near the Connecticut River. The transmission line converts to an underground line approximately 0.25 mile west of Route 145 and continues approximately 1.4 miles north-south to the town boundary along state and municipal roads. Proposed structures will range in height from 65 feet to 105 feet.

Surrounding Topography: The area adjacent to the transmission corridor is hilly with elevations as high as approximately 1,600 feet. The proposed overhead transmission corridor traverses steep slopes along the southern border of the Washburn Family Forest.

Vegetation: A majority of land within and adjacent to the transmission corridor is forested, containing a mix of northern hardwood-conifer, lowland spruce-fir, grassland, and marshes (WAP).

Adjacent Land Use: The project daylights in Clarksville from under the Connecticut River, and continues under Route 3, where it transitions overhead at a gravel pit. Land use in the immediate vicinity of the overhead transmission line is predominately forested, and portions are located adjacent to the southern side of the Washburn Family Forest. The corridor crosses Wiswell Road and proceeds underground to Route 145, an existing public roadway. Land use adjacent to the underground corridor in Clarksville is primarily low density residential, agriculture, local roads, and a conservation parcel managed by NRCS GRP Hodge.



PROPOSED TRANSMISSION CORRIDOR
UNDERGROUND TRANSMISSION CORRIDOR
TRANSITION STATION
SUBSTATION
OTHER TRANSMISSION LINE
SCENIC RESOURCE (SEE SCENIC RESOURCE TABLE)
CONSERVATION AREA
WATER RESOURCE
SCENIC BYWAY
1 MILE

CLARKSVILLE SCENIC RESOURCES

TABLE 1-1: CLARKSVILLE SCENIC RESOURCES

#	SCENIC RESOURCE	DESCRIPTION	SOURCE	OWNERSHIP	DISTANCE TO CORRIDOR	CULTURAL VALUE	POSSIBLE VISIBILITY	VISUAL QUALITY	SCENIC SIGNIFICANCE
1	Washburn Family Forest	Publicly accessible conservation land with trail infrastructure.	7	Society for Protection of NH Forests	< 0.1mi	MEDIUM	YES	MEDIUM	MEDIUM
2	Connecticut River Scenic Byway	US Rt 3 / NH Rt 145. National Scenic Byway.	8	NH Dept. of Transportation	Crosses corridor	HIGH	YES	MEDIUM	MEDIUM-HIGH
3	Moose Path Trail Scenic Byway	US Rt 3 / NH Rt 145. State designated Scenic and Cultural Byway.	8 / B	NH Dept. of Transportation	Corridor Crossing UG	MEDIUM	YES	MEDIUM	MEDIUM
4	Young Cemetery	Cemetery on Moose Path Trail Scenic Byway (Rt. 145).	32	Private	0.3 mi	LOW	YES		
5	Lake Francis	Publicly accessible waterbody (ramp).	2	NH Dept of Recreation & Economic Development	2.8 mi	MEDIUM	NO		
6	Cohos Trail	162-mile trail in Cohos County, managed by Cohos Trail Association. VIA in Stewartstown and Subarea 1 Impact Summary.	28	Various	2.6 mi	MEDIUM	NO	MEDIUM	MEDIUM
7	Clarksville Pond	Publicly accessible waterbody (canoe/cartop). NH Designated Trout Pond.	2 / 27	NH Fish and Game Dept.	1.4 mi	MEDIUM	NO		
8	Hurlbert Swamp	Publicly accessible conservation land. Northern White Cedar swamp with trail and boardwalk.	7	Society for the Protection of NF Forests	1 mi	MEDIUM	NO		
9	Shatney Trusts	Conservation easement on land abutting Clarksville Pond.	14	Society for the Protection of NH Forests (easement holder)	1.2 mi	LOW	NO		
10	NRCS GRP Hodge Conservation Easement	Conservation easement held by U.S. Natural Resources Conservation Service as part of Grasslands Reserve Program.	15	U.S. Natural Resources Conservation Service (easement holder)	1 mi	LOW	YES		
11	Pittsburg Water Department Land	Town land managed by water department. Water reservoir at Lake Francis. Site not designated for public recreation.	D	Town Water Department	2.4 mi	LOW	NO		
12	Jahoda-Johnson Conservation Easement	Conservation easement. Not publicly accessible.	14/ D	U.S. Natural Resources Conservation Service (easement holder)	2.5 mi	LOW	NO		
13	Murphy Dam & Lake Francis Conservation Area	Conservation land abutting Lake Francis.	D	Unknown	2.5 mi	MEDIUM	NO		
14	Connecticut Lakes Headwaters	Publicly accessible conservation easement.171,000 acres. Some of property is state-owned and managed as a natural area, while the remainder is conserved as a sustainable, working forest managed by a local timber company (Trust for Public Land website).	6	NH Dept of Recreation & Economic Development (easement holder)	1.1 mi	MEDIUM	NO		
15	The Clarksville Freedom Trail	Publicly accessible trail. 1-mile trail loop. Trail conditions allow for limited mobility access.	C	David Chappell (private)	0.9 mi	MEDIUM	NO		
16	Connecticut River	Designated in the NH Rivers Management Program. VIA in Pittsburg.	2 / 4 / 19	NH Dept. of Environmental Services	Crosses Corridor	MEDIUM	YES	MEDIUM	MEDIUM
17	Bishop Brook	River not designated in NH Rivers Management Program.	30	State	1.0 mi	LOW	YES		
18	State ATV Trail	State-wide ATV trail	17	Various	2.0 mi	LOW	NO		
19	State Snowmobile Trail 20	State-wide snowmobile trail.	3	Various	Crosses corridor	LOW	YES		

YELLOW ROWS: Resources described in this town section with possible VIEWS of the corridor and at least a MEDIUM Cultural Value Rating

STATE/REGIONAL SOURCES:

(2) New Hampshire Fish and Game Department Table of Public-access boating and fishing sites in New Hampshire: http://www.wildlife.state.nh.us/Outdoor_Recreation/access_sites_table.htm

(3) New Hampshire Snowmobile Association Map, 2014

(4) Map of Designated Rivers in the New Hampshire River Protection Program, Department of Environmental Services: http://des.nh.gov/organization/divisions/water/wmb/rivers/desigriv.htm

(6) State Lands Administered by State of NH Department of Resources and Economic Development and the NH Fish and Game Department, July 2007

(7) Society for the Protection of NH Forests – List of Properties, January 2013

(8) New Hampshire DOT Scenic Byway Map, October 2008. http://www.nh.gov/dot/programs/scbp/index.htm

(14) National Conservation Easement Database: http://www.conservationeasement.us/projects/

(15) USDA Grassland Reserves Program (GRP): http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/easements/grassland/

(17) State of New Hampshire OHRV Trails Map by Bureau of Trails New Hampshire: http://www.nhstateparks.org/uploads/pdf/ATV-Trail-Bike_Trails-Map.pdf

(19) New Hampshire Heritage Trail Program: http://www.nhstateparks.org/explore/bureau-of-trails/nh-heritage-trail-program.aspx

(27) Designated Trout Ponds in New Hampshire: http://www.wildlife.state.nh.us/Fishing/trout_ponds.html

(28) Cohos Trail Website:http://www.cohostrail.org/farnorth.html and Cohos Trail Map of Headwaters Region

(30) Official List of Public Waters by New Hampshire Department of Environmental Services Water Division, January 17, 2014:…

(32) NGIS Database - points from USGS Quad Maps

LOCAL SOURCES:

(B) Cohos Trail website - http://www.cohostrail.org/farnorth.html and Cohos Trail Map of Headwaters Region

(C) Hiking Brochure by North Country Chamber of Commerse, Colebrook NH

(D) Connecticut Lakes Headwaters Gates and Access Roads – Towns of Pittsburg, Clarksville, & Stewartstown by TFG Hunting and Recreation: http://www.tfghuntleases.com/NewsLetters/CT_LAKES_GATES&ROADS_1.8MB.pdf

WASHBURN FAMILY FOREST (1)

CLARKSVILLE

OVERALL VISUAL IMPACT **LOW**

The Washburn Family Forest is a 2,128-acre tract of forestland owned and managed by the Society for the Preservation of New Hampshire Forests. Prior to its purchase by the Forest Society in 2008, the Washburn family managed the land to supply lumber for their Washburn Lumber Company. The property includes 6.5 miles of frontage on the Connecticut River, deer wintering areas and other wildlife habitat, and a network of more than 9 miles of woods roads that are open to the public for hiking, hunting, and snowmobiling.

The main access and gravel parking area for approximatly 30 cars at the southern end of the property, is set back and well screened from Route 3. The trailhead includes a well-maintained kiosk with trail signage and information about the forest and recreational opportunities. The Washburns kept the adjacent gravel pit, which is actively being used as a source of construction material for local communities. Access into the Family Forest is off the main access road into the gravel pit.

Proposed Transmission Corridor

The access into the Forest is immediately north of NPT's proposed transition station, where the 320-kV DC line will resume an overhead route after crossing the Connecticut River and the Connecticut River Byway (Route 3) underground (See description of Connecticut River Byway crossing). The transmission line will be located within the Route 3 right-of-way, crossing under the Connecticut River adjacent to the Route 3 highway bridge. On the south side of the river, near the entrance to the Washburn Family Forest, the underground line leaves the Route 3 roadway and heads in a southeasterly direction for approximately 1800 feet to a transition station located on the upper edge of a gravel pit on the east side of Route 3. From this point the transmission line will continue above ground, on galvanized steel lattice structures, located in the center of a 120-foot cleared right-of-way on private forestland.

Cultural Value: Medium

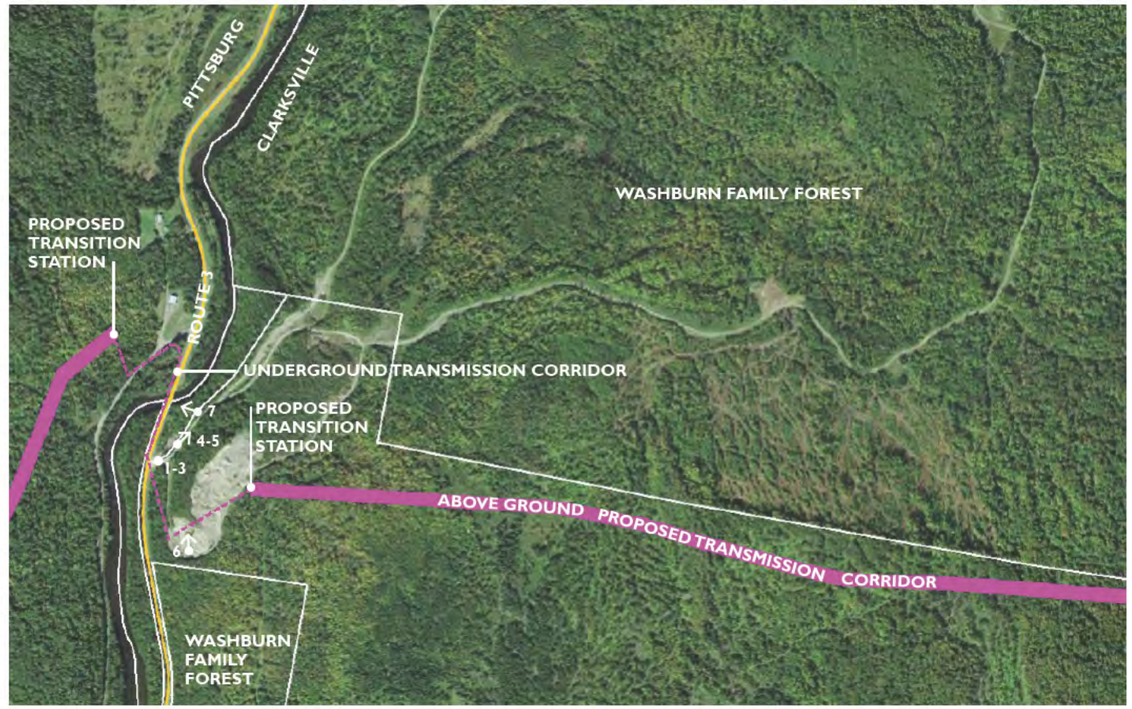
Conservation land open to the public and adjacent to a National Scenic Byway.

Visual Quality: Medium

Vegetation along the trails is a mixed second growth hardwood/softwoods, which effectively blocks most of the views beyond the immediate foreground. The trail along the Connecticut River offers scenic views along the shoreline of the river.

Scenic Significance: Medium

PHOTO 1: View of parking area from trail at Washburn Family Forest. US Route 3 is visible in the background of the photo. The underground corridor will run behind the parking area. Vegetation may be altered between the parking area and the roadway. No structures will be visible from this viewpoint.



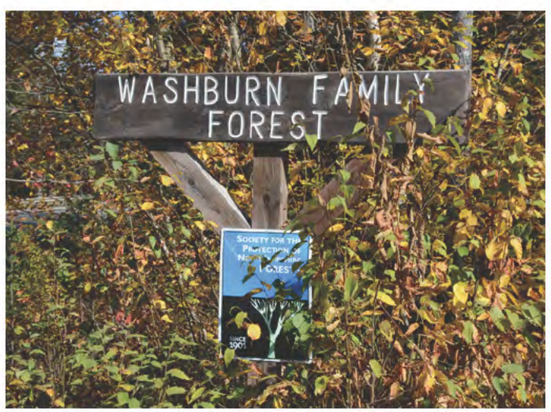


PHOTO 2: Sign at the entrance to Washburn Family Forest on US Route 3.

PHOTO 3: Kiosk at Washburn Family Forest trail entrance, located at trailhead at parking area.

PHOTO 4: Trail along the Connecticut River. No structures will be visible from the trails in the Washburn Family Forest.

WASHBURN FAMILY FOREST (1)

CLARKSVILLE

VISUAL IMPACT ASSESSMENT

Visual Effect: Low to None

- The transition station will consist of a dead-end structure and other equipment, surrounded by a chain link security fence. The station will be located in an existing gravel pit approximately 740 feet from the parking area and trailhead at the Washburn Family Forest.
- There will be virtually no visual evidence of the NPT line at the entrance to the Washburn Family Forest, the Connecticut River frontage, or the wooded roads within the forest.
- Landscape restoration and other mitigation measures will be effective in minimizing adverse effects.
- The proposed transmission corridor will run adjacent to the southern boundary of the Washburn Family Forest Land. There are no publicly accessible trails or vistas within the forest that will have visibility of the proposed transmission corridor.

Mitigation

- Locating the transmission line underground to avoid visual impacts to properties adjacent to a nationally designated Byway.
- Siting transition stations in locations that are not visible from Route 3 (Scenic Byway) or the trails within the Washburn Family Forest.
- Using existing road right-of-way for underground section where possible to minimize loss of vegetation.
- Replanting native tree and shrub species to restore landscape disturbed by underground cable installation, subject to landowner permission. (e.g., near entrance to gravel pit and Washburn Family Forest).
- Maintaining existing tree buffer between Route 3 and eastern transition station.

User Groups: Byway travelers, motorists, local residents, cyclists, anglers, and hikers.

User Expectation: Medium

- Visitors have a heightened expectation of scenic quality due to the informational material generated by the Society for the Preservation of New Hampshire Forests.
- The rural location of this resource sets an expectation of limited development and cultural modification. This expectation is offset by the active gravel pit and truck traffic at the entrance and the close proximity to Route 3.

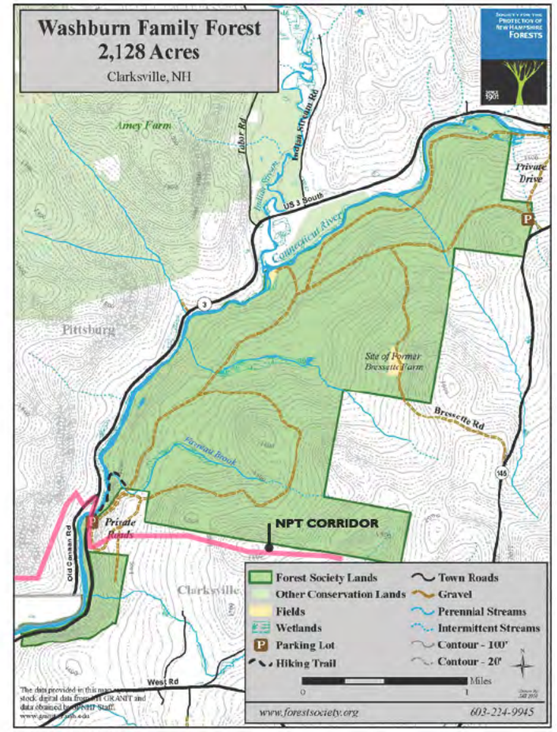
Extent, Nature, and Duration of Public Use: Medium

- The Washburn Family Forest provides an opportunity for visitors to hike forested trails and access the Connecticut River for fishing and walking along the river edge.
- The parking area and trails are well maintained and marked with good signage. Use of the trails is for day use.
- The trail system includes a mile of footpaths along the Connecticut River and public access along gravel woods roads.
- The scenic quality of the trails is important to hiking and secondary to activities such as mountain biking and fishing.

Overall Visual Impact: Low

The construction of a new transition station and transmission line will have a low overall visual impact on the Washburn Family Forest. The presence of the underground section of the NPT project and the transition station should not result in a substantial change in the way people now use or enjoy the trail system or the Connecticut River.

- The visibility of the corridor is virtually eliminated by placing the corridor underground at the entrance to this resource.
- Landscape restoration and other mitigation measures will be effective in minimizing or eliminating adverse visual effects.



Official SPNHF Map

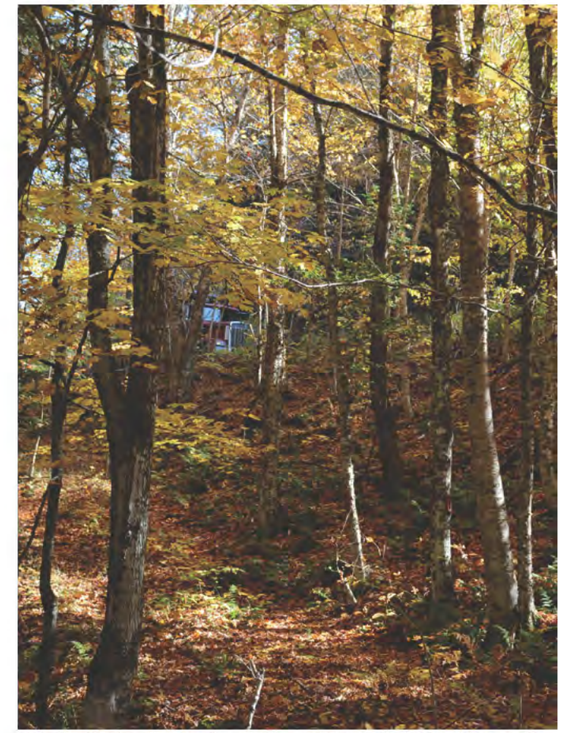


PHOTO 5: Truck traffic from the active gravel pit next to the Family Forest. No structures will be visible from the trails in the Washburn Family Forest.

PHOTO 6: View facing north in gravel pit located south of the Washburn Family Forest parking area. The transition station will be located approximately 500 feet northeast from the top of the embankment. The transition station will not be visible from this vantage point.

PHOTO 7: Connecticut River from trail. The Route 3 Bridge is visible through the trees. The transmission line will be located underground as it crosses the river.

RT. 145 CONNECTICUT RIVER SCENIC BYWAY (2) / RT. 145 MOOSE PATH SCENIC BYWAY (3)

CLARKSVILLE

OVERALL VISUAL IMPACT **MEDIUM**

Route 145 between Pittsburg to the north and Colebrook to the south is part of the state-designated Moose Path Trail Scenic Byway, which ultimately extends south to Gorham. The Byway is known for its abundant historic, cultural, and scenic resources and for the potential for motorists to spot moose along the road. Some of the highlights include:

- Northern Forest Heritage Park and the Brown Pulp & Paper Company House Museum in Berlin
- The recreational and wildlife viewing opportunities of the Pontook Reservoir on the Androscoggin River in Dummer
- 13 Mile Woods Scenic Area
- Route 26 Wildlife viewing area, Dixville Notch State Park, and the historic Balsams Resort in Dixville Notch
- Lake Francis State Park and Connecticut Lakes State Forest in Pittsburg.

The section of Route 145 between Colebrook and Pittsburg, along with Route 3 near the Vermont border, is also part of the Connecticut River Byway, one of only three National Scenic Byways in New Hampshire, and the only one that intersects the NPT project (the other two National Byways are the Kancamagus Highway between Conway and Lincoln, and the White Mountains Trail, following Routes 3 and 302 between Conway and Lincoln). National Scenic Byways are roadways that are considered destinations unto themselves and deserve national recognition for their intrinsic values.

The landscape in the immediate vicinity of the NPT transmission corridor consists of wooded hills in the midground to the west, pasture land and abandoned fields with successional growth in the immediate foreground, several farmsteads, and a few newer rural residential properties. The primary views are to the west; views to the east are blocked by woods and steep topography adjacent to the road. Notable points of scenic interest in this section of Route 145 are the Young Cemetery and Ben Young Hill, north of the line. There are no transmission lines in the immediate vicinity of this section of Route 145. NHDOT literature on the Byway does not mention any visual resources within three miles of the point where the transmission line crosses. The AADT for Route 145 north of Wiswell Road is 480 trips/day (NHDOT, 2014).

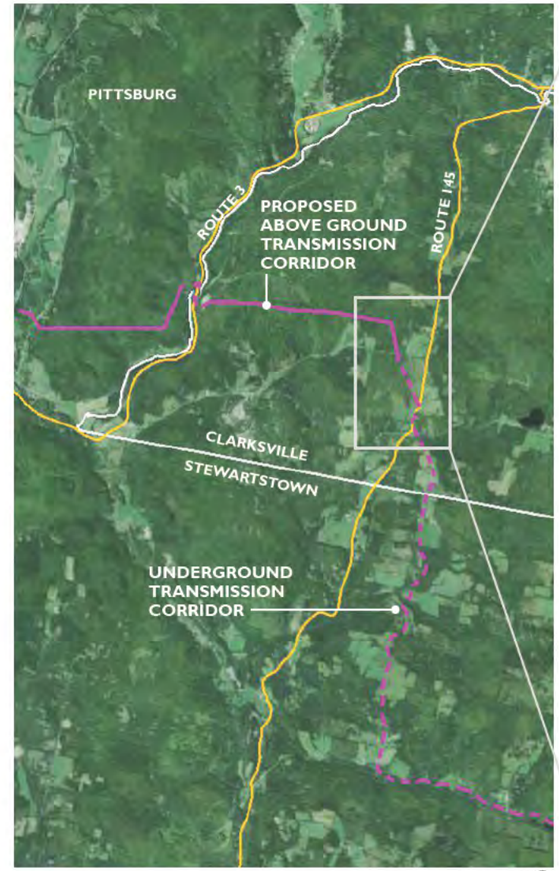
The **Young Cemetery** is located on a sloping hillside on the west side of Route 145 (Moose Path Trail Scenic Byway and Connecticut River National Byway) in Clarksville. The well-maintained cemetery has approximately 250 headstones dating back to the mid-1800's. The east side of the cemetery faces Route 145, where there is an informal pull-off for several cars.

Stone walls and trees surrounding the cemetery impart a distinct sense of enclosure on three sides and limit the primary view to the immediate foreground during leaf-on conditions. The majority of the views within the cemetery to the north, south, and west are screened by tall shrubs and a line of evergreen trees along its border. There are occasional gaps in the vegetation that will afford intermittent views of the transmission line.

Proposed Transmission Corridor

The 320-kV DC transmission line will be located underground at the point where it crosses the Scenic Byway, starting at a transition station located 0.3 mile to the northwest. North and west of the transition station, the proposed transmission line will be located in a new 120-foot wide corridor on weathering steel monopole structures that will range in height from 75 to 95 feet located within one mile of the Byway. Northbound motorists will see 1 to 5 weathering steel monopole structures and the transition station intermittently through breaks in the roadside vegetation. At its closest point, the proposed transmission corridor will be 0.3 mile west of the Young Cemetery.

The underground section will start at a transition station on the south side of Wiswell Road in Clarksville, approximately 1,500 feet west of Route 145. Wiswell Road is a secondary town road, heavily wooded on both sides of the crossing. Wiswell Road marks the start of a 7.5-mile long underground section that continues to Heath Road in Stewartstown.



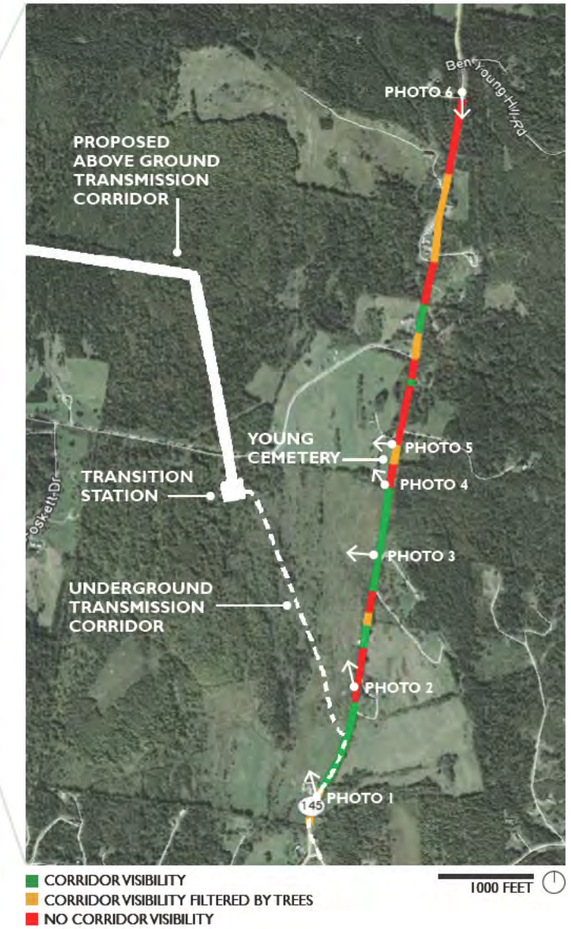


PHOTO 1: Northbound lane on Route 145 facing farmhouse. The NPT project will not be visible from this viewpoint.

PHOTO 2: Northbound lane on Route 145. Trees on the west side of the corridor will buffer view of NPT Project.

PHOTO 3: View facing west from Route 145. The top of the transition station structure will be visible.

PHOTO 4: View facing northwest looking over Young Cemetery. Vegetation in the foreground blocks views to above ground transmission structures from this viewpoint.

RT. 145 CONNECTICUT RIVER SCENIC BYWAY (2) / RT. 145 MOOSE PATH SCENIC BYWAY (3)

CLARKSVILLE

From the Wiswell Road transition station, the transmission line will be located in a 25-foot wide cleared corridor that will run through woodlands and fields for 0.5 mile, travelling in a southeasterly direction to Route 145. From there the proposed transmission corridor will continue underground southward within the road right-of-way approximately 0.25 mile, at which point it will follow Old County Road to the east.

Cultural Value: High

A state and nationally designated Scenic Byway.

Visual Quality: Medium

The Byway includes periodic views of agricultural lands and rolling forested hills. The area in close proximity to the corridor is forested with open fields. The Young Cemetery's stone walls, old tombstones, and enclosing vegetation create a distinctive landscape. Views through the trees to the rolling hills to the west add depth and visual interest to the experience of being in the cemetery.

Scenic Significance: Medium-High

PHOTO 5: View on the north side of the cemetery facing west. The NPT structures will be visible through the trees over the hill in the midground.

PHOTO 6: View facing south from a high point on Route 145 on Ben Young Hill. The NPT Project will not be visible from this viewpoint.

VISUAL IMPACT ASSESSMENT

Visual Effect: Medium

- The primary visual effect to Byway travelers will result from a) two weathering steel monopole angle structures on the crest of a low hill west of Route 145 that will appear above the skyline and at more than twice the height of surrounding trees; b) the conductors between the transmission structures; and c) the transition station on the west side of Route 145 where the line will go underground.
- The visual effect on the Young Cemetery will result from the installation of five steel monopole structures and conductors within a 120-foot wide corridor that will be visible in the foreground and midground. Three of the structures will appear above the skyline; the remaining structures will be seen against the wooded hillside. The clearing for the transmission corridor will be seen as a visible break in the tree line; the surface of the ground within the clearing will not be visible. The line of the clearing echoes the lines created by the low hills in the midground and background. Conductors will be prominently visible in the foreground.
- Once the underground section of the corridor is restored, the cleared right-of-way will appear as a curved pathway through a reverting field and should not present any contrasts in color, line, form, or texture.
- The transition station will consist of a dead-end structure and other mechanical equipment enclosed by a security fence, located on the west side of Route 145. The transition station will be located south of Wiswell Road and partially screened from the road by existing woodland vegetation. The top of the transition station will be visible from Route 145. Existing successional trees in the vicinity of the station are expected to increase in height and provide additional screening in upcoming years. Landscape restoration and other mitigation measures will be effective in minimizing adverse effects.
- Northbound motorists will have intermittent views of 1 to 5 transmission structures and conductors and the transition station through breaks in the roadside vegetation over a 0.6-mile section of Route 145. If there were no vegetation present, the project components would be visible for approximately 40 seconds; however, the trees and large shrubs will limit views of the project to approximately 20-25 seconds. The transmission line will occasionally be visible to southbound motorists through breaks in the roadside vegetation over a 0.4-mile section, starting at Wiswell Road. Trees and large shrubs along the roadside will limit southbound views in this section to approximately 10-15 seconds.
- The transition station will not be prominently visible to southbound motorists on Route 145, since the view will be blocked by existing trees at the southerly end of the Young Cemetery and other vegetation between the station and the road.
- There are no designated overlooks or pull-offs along this section of the Scenic Byway. The roadway along Young Cemetery north of the underground crossing has a widened shoulder that can accommodate 2-3 cars (see description of Young Cemetery).

Mitigation

- Locating the NPT line underground where it crosses Route 145, thus minimizing visual impacts to a state and nationally designated Byway.
- Siting the transition station a quarter-mile from Route 145 in a successional field, where existing and supplemental vegetation will partially screen the station from the Scenic Byway.
- Using existing road rights-of-way for the underground section where possible to minimize loss of vegetation.
- Replanting native tree and shrub species to restore landscape disturbed for the underground cable installation, subject to underlying landowner permission. (e.g., between the transition station and Wiswell Road).
- Incorporating a reverse curve in the alignment of the underground corridor between Route 145 and the Wiswell Road transition station to minimize views up the corridor.
- Using weathering steel monopole structures to minimize contrast in color, line, and form.

User Groups: Byway travelers, cemetery visitors, motorists, local residents, commercial traffic, and cyclists.

User Expectation: Medium

- Touring motorists will have a heightened expectation of scenic quality due to the promotional material generated for the Scenic Byway and signage along the way.
- Expectation of cemetery visitors will be lessened by the presence of Route 145, a relatively new single family home 225 feet to the northwest, and local distribution lines below the hills to the north.

Extent, Nature, and Duration of Public Use: Medium

- With an AADT of 480 trips/day in 2014, Route 145 is a lightly travelled road. At peak hour (assumed to be approximately 10% of AADT), there is one car per minute on the road.
- An unknown number of people follow the Byway to experience the scenery; assume a low to moderate level of use due to its recognition as both a state and national Byway, and a small percent stopping at the Young Cemetery. Visitors are expected to spend less than an hour visiting the cemetery.
- People are drawn to the Byway by the general character of the surrounding landscape as well as occasional scenic highlights.
- Motorists will pass through this section of the Byway in less than 45 seconds and will be exposed to views of the project for approximately half of that time.
- Primary visitors to the Young Cemetery are people visiting individual gravesites or exploring old New Hampshire cemeteries.

Overall Visual Impact: Medium

The presence of the NPT structures and conductors at this location will have a medium overall visual impact to travelers on the Moose Path Trail Scenic Byway and Connecticut River Scenic Byway (combined). The structures represent a relatively minor change to the overall experience of the Byway and should not result in a substantial change in the way people now use or enjoy the Byway. The presence of the transmission structures should not result in a substantial change in the way people now use or enjoy visiting the Young Cemetery.

- The new transmission structures and conductors silhouetted against the ridgeline will be co-dominant elements in a largely natural-appearing landscape. Their presence will be seen for a relatively short period by northbound motorists; southbound traffic will not be aware of their presence. The transmission corridor will be seen in portions of the cemetery by visitors looking beyond the immediate foreground (i.e., tombstones).
- The new transmission structures will not change the inherent character of the scenic resource as a whole.
- Locating the NPT line underground will reduce the possible impact of the transmission line on the Byway and the Young Cemetery.
- The transmission structures and cleared corridor will be visible within a small portion of the cemetery, primarily at the western edge for visitors looking away from the tombstones.
- The impact will be greater during leaf-off conditions, when the corridor clearing, transmission structures, and transition station will be visible through the deciduous trees that are part of the vegetation line along the highway and the cemetery, creating a contrast in color, line, and form.

See the Subarea 1 Impact Summary for an assessment of the visual impact on the Byways as a whole.

Clarksville Works Cited:

NH Department of Transportation Scenic and Cultural Byways Website. http://www.nh.gov/dot/programs/scbp/tours/moosepath.htm

NH Department of Transportation. Moose Path Trail Details Brochure. PDF.

Connecticut River Byway Official Website. http://ctriverbyways.org/

North Country Council. North Country Scenic Byways Council. Moose Path Trail Corridor Management Plan. Draft for Public Hearing: August 25, 2015.

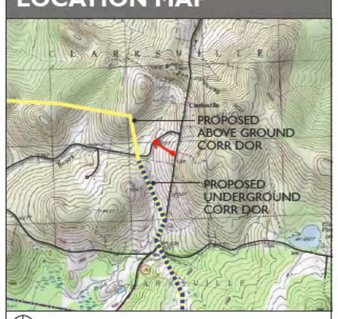
MOOSE PATH / CONNECTICUT RIVER SCENIC BYWAYS (RT. 145) - NORTH OF YOUNG CEMETERY, CLARKSVILLE

EXISTING CONDITIONS: PANORAMA

Typical west facing view from within Young Cemetery

Northwest view facing photo location at edge of Young Cemetery

LOCATION MAP



TECHNICAL INFORMATION

		EXISTING	PROPOSED
TRANSMISSION LINE	115-kV structure type	N/A	N/A
	Height range of visible 115-kV structures	N/A	N/A
	320-kV structure type	N/A	Weathering Steel Monopole
	Height range of visible 320-kV structures	N/A	80 - 95 feet
	Right-of-way width	N/A	120 feet

PHOTOGRAPH	**Date and time:** 9/30/14 at 12:30pm	**Location:** 45.011254° N, -71.416031° W	**Viewing Direction:** West
	Distance to visible structures: 0.38 to 1.01 miles	**Number of transmission structures visible in the photosimulation:** 5	
	Camera Focal length (50mm equivalent): 35mm	**Camera Make/Model:** Nikon D7100	**Photo Source:** TJD&A

NOTES

GENERAL NOTES

Simulation is based upon preliminary design plans. Structure design and location will be finalized during the detail design and permitting process.

PHOTOSIMULATION PRODUCTION

By Terrence J. DeWan & Associates

VIEW DESCRIPTION

View is from the northwest corner of Young Cemetery on the west side of Route 145.

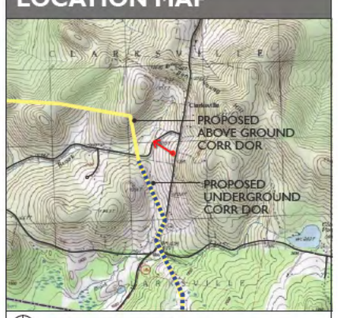
MOOSE PATH / CONNECTICUT RIVER SCENIC BYWAYS (RT. 145) - NORTH OF YOUNG CEMETERY, CLARKSVILLE

PHOTOSIMULATION: PANORAMA

Typical west facing view from within Young Cemetery.

Northwest view facing photo location at edge of Young Cemetery.

LOCATION MAP



TECHNICAL INFORMATION

		EXISTING	PROPOSED
TRANSMISSION LINE	115-kV structure type	N/A	N/A
	Height range of visible 115-kV structures	N/A	N/A
	320-kV structure type	N/A	Weathering Steel Monopole
	Height range of visible 320-kV structures	N/A	80 - 95 feet
	Right-of-way width	N/A	120 feet

PHOTOGRAPH	**Date and time:** 9/30/14 at 12:30pm	**Location:** 45.011254° N, -71.416031° W	**Viewing Direction:** West
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View is from the northwest corner of Young Cemetery on the west side of Route 145.

MOOSE PATH / CONNECTICUT RIVER SCENIC BYWAYS (RT. 145) - NORTH OF YOUNG CEMETERY, CLARKSVILLE

EXISTING CONDITIONS: NORMAL VIEW

VIEW NOTE

When printed on 11x17" paper, viewer should hold this image approximately 17" from eye to replicate actual view.

MOOSE PATH / CONNECTICUT RIVER SCENIC BYWAYS (RT. 145) - NORTH OF YOUNG CEMETERY, CLARKSVILLE

PHOTOSIMULATION: NORMAL VIEW

VIEW NOTE

When printed on 11x17" paper, viewer should hold this image approximately 17" from eye to replicate actual view.

MOOSE PATH / CONNECTICUT RIVER SCENIC BYWAYS (RT. 145) - UNDERGROUND ROAD CROSSING, CLARKSVILLE

EXISTING CONDITIONS: PANORAMA

LOCATION MAP

TECHNICAL INFORMATION

		EXISTING	PROPOSED
TRANSMISSION LINE	115-kV structure type	N/A	N/A
	Height range of visible 115-kV structures	N/A	N/A
	320-kV structure type	N/A	Weathering Steel Monopole
	Height range of visible 320-kV structures	N/A	80 -90 feet
	Right-of-way width	N/A	120 feet (above ground) / 25 feet (below ground)

PHOTOGRAPH	**Date and time:** 9/30/14 at 12:05am	**Location:** 45.003389° N, -71.417429° W	**Viewing Direction:** North
	Distance to visible structures: 0.48 mi to 0.96 mi	**Number of transmission structures visible in the photosimulation:** 3 + transition station	
	Camera Focal length (50mm equivalent): 35mm	**Camera Make/Model:** Nikon D7100	**Photo Source:** TJD&A

NOTES

GENERAL NOTES

Simulation is based upon preliminary design plans. Structure design and location will be finalized during the detail design and permitting process.

PHOTOSIMULATION PRODUCTION

By Terrence J. DeWan & Associates

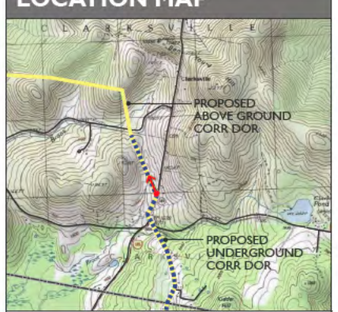
VIEW DESCRIPTION

View is from the west shoulder of Route 145 at the location where the underground corridor meets the roadway.

MOOSE PATH / CONNECTICUT RIVER SCENIC BYWAYS (RT. 145) - UNDERGROUND ROAD CROSSING, CLARKSVILLE

PHOTOSIMULATION: PANORAMA

LOCATION MAP



TECHNICAL INFORMATION

		EXISTING	PROPOSED
TRANSMISSION LINE	115-kV structure type	N/A	N/A
	Height range of visible 115-kV structures	N/A	N/A
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By Terrence J. DeWan & Associates.

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View is from the west shoulder of Route 145 at the location where the underground corridor meets the roadway.

MOOSE PATH / CONNECTICUT RIVER SCENIC BYWAYS (RT. 145) - UNDERGROUND ROAD CROSSING, CLARKSVILLE

EXISTING CONDITIONS: NORMAL VIEW

VIEW NOTE

When printed on 11x17" paper, viewer should hold this image approximately 17" from eye to replicate actual view.

MOOSE PATH / CONNECTICUT RIVER SCENIC BYWAYS (RT. 145) - UNDERGROUND ROAD CROSSING, CLARKSVILLE

PHOTOSIMULATION: NORMAL VIEW

VIEW NOTE

When printed on 11x17" paper, viewer should hold this image approximately 17" from eye to replicate actual view.

STEWARTSTOWN DESCRIPTION

Land Area: 46.5 square miles (NHES)

Inland Water Area: 0.4 square mile (NHES)

Population: 821 residents (NHES)

Population Density: 17.6 persons per square mile (NHES)

Town Location: Stewartstown is located in Coos County, and is positioned between Colebrook, Dixville and Clarksville in New Hampshire and Canaan in Vermont.

Study Area: The Study area is located through the central part of Stewartstown. The northeast and southwest corners are the only areas in town not located in the study area. The Study Area covers 71.65% of the total land area (21,508 acres).

Physical Characteristics

The western boundary of Stewartstown is largely defined by the Connecticut River. Stewartstown lies at the southern end of the Connecticut Lakes Headwaters conservation land. The topography in town is hilly, with, steep gradients along Dearth Hill, Collins Hill, Holden Hill, Sugar Hill, Mudget Mountain, Lovering Mountain and Stewartstown Hollow. Protected land is predominant in the east, with small pockets elsewhere in town. The town master plan lists the summit of Bronson Hill, at 2,078 feet above sea level, as the highest point in town.

Demographics

Stewartstown contained approximately 821 residents in 2014, a number which has remained relatively unchanged since 1970. The median age of residents is approximately 51 years of age. Of the residents 25 years of age or older, approximately 10% have attained their Bachelor's degree or higher (NHES).

Cultural Development Patterns

Stewartstown was originally chartered as a territory by Governor John Wentworth and incorporated as the town of Stuart in 1795. The town was then reincorporated as Stewartstown to dispel legal concerns stemming from the 1795 charter. Natural resources are a large factor in the economic and regional planning for this area, evidenced in Stewartstown by the dominance of outdoor recreation opportunities listed as attractions. Approximately 74% of development in Stewartstown is residential. Of the residential development patterns, approximately 76% is single family housing (NHES).

Land Use Planning

The town of Stewartstown does not have a master plan, town website, or zoning. The North Country Council is a resource for community development and land use planning for Stewartsville.

Proposed Transmission Corridor

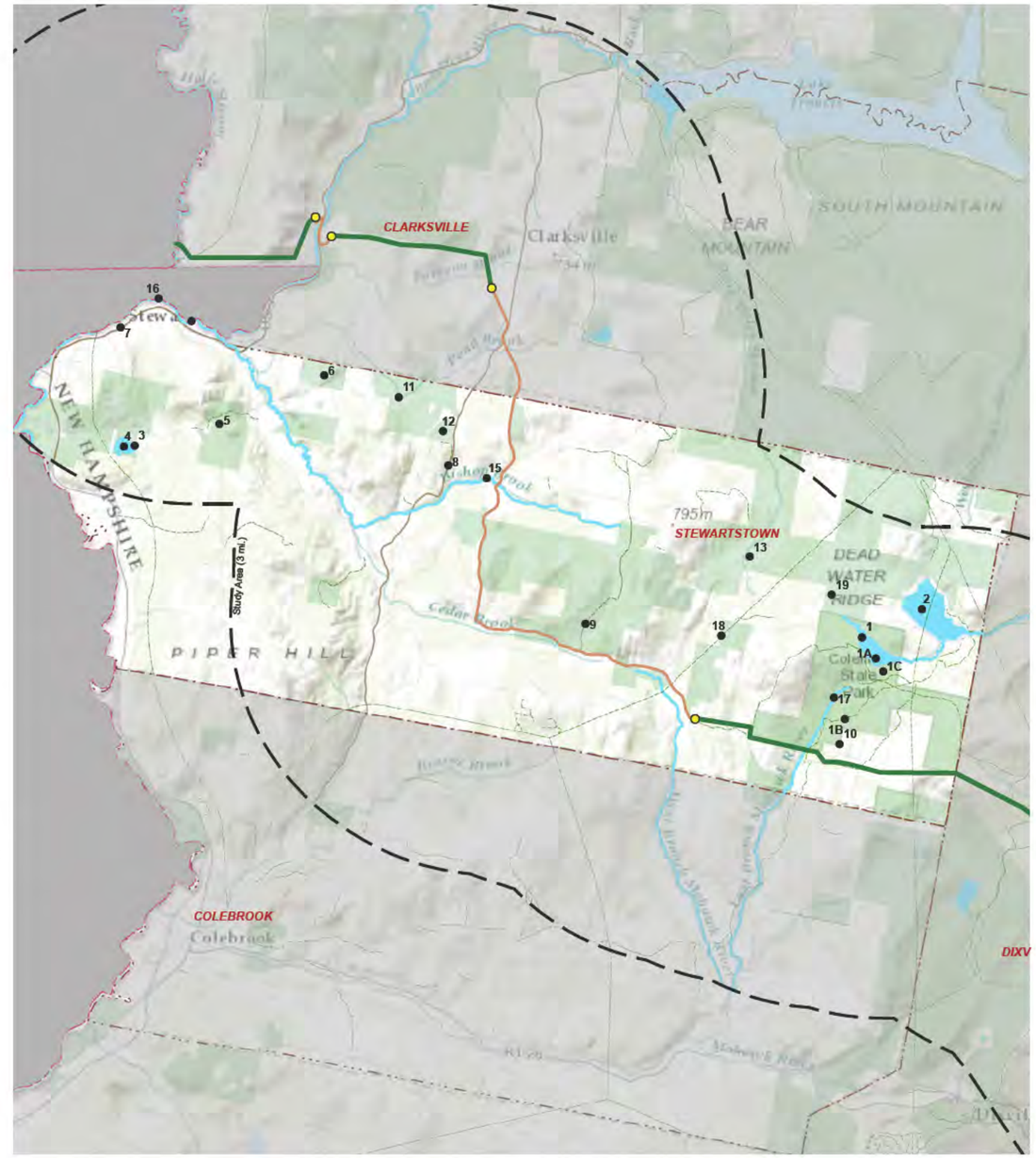
Physical Features: The 320-kV transmission line runs underground from the northern town boundary for 6.1 miles along existing state and municipal roads. The transition to above ground line occurs approximately 0.7 mile from the southern town boundary. The above ground line will be located in a 120-foot wide corridor and continue east-west for approximately 3.5 miles in new rights-of-way. Proposed overhead structures will range in height from 70 feet to 120 feet. With the exception of one 120 foot structure, all other structures are 95 feet or less in height.

Surrounding Topography: The area adjacent to the transmission corridor is characterized by the hills. Steep slopes exist primarily north of Bear Rock Road, adjacent to the existing road right-of-way.

Vegetation: Vegetation adjacent to the transmission corridor is a mix of northern hardwood-conifer, lowland spruce-fir, high elevation spruce-fir, grassland, and marshes (WAP).

Adjacent Land Use: Land use along the existing Old County Road, North Hill Road, and Bear Rock Road transportation corridor, which will be shared by the transmission line, is primarily low density residential, agriculture, with some abutting conservation parcels. The existing road corridors intersect a club snowmobile trail just north of E. Road. Creampoke Road intersects the corridor and is used as an ATV trail. North Hill Road and Bear Rock Road are utilized as ATV corridors. Snowmobile trail 21 intersects the corridor along Bear Rock Road.

Land use along the approximately 1.9 miles of overhead transmission line located in the southwestern portion of town as it crosses into Dixville includes conservation, agriculture, low density residential and some local roads. The corridor intersects the NH snowmobile trail 18/5. A trail located along Rusty's Road is used for the Ride the Wilds ATV trail, as well as those who snowmobile.



PROPOSED TRANSMISSION CORRIDOR
UNDERGROUND TRANSMISSION CORRIDOR
TRANSITION STATION
SUBSTATION
OTHER TRANSMISSION LINE
SCENIC RESOURCE (SEE SCENIC RESOURCE TABLE)
CONSERVATION AREA
WATER RESOURCE
SCENIC BYWAY
1 MILE

STEWARTSTOWN SCENIC RESOURCES

TABLE 1-3: STEWARTSTOWN SCENIC RESOURCES

#	SCENIC RESOURCE	DESCRIPTION	SOURCE	OWNERSHIP	DISTANCE TO CORRIDOR	CULTURAL VALUE	POSSIBLE VISIBILITY	VISUAL QUALITY	SCENIC SIGNIFICANCE
1	Coleman State Park	State Park.	1	NH Dept of Recreation & Economic Development	< 0.1 mi	HIGH	YES	MEDIUM	MEDIUM-HIGH
1A	Little Diamond Pond	Publicly accessible waterbody (ramp). NH Designated Trout Pond.	2 / 1 / 27	NH Dept of Recreation & Economic Development	1.3 mi	HIGH	YES	MEDIUM	MEDIUM-HIGH
1B	Visitor Center and Recreation Building	Buildings are located at the at entrance to Coleman State Park on Diamond Pond Road.	1	NH Dept of Recreation & Economic Development	1.3 mi	HIGH	YES	LOW	MEDIUM
1C	Coleman State Park Campground	State Park Campground open seasonally.	1	NH Dept of Recreation & Economic Development	1.3 mi	HIGH	YES	LOW	MEDIUM
2	Big Diamond Pond	Publicly accessible waterbody (ramp).	2	State	1.7 mi	MEDIUM	YES	MEDIUM	MEDIUM
3	Kribstock-Fowler Preserve	Conservation land located around Back Pond.	7	Society for the Protection of NH Forests	2.4 mi	MEDIUM	NO		
4	Back Pond	Publicly accessible waterbody (ramp). NH Designated Trout Pond.	2 / 27	State	2.4 mi	MEDIUM	NO		
5	Coats Conservation Easement	Conservation easement.	31	USDA Farm Service Agency & NH Fish & Game Dept.	2.8 mi	LOW	NO		
6	Coos County Farm	3 tracts of conservation land.	31	Private (conservation easement)	2.0 mi	LOW	YES		
7	Connecticut River Scenic Byway	US Rt 3 / NH Rt 145. National Scenic Byway. VIA in Pittsburg.	8	NH Dept. of Transportation	Crosses Corridor	MEDIUM	YES	MEDIUM	MEDIUM
8	Moose Path Trail Scenic Byway	US Rt 3 / NH Rt 145. State Scenic Byway. VIA in Pittsburg and Clarksville.	8	NH Dept. of Transportation	1.3 mi	MEDIUM	YES	MEDIUM	MEDIUM
9	Cohos Trail	162-mile trail in Cohos County, managed by Cohos Trail Association. VIA in Subarea 1 Impact Summary.	28	Various Owners	Crosses Corridor	MEDIUM	YES	MEDIUM	MEDIUM
10	Diamond Pond Road	Access road to Coleman State Park. Included in Cohos Trail.	28	Town Road	Crosses corridor	LOW	YES	HIGH	MEDIUM
11	Hurlbert Swamp	Publicly accessible conservation land. Northern White Cedar swamp with trail and boardwalk.	7	Society for the Protection of NH Forests	1 mi	LOW	YES		
12	NRCS GRP Hodge Conservation Easement	Conservation Easement held by U.S. Natural Resources Conservation Service as part of Grasslands Reserve Program.	15	U.S. Natural Resources Conservation Service (easement holder)	1.3 mi	LOW	YES		
13	Connecticut Lakes Headwaters	Publicly accessible conservation easement.	6	NH Dept of Recreation & Economic Development (easement holder)	1.3 mi	LOW	NO		
14	Connecticut River	Designated in the NH Rivers Management Program. VIA in Pittsburg.	2 / 4 / 19	NH Dept. of Environmental Services	Crosses corridor	MEDIUM	YES	MEDIUM	MEDIUM
15	Bishop Brook	River not designated in NH Rivers Management Program.	30	State	2.3 mi	LOW	NO		
16	Halls Stream	River not designated in NH Rivers Management Program.	30	State	0.6 mi	LOW	YES		
17	East Branch Mohawk River	River not designated in NH Rivers Management Program.	30	State	Crosses Corridor	LOW	YES		
18	State ATV Trail	State-wide ATV trail.	17	Various	Crosses corridor	LOW	YES		
19	State Snowmobile Trail 20, 128	State-wide snowmobile trail.	3	Various	Both routes cross corridor	LOW	YES		

YELLOW ROWS: Resources described in this town section with possible VIEWS of the corridor and at least a MEDIUM Cultural Value Rating

STATE/REGIONAL SOURCES:

(1) NH State Park Listing: www.nhstateparks.org/

(2) New Hampshire Fish and Game Department Table of Public-access boating and fishing sites in New Hampshire: http://www.wildlife.state.nh.us/Outdoor_Recreation/access_sites_table.htm

(3) New Hampshire Snowmobile Association Map, 2014

(4) Map of Designated Rivers in the New Hampshire River Protection Program, Department of Environmental Services: http://des.nh.gov/organization/divisions/water/wmb/rivers/desigriv.htm

(6) State Lands Administered by State of NH Department of Resources and Economic Development and the NH Fish and Game Department, July 2007

(7) Society for the Protection of NH Forests – List of Properties, January 2013

(8) New Hampshire DOT Scenic Byway Map, October 2008. http://www.nh.gov/dot/programs/scbp/index.htm

(15) USDA Grassland Reserves Program (GRP): http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/easements/grassland/

(17) State of New Hampshire OHRV Trails Map by Bureau of Trails New Hampshire: http://www.nhstateparks.org/uploads/pdf/ATV-Trail-Bike_Trails-Map.pdf

(19) New Hampshire Heritage Trail Program: http://www.nhstateparks.org/explore/bureau-of-trails/nh-heritage-trail-program.aspx

(27) Designated Trout Ponds in New Hampshire: http://www.wildlife.state.nh.us/Fishing/trout_ponds.html

(28) Cohos Trail Website:http://www.cohostrail.org/farnorth.html and Cohos Trail Map of Headwaters Region

(30) Official List of Public Waters by New Hampshire Department of Environmental Services Water Division, January 17, 2014

(31) Conservation/Public Lands. Data available from Earth Systems Research Center, UNH. Source: Society for the Protection of NH Forests and other land trusts. April 2013.

COHOS TRAIL (9) / DIAMOND POND ROAD (10)

STEWARTSTOWN

OVERALL VISUAL IMPACT **LOW-MEDIUM**

Diamond Pond Road and Heath Road (to the west and just south of Coleman State Park) are part of the on and off-road network that comprises the Cohos Trail in northern New Hampshire. The Cohos Trail extends for 162 miles in Cohos County from the White Mountains and Crawford Notch in the south to the Boundary Mountains near the Canadian border in Pittsburg, NH. The trail is being developed under the auspices of the Cohos Trail Association, a largely volunteer organization. While much of the trail is located in forestland, there are places where it follows existing roads. According to the Cohos Trail website, the trail is for "those who are serious trekkers, for those with experience and plenty of gear and supplies."

Diamond Pond Road is also the main access into Coleman State Park in Stewartstown. Land use along the road is primarily rural residential and forestland, with occasional fields that open up views to the west. The landscape visible from the road is a broad patchwork of forestland, blocks of fields, hedgerows, and occasional farms and homes, set against a panorama of rolling midground hills and larger mountains in the background. Views are intermittent along the road. The image used in the Diamond Pond Road Photosimulation is taken from one of the largest openings, approximately 600 feet in width, located 0.75 mile south of the point where the NPT line will cross the road.

The proposed transmission line will cross Diamond Pond Road at a wooded location, which will limit visibility of the transmission structures to just within the right-of-way. The line will cross the road in a relatively straight section; conductors will be visible above the road for up to 0.5 mile for northbound hikers and motorists and 0.3 mile for southbound travelers. The NPT conductors will be seen in conjunction with a set of existing distribution lines that are set against the edge of the woods on the east side of the road.

The Cohos Trail crosses the transmission corridor at three individual locations. This description and analysis focuses on the visibility from the on-road section of the Cohos Trail on Diamond Pond Road. See the Subarea 1 Impact Summary for an overall visual impact assessment.

Proposed Transmission Corridor

The 320-kV DC transmission line will be located in a new transmission corridor on weathering steel monopole structures that will range in height from 75 to 90 feet. The transmission corridor will be visible in two primary locations along the roadway.

- **Corridor Crossing.** Within the corridor right-of-way, hikers and motorists will see the 120-foot wide clearing, one structure to the west and six structures to the east crossing over Sugar Hill. This is a typical road crossing with forested vegetation on both sides of the corridor.
- **South of the Corridor.** The corridor will appear intermittently from Diamond Pond Road for a distance of approximately 2 miles. The visible section of the corridor runs east-west on the side of a hill adjacent to a prominent field. The number of structures visible at any one time varies based on the location of the viewer. Recent harvesting operations on the hillside have created distinct patterns and lines in the landscape. The transmission corridor will follow the edge between a hardwood stand and a softwood forest, resulting in a new line that will appear to be following the established grain of the landscape. At most, four structures and the conductors will be visible in the midground. The map on the following page shows areas of visibility, intermittent visibility, and no visibility along the 2 mile section of road.

From the viewpoint used for the Diamond Pond Road Photosimulation, the furthest structure at the height of land will appear above the tree line at a distance of approximately 1.0 mile; the remaining visible structures will be seen against a wooded backdrop. The corridor clearing will be visible as a break in the tree line and the cleared ground will be visible from a few locations along the road.

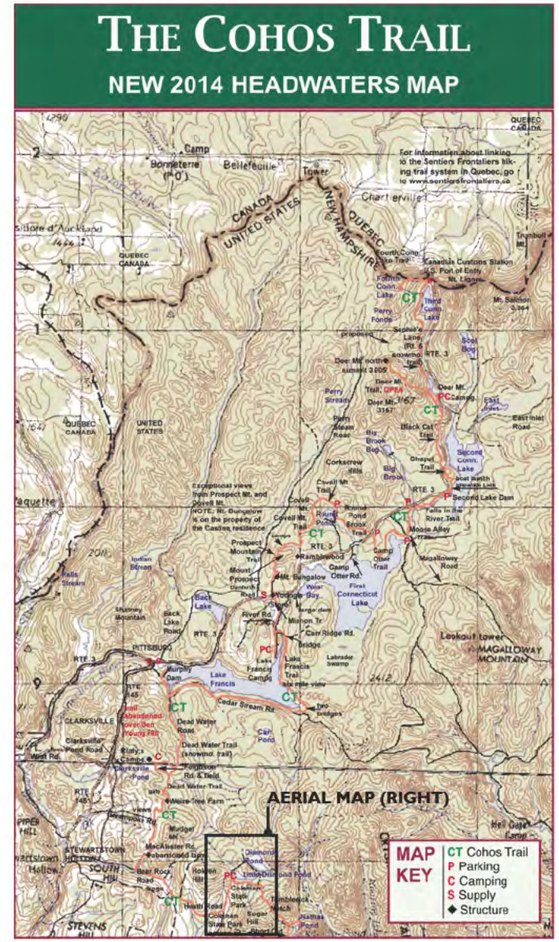
Cultural Value: Low

A short section of the road (and the intersecting Heath Road) is an on-road component of the state-wide Cohos Trail. Diamond Pond Road is not designated as a scenic road, but does provide panoramic views of the characteristic landscape of northern New Hampshire.

Visual Quality: High

Occasional openings on the west side of the road afford panoramic view of the rolling New Hampshire countryside. The landscape is composed of forested hills, farm houses, and agricultural clearings. The expansive topography creates a layered effect, increasing the visual quality of this view.

Scenic Significance: Medium



Source: http://www.cohostrail.org/

PHOTOS 1 -3: Characteristic views along Diamond Pond Road. There will be no views in this direction from these vantage points.

PHOTO 1

PHOTO 2

PHOTO 3

COHOS TRAIL (9) / DIAMOND POND ROAD (10)

STEWARTSTOWN

VISUAL IMPACT ASSESSMENT

Visual Effect: Medium

- The proposed transmission line will be visible for a total of approximately 0.8 mile along Diamond Pond Road.
- The line formed by the transmission clearing will echo other distinctive lines in the landscape. The corridor will be seen as an edge between a prominent stand of hardwoods on a largely softwood hillside.
- Only one of the proposed monopole structures will be visible above the skyline; at a distance of approximately 1 mile it will appear as a relatively small object in an expansive landscape setting.
- Leaf-off conditions will allow more of the transmission line to be visible, as some areas along the roadway are blocked by deciduous roadside vegetation.

Mitigation

- Using weathering steel structures to minimize contrast in color.
- Using monopole structures to minimize contrast in form and line.
- Siting the corridor on the edge of a hardwood stand and a softwood forest, resulting in a new line that will appear to be following the established grain of the landscape.
- Siting the corridor crossing in forestland which limits visibility to the immediate road crossing.

User Groups: Occasional hikers on the Cohos Trail, local residents, recreational users on their way to Coleman State Park.

User Expectation: Low

- Users are accustomed to seeing human development along the road in the form of; a local distribution line, homes and garages, and commercial properties. Some level of cultural modification is expected.
- There is no public documentation classifying Diamond Pond as a scenic road.

Extent, Nature, and Duration of Public Use: Low

- Long distance hikers on the Cohos Trail will have an extended view of the trail. Trail use is very light.
- Travelers heading north into Coleman State Park or Big Diamond Pond will see the transmission corridor intermittently over the course of 1.4 minutes. Southbound motorists will only see the corridor where it crosses Diamond Pond Road.

Overall Visual Impact: Low-Medium

- The new transmission line will have a low-medium overall visual impact on the views from Diamond Pond Road. The NPT project should not result in a change in the way people now use or enjoy the Cohos Trail or Diamond Pond Road.
- The use of weathering steel monopole structures will reduce contrast in color, line, and form with the surrounding landscape.
- The NPT transmission structures and conductors will be noticeable, but they will not change the inherent character of the landscape.
- The presence of the structures should not result in a substantial change in the way people now use the roadway or Cohos Trail.
- The structures will not be a dominant feature in the landscape.

See the Subarea 1 Impact Summary for an assessment of the visual impact on the Cohos Trail as a whole.

PHOTO 5: View facing north at location of proposed transmission corridor crossing on Diamond Pond Road.

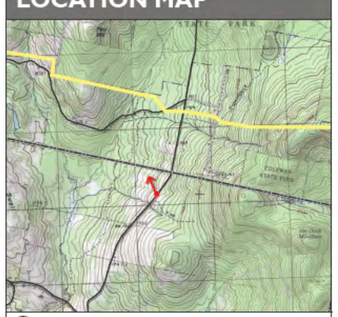
PHOTO 6: View facing north on Diamond Pond Road approximately 1.2 miles from the Coleman State Park Visitor Center. The NPT project is located approximately 150 feet south of this location.

PHOTO 4: Panoramic view facing west from Diamond Pond Road. See photosimulation on following pages.

DIAMOND POND ROAD, COLEBROOK

EXISTING CONDITIONS: PANORAMA

LOCATION MAP



1 MILE

TECHNICAL INFORMATION

		EXISTING	PROPOSED
TRANSMISSION LINE	**115-kV structure type**	N/A	N/A
	Height range of visible 115-kV structures	N/A	N/A
	320-kV structure type	N/A	Weathering Steel Monopole
	Height range of visible 320-kV structures	N/A	75 - 90 feet
	Right-of-way width	N/A	120 feet

PHOTOGRAPH	**Date and time:** 10/11/12 at 10:50am	**Location:** 44.916048° N, -71.340291° W	**Viewing Direction:** Northwest
	Distance to visible structures: 0.91 to 1.15 miles	**Number of transmission structures visible in the photosimulation:** 5	
	Camera Focal length (50mm equivalent): 35mm	**Camera Make/Model:** Nikon D7100	**Photo Source:** TJD&A

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PHOTOSIMULATION PRODUCTION

By Terrence J. DeWan & Associates

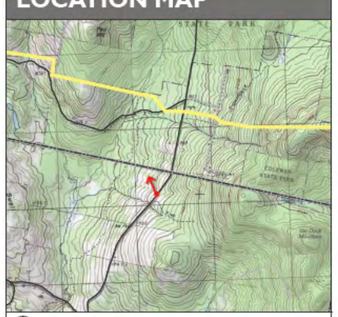
VIEW DESCRIPTION

View is from west side of Diamond Pond Road. View is seen from northbound lane heading to Coleman State Park. Diamond Pond Road is included in the on-road section of the Cohos Trail.

DIAMOND POND ROAD, COLEBROOK

PHOTOSIMULATION: PANORAMA

LOCATION MAP



1 MILE

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TRANSMISSION LINE	**115-kV structure type**	N/A	N/A
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By Terrence J. DeWan & Associates.

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View is from west side of Diamond Pond Road. View is seen from northbound lane heading to Coleman State Park. Diamond Pond Road is included in the on-road section of the Cohos Trail.

DIAMOND POND ROAD, COLEBROOK

EXISTING CONDITIONS: NORMAL VIEW

VIEW NOTE

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DIAMOND POND ROAD, COLEBROOK

PHOTOSIMULATION: NORMAL VIEW

VIEW NOTE

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COLEMAN STATE PARK (1)

STEWARTSTOWN

OVERALL VISUAL IMPACT **MEDIUM**

Coleman State Park is located in Stewartstown, 12 miles east of Colebrook, in a relatively remote part of the state. Most of the park's 1,530.5 acres are wooded. Diamond Pond Road provides the only vehicular access to the park (see description of Diamond Pond Road). It passes through the western part of the park and is sited a few feet from the western end of Little Diamond Pond in the park before continuing to the northeast to Big Diamond Pond, which is outside the park boundary.

Activities within the State Park include camping (24 primitive sites), fishing on Little Diamond Pond and nearby streams, hiking, picnicking, snowmobiling, cross country skiing, canoeing, hunting, and ATV riding. Park facilities include a Visitor Center, recreation building, boat launch on Little Diamond Pond, picnic area, and campground with playground and dump station. Boating on the pond is permitted with a 10mph speed restriction. Developed trails within the park connect to over 1,000 miles of ATV and snowmobile trails within Coos County, making this a popular destination for riders in northern NH.

Little Diamond Pond (60 acres) is relatively shallow, with an average depth of 5 feet and a maximum depth of 15 feet. The pond is stocked with brook trout and rainbow trout by the New Hampshire Fish and Game Department (NHF&G). Little Diamond is a Designated Trout Pond, one of 152 lakes and ponds that NHF&G manages specifically for trout. These are fly-fishing-only waterbodies (i.e., ice fishing is not allowed), and offer anglers the opportunity to fish in some of NH's most scenic surroundings, according to the NHF&G website.

Proposed Transmission Corridor

The 320-kV DC transmission line will be located in a new 120-foot wide corridor on weathering steel monopole structures that will range in height from 70 to 90 feet as it crosses Sugar Hill south of the park boundary. Sugar Hill has been logged over the past two decades; the existing tree cover is primarily second growth and has not attained mature height. This is a consideration in determining relative visibility of the proposed structures.

The NPT corridor will be visible from two areas within the park: a) on Little Diamond Pond, and b) in the vicinity of the Visitor Center and campground. Two photosimulations are provided: one from Little Diamond Pond and a second from Diamond Pond Road near the recreation building at the entrance to the park.

Cultural Value: High

State park noted in part for its scenic qualities; pond with public access.

Visual Quality: Medium

Little Diamond Pond is the focal point of the park, located near the entrance and within easy walking distance of the visitor center and campground. A parking area for 30± vehicles has been established on the southwestern side of the pond near the boat ramp for anglers, boaters, snowmobilers, and ATV riders. Sugar Hill, outside the park boundary, is one of a series of 400 to 700-foot high hills that surround the pond.

Scenic Significance: Medium-High

PHOTO 1: View facing west from Little Diamond Pond boat launch in Coleman State Park.

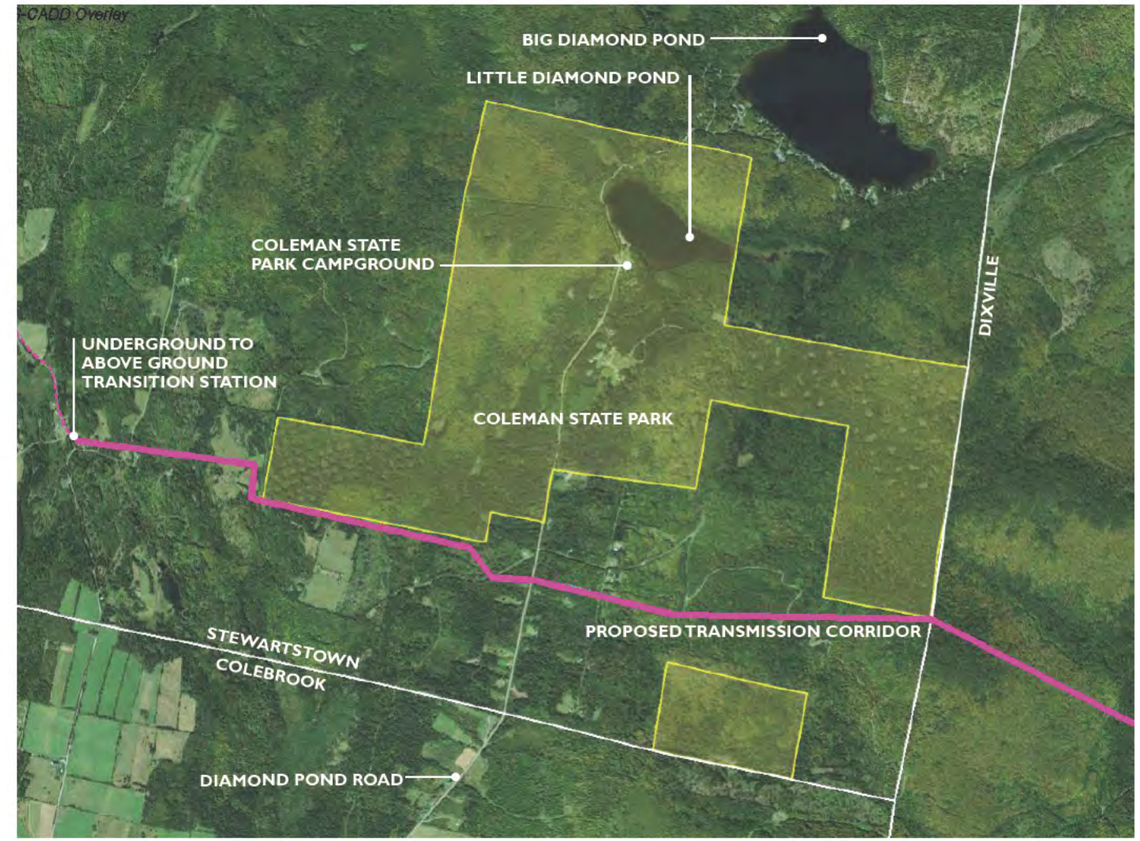


PHOTO 2: Little Diamond Pond Boat Launch signage, Coleman State Park

PHOTO 3: Coleman State Park Visitor Center and Campground entrance. View facing east from Diamond Pond Road.

COLEMAN STATE PARK (I)

STEWARTSTOWN

VISUAL IMPACT ASSESSMENT

Visual Effects:

Little Diamond Pond: Medium

- Up to 9 transmission structures and conductors will be visible from Little Diamond Pond as the transmission line crosses over Sugar Hill at distances of 1.7 to 2.1 miles to the south (see the Little Diamond Pond Photosimulation).
- The transmission line will not be visible from the boat launch, the parking area, or the picnic area on the south side of the pond, which is assumed to be the highest use area around the pond.
- The corridor clearing will not be visible from the pond.

Visitor Center and Campground: Low

- Transmission structures and conductors will be visible from the lightly wooded and open areas around the entrance, recreation building, Visitor Center, and campground, where it will be 1.4 to 1.9 miles to the southeast as it crosses over Sugar Hill. Views of the structures and conductors will be partially screened by large deciduous and evergreen trees within the park, especially during leaf-on seasons.
- The structures will be much less visible from the entrance area due to viewer position (see Coleman State Park Entrance Photosimulation).
- The corridor clearing will not be visible from the entrance, Visitor Center, or campground.

Mitigation

- Using weathering steel transmission structures to reduce contrasts in color and form.

User Groups: Anglers and boaters on Little Diamond Pond during summer months; campers, hikers, and ATV riders; snowmobilers during winter months.

User Expectation: Medium

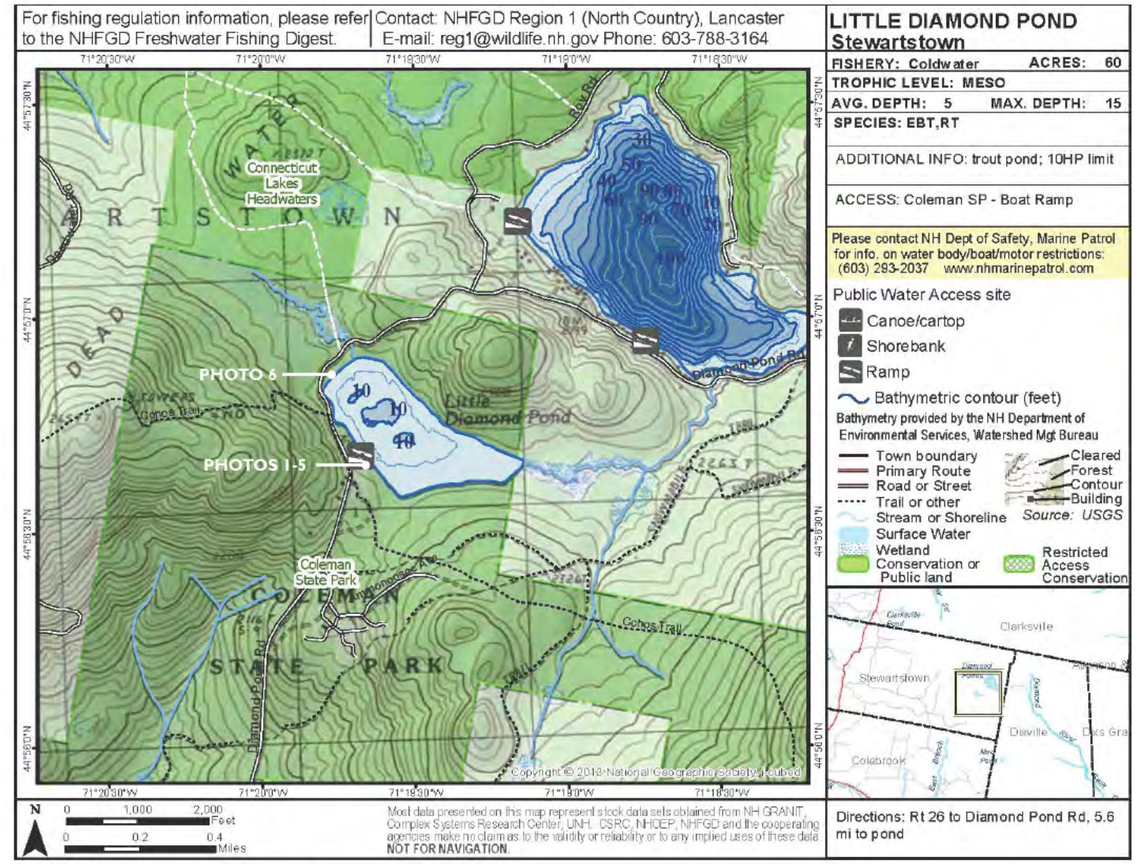
- State park visitors will have a heightened expectation of visual quality, modified to a certain extent by the character of the landscape along Diamond Pond Road and the proximity of the road to Little Diamond Pond.
- The primary public users of the pond are anglers, whose motivation is the quality of the fishing.

Extent, Nature, and Duration of Public Use: Medium

- The park is open throughout the year. Snowmobiling and cross-country skiing are very popular winter activities.
- The parking area and trails are well maintained and marked with good signage. The Visitor Center and recreation building are focal points for information and activities within the park.
- A major attraction is the proximity to over 1,000 miles of trails in Coos County, which attracts snowmobilers and ATV riders throughout the year.
- The primary users on the pond who will have a view of the transmission line are anglers and boaters. While this group most likely enjoys the current scenic quality of the resource, it is likely that their primary motivation is the quality of the fishing.

Overall Visual Impact: Medium

- The construction of the NPT project will have a medium overall visual impact on a limited area within Coleman State Park. The view of the structures and conductors at a distance of between 1.4 and 2.1 miles should not result in a substantial change in the way people now use or enjoy Little Diamond Pond or the facilities within the Park.
- The use of weathering steel monopole structures will reduce contrast in color and form with the surrounding landscape.
- The effect of the transmission line will be felt in a relatively small but visible part of the state park.
- The presence of the transmission structures and conductors will not change the inherent character of the State Park.
- ATV and snowmobile riders may see the transmission corridor as a positive addition to the landscape, representing potentially more riding opportunities to add to the 1,000 miles of existing trails in Coos County.



Official NHDGD Map of Little Diamond Pond

PHOTO 4: Little Diamond Pond Boat Launch on southwest side of the lake. The kiosk in the adjacent photograph is located behind viewer.

PHOTO 5: Kiosk at Little Diamond Pond Boat Launch with Park Visitor Center in background.

PHOTO 6: Break in the vegetation on the undeveloped northwest shore of Little Diamond Pond.

LITTLE DIAMOND POND - COLEMAN STATE PARK, STEWARTSTOWN

EXISTING CONDITIONS: PANORAMA

Informal water access on west shore of Little Diamond Pond

LOCATION MAP

1 MILE

TECHNICAL INFORMATION

		EXISTING	PROPOSED
TRANSMISSION LINE	115-kV structure type	N/A	N/A
	Height range of visible 115-kV structures	N/A	N/A
	320-kV structure type	N/A	Weathering Steel Monopole
	Height range of visible 320-kV structures	N/A	80 - 130 feet
	Right-of-way width	N/A	120 feet

PHOTOGRAPH	**Date and time:** 9/30/14 at 3:30pm	**Location:** 44.948191° N, -71.328943° W	**Viewing Direction:** Southeast
	Distance to visible structures: 1.69 to 2.12 mi	**Number of transmission structures visible in the photosimulation:** 8	
	Camera Focal length (50mm equivalent): 35mm	**Camera Make/Model:** Nikon D7100	**Photo Source:** TJD&A

NOTES

GENERAL NOTES

Simulation is based upon preliminary design plans. Structure design and location will be finalized during the detail design and permitting process.

PHOTOSIMULATION PRODUCTION

By Terrence J. DeWan & Associates

VIEW DESCRIPTION

View is from the west shoreline of Little Diamond Pond in Coleman State Park. Located at informal water access point connecting the pond to Diamond Pond Road. The formal boat launch area is visible on opposite shoreline.

LITTLE DIAMOND POND - COLEMAN STATE PARK, STEWARTSTOWN

PHOTOSIMULATION: PANORAMA

Informal water access on west shore of Little Diamond Pond

LOCATION MAP

1 MILE

TECHNICAL INFORMATION

		EXISTING	PROPOSED
TRANSMISSION LINE	115-kV structure type	N/A	N/A
	Height range of visible 115-kV structures	N/A	N/A
	320-kV structure type	N/A	Weathering Steel Monopole
	Height range of visible 320-kV structures	N/A	80 - 130 feet
	Right-of-way width	N/A	120 feet

PHOTOGRAPH	**Date and time:** 9/30/14 at 3:30pm	**Location:** 44.948191° N, -71.328943° W	**Viewing Direction:** Southeast
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PHOTOSIMULATION PRODUCTION

By Terrence J. DeWan & Associates.

VIEW DESCRIPTION

View is from the west shoreline of Little Diamond Pond in Coleman State Park. Located at informal water access point connecting the pond to Diamond Pond Road. The formal boat launch area is visible on opposite shoreline.

LITTLE DIAMOND POND - COLEMAN STATE PARK, STEWARTSTOWN

EXISTING CONDITIONS: NORMAL VIEW

VIEW NOTE

When printed on 11x17" paper, viewer should hold this image approximately 17" from eye to replicate actual view.

LITTLE DIAMOND POND - COLEMAN STATE PARK, STEWARTSTOWN

PHOTOSIMULATION: NORMAL VIEW

VIEW NOTE

When printed on 11x17" paper, viewer should hold this image approximately 17" from eye to replicate actual view.

COLEMAN STATE PARK ENTRANCE, STEWARTSTOWN

EXISTING CONDITIONS: PANORAMA

LOCATION MAP

TECHNICAL INFORMATION

		EXISTING	PROPOSED
TRANSMISSION LINE	**115-kV structure type**	N/A	N/A
	Height range of visible 115-kV structures	N/A	N/A
	320-kV structure type	N/A	Weathering Steel Monopole
	Height range of visible 320-kV structures	N/A	80 - 90 feet
	Right-of-way width	N/A	120 feet

PHOTOGRAPH	**Date and time:** 5/19/13 at 5:10pm	**Location:** 44.944299° N, -71.328574° W	**Viewing Direction:** Southeast
	Distance to visible structures: 1.42 to 1.75 miles	**Number of transmission structures visible in the photosimulation:** 4	
	Camera Focal length (50mm equivalent): 35mm	**Camera Make/Model:** Nikon D7100	**Photo Source:** TJD&A

NOTES

GENERAL NOTES

Simulation is based upon preliminary design plans. Structure design and location will be finalized during the detail design and permitting process.

PHOTOSIMULATION PRODUCTION

By Terrence J. DeWan & Associates

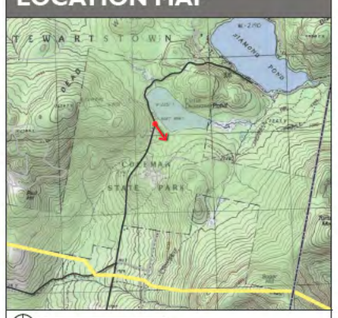
VIEW DESCRIPTION

View is from Diamond Pond Road at the Coleman State Park entrance. View faces Visitors Center and Coleman State Park Campground. The Little Diamond Pond Boat Launch is approximately 250 feet behind the viewer.

COLEMAN STATE PARK ENTRANCE, STEWARTSTOWN

PHOTOSIMULATION: PANORAMA

LOCATION MAP



TECHNICAL INFORMATION

		EXISTING	PROPOSED
TRANSMISSION LINE	**115-kV structure type**	N/A	N/A
	Height range of visible 115-kV structures	N/A	N/A
	320-kV structure type	N/A	Weathering Steel Monopole
	Height range of visible 320-kV structures	N/A	80 - 90 feet
	Right-of-way width	N/A	120 feet

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NOTES

GENERAL NOTES

Simulation is based upon preliminary design plans. Structure design and location will be finalized during the detail design and permitting process.

PHOTOSIMULATION PRODUCTION

By Terrence J. DeWan & Associates.

VIEW DESCRIPTION

View is from Diamond Pond Road at the Coleman State Park entrance. View faces Visitors Center and Coleman State Park Campground. The Little Diamond Pond Boat Launch is approximately 250 feet behind the viewer.

COLEMAN STATE PARK ENTRANCE, STEWARTSTOWN

EXISTING CONDITIONS: NORMAL VIEW

VIEW NOTE

When printed on 11x17" paper, viewer should hold this image approximately 17" from eye to replicate actual view.

COLEMAN STATE PARK ENTRANCE, STEWARTSTOWN

PHOTOSIMULATION: NORMAL VIEW

VIEW NOTE

When printed on 11x17" paper, viewer should hold this image approximately 17" from eye to replicate actual view.

BIG DIAMOND POND (2)

STEWARTSTOWN

OVERALL VISUAL IMPACT **LOW-MEDIUM**

Big Diamond Pond is a 181-acre pond located in Stewartstown, north of Coleman State Park and south of the Connecticut Lakes Headwater conservation area. Approximately 300 feet of the western shoreline is located within the 171,000-Acre Connecticut Lakes Headwaters conservation land. Access to the pond is on Diamond Pond Road, located 6.9 miles from Route 26. Diamond Pond Road wraps around the southern shore of the pond, and Roy Road provides access to the northern shoreline.

Big Diamond Pond is primarily used for fishing. Species in the pond include lake trout, salmon, brook trout, rainbow trout, and yellow perch. The water body is accessible by the state-owned Willard F. Nugent boat launch on the southwestern shore, which includes:

- Parking area for 5-10 cars
- Two portable toilets
- Concrete ramp that can accommodate motor boats and ice fishing shacks
- Informational kiosk maintained by the NH Fish and Game Department

Proposed Transmission Corridor

The 320-kV DC transmission line will be located in a new 120-foot wide corridor on weathering steel monopole structures. The structures that will be visible from Big Diamond Pond range in height from 85 to 100 feet as it crosses Sugar Hill (from DC-134 to DC-141).

Cultural Value: Medium

A publicly accessible pond, with both public and private roads along the shoreline.

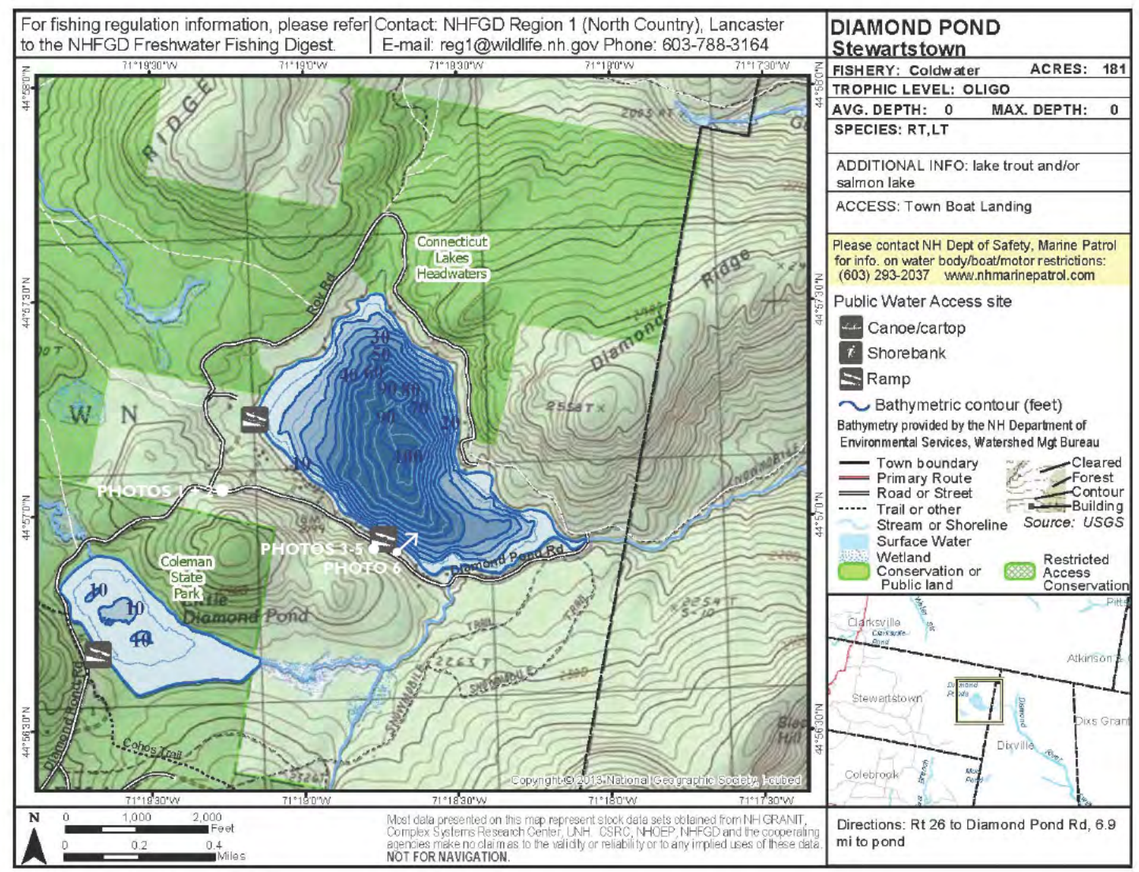
Visual Quality: Medium

The area surrounding the pond is forested, with lakeside homes occupying the shoreline. On the north shore, residential development is low-density and set back from the water. Recent harvesting activity has occurred on the northeastern end of the pond. The southern shore is more densely developed with homes immediately adjacent to the shoreline and located close to one another. A series of low hills surrounding the pond creates a sense of enclosure. South of the pond, the hills create a layered effect, with Black Bluff Hill and Tumble Dick Mountain in the foreground and Sugar Hill visible at a distance of 1.7 miles.

Scenic Significance: Medium

PHOTO 1: Signage at Big Diamond Pond on Diamond Pond Road.

PHOTO 2: NHFGD Boat Launch facility signage.



Official NHDGD Map of Diamond Pond

BIG DIAMOND POND (2)

STEWARTSTOWN

VISUAL IMPACT ASSESSMENT

Visual Effect: Low

- Up to eight transmission structures (approximately 0.9 mile of the line) will be visible from most of the pond as the line crosses Sugar Hill at distances of 1.7 to 1.9 miles.
- The view of Sugar Hill is partially blocked by two hills in the midground.
- The structures will be seen over a horizontal viewing arc of approximately 20 degrees, or less than 6% of the 360-degree view for a boater on the pond.
- The structures will not be visible from the boat launch on the southwest side of the pond where the majority of homes are located.
- The structures will be seen above the tree line, but at a great enough distance so will not appear out of scale with the surrounding landscape.

Mitigation

- Using weathering steel transmission structures to reduce potential contrasts in color and form.

User Groups: Anglers and boaters during summer and ice fishing in the winter.

User Expectation: Medium

- The primary users on the pond are anglers and boaters, whose expectation for scenic quality is greatly affected by the development along the shoreline.

Extent, Nature, and Duration of Use: Medium

- The parking area and boat launch is well maintained and easily accessed from the public road.
- Big Diamond Pond is expected to have less public use than Little Diamond Pond in Coleman State Park, which has more extensive facilities for water access.

Overall Visual Impact: Low-Medium

- The construction of the NPT will have a low-medium overall visual impact on Big Diamond Pond. The view of the structures and conductors at a distance of 1.7 miles should not result in a substantial change in the way people now use or enjoy the pond.
- The use of weathering steel monopole structures will reduce contrast in color and form with the surrounding landscape.
- At a distance of nearly 2 miles, the transmission structures will be perceived as a series of relatively small objects in a landscape that is dominated by shorefront residential development.
- The presence of the transmission structures and conductors will not change the inherent character of the pond.
- Conductors will be minimally visible at a viewing distance of 1.7 miles.

PHOTO 3: View facing north from the Big Diamond Pond Boat Launch. The NPT project will not be visible from this location.

PHOTO 4: Kiosk at Big Diamond Pond Boat Launch. The NPT project will not be visible from this location.

PHOTO 5: Parking area at Big Diamond Pond Boat Launch. The NPT project will not be visible from this location.

Stewartstown Works Cited:

The Cohos Trail 2012 Headwaters Map. PDF. The Cohos Trail Association. The Cohos Trail (Third Addition). Spoffard, NH. 2014.

Cohos Trail website. http://www.cohostrail.org/.

Parks and Recreation New Hampshire. Coleman State park website. http://www.nhstateparks.org/explore/state-parks/coleman-state-park.aspx

Parks and Recreation New Hampshire. Coleman State Park Camping Information and Map. PDF. April 2015.

PHOTO 6: Panoramic view facing northeast from the public Boat launch on Big Diamond Pond. Diamond Ridge is the topography immediately in the foreground. The NPT project will not be visible from this location.

DIXVILLE DESCRIPTION

Area: 48.8 square miles (US Census Bureau)

Inland Water Area: 0.2 square mile (US Census Bureau)

Population: 12 residents (US Census, 2010)

Population Density: 0.3 persons per square mile

Town Location: Dixville is located in Coos County, and is centrally positioned between Millsfield, Errol, Wentworth's Location, Dix's Grant, Clarksville, Stewartstown, Colebrook, Columbia and Erving's Location.

Study Area: The Study Area runs northwest-southeast through the center of Dixville, on the northeast side of the topographic range. The Study Area covers 75.37% of the total land area (23,709 acres).

Physical Characteristics

The unincorporated place of Dixville is located just north of Nash Stream Forest. The topography in town is dramatic, with steep gradients and high peaks throughout town. Diamond Ridge, Blue Ridge, Black Bluff Hill, Tumble Dick Mountain, Nathan Pond Ridge, Mud Pond Ridge, Sanguinary Mountain, Rice Mountain, and Dixville Peak all contribute to the town's average elevation of roughly 1,887 feet above sea level.

Demographics

The population of Dixville has remained relatively steady. According to the Coos County Master Plan, the population in 1960 was 18. In 1988, it was measured to be 40 and in 2005 the population declined to 26 residents. In 2010 the population was estimated to be 12 residents. The median age of residents in 2010 was approximately 48 years of age (US Census Bureau).

Cultural Development Patterns

The legislature granted the land area within Dixville and Dix's Grant to Timothy Dix, Jr. in 1805 for $4,500. Dixville is one of the 23 unincorporated areas within Coos County. The majority of these lands not held by the State Parks or National Forest system are controlled by land management companies, pulp and paper industry, or Dartmouth College. Natural resources drive the economy of these regions although timber production now competes with outdoor recreational activities as an important factor in regional planning decisions (NHES). Dixville is known for its natural resources and remote beauty, particularly around the historic Balsams property. In 2012 the Society for the Protection of NH Forests acquired conservation restrictions protecting the land encompassing a large portion of the Balsam Grand Hotel and negotiations began in 2014 for the redevelopment of the hotel.

Land Use Planning

The unincorporated place of Dixville does not have a master plan, town website, or zoning. North County Council is the regional planning commission and federally-designated economic development district for northern New Hampshire. The Coos County Board of Commissioners serves as the governing body, and the Coos County Planning Board serves as the local planning and land use board for the unincorporated places. The County development goals guide the location of new development to protect various resources, ensure compatibility of land uses with one another, and allow for a range of development opportunities.

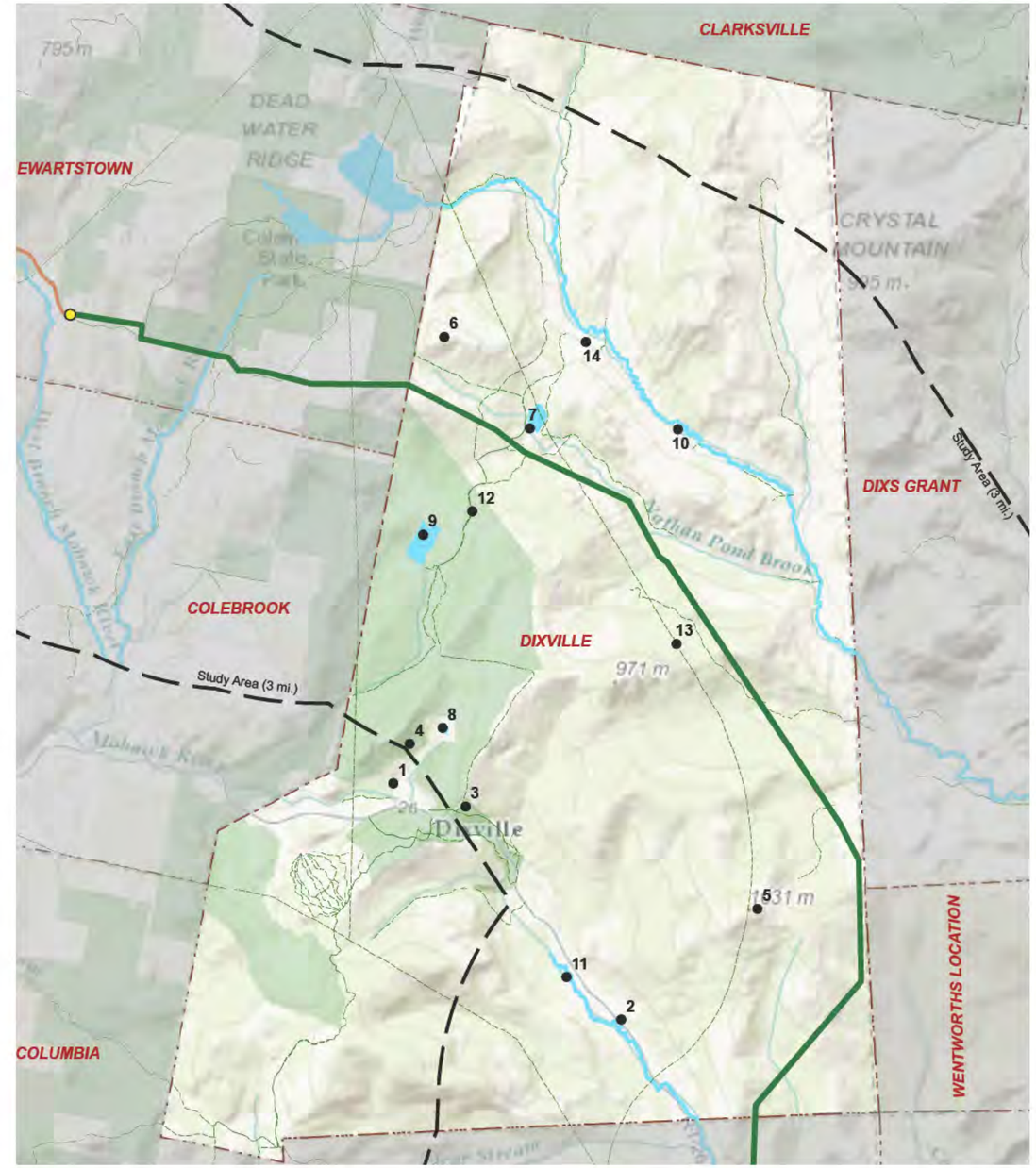
Proposed Transmission Corridor

Physical Features: The 320-kV transmission line corridor will be 120 feet in width and run north-south for approximately 9.1 linear miles through the center of Dixville. The transmission line will extend from the western town boundary to the southern boundary, north and east of Dixville Notch. Proposed structures will range in height from 70 feet to 130 feet. Of the 83 structures in Dixville, nine are over 95 feet tall, two of which reach 130 feet; the most common structure height is 75 feet.

Surrounding Topography: The area in the vicinity of transmission corridor is characterized by steep rigid terrain. The mountains in Dixville are described above.

Vegetation: Vegetation adjacent to the transmission corridor is a mix of high-elevation spruce-fir, lowland spruce-fir, northern hardwood-conifer and marshes (WAP).

Adjacent Land Use: Land use along the proposed corridor is forested. The corridor intersects snowmobile trails Corridor 18, 110, and 115, primary 134. The Nathan Pond Trail, part of the Ride the Wilds ATV trail system, is crossed by the corridor. The Flume Trail, located along Reservoir Road is maintained by the Ride the Wilds group and is co-located with a snowmobile trail; the corridor intersects this trail twice and a small portion of the trail is located within the right-of-way.



EXISTING TRANSMISSION CORRIDOR
PROPOSED TRANSMISSION CORRIDOR
TRANSITION STATION
SUBSTATION
OTHER TRANSMISSION LINE
SCENIC RESOURCE (SEE SCENIC RESOURCE TABLE)
CONSERVATION AREA
WATER RESOURCE
SCENIC BYWAY
1 MILE

DIXVILLE SCENIC RESOURCES

TABLE 1-4: DIXVILLE SCENIC RESOURCES

#	SCENIC RESOURCE	DESCRIPTION	SOURCE	OWNERSHIP	DISTANCE TO CORRIDOR	CULTURAL VALUE	POSSIBLE VISIBILITY	VISUAL QUALITY	SCENIC SIGNIFICANCE
1	The Balsams Resort	Listed on National Register of Historic Places. New Hampshire landmark, private resort, and conservation area.	29	Private	3.4 mi	HIGH	NO		
2	Moose Path Trail Scenic Byway	NH Rt 26. State designated Scenic and Cultural Byway. VIA in Millsfield.	8	NH Dept. of Transportation	0.7 mi	MEDIUM	YES	HIGH	MEDIUM-HIGH
3	Dixville Notch State Park	State Park.	1 / 5 / 24 / A	NH Dept of Recreation & Economic Development	2.7 mi	HIGH	NO		
4	Canal Trail	Publicly accessible recreational trail. No defined overlooks.	24	Various	0.6 mi	MEDIUM	NO		
5	Rice Mountain Trail	Recreational trail not maintained.	5 / C	Various	1.0 mi	LOW	YES		
6	Tumble Dick Mountain	Publicly accessible recreational trail	5 / A	Various	0.6 mi	LOW	NO		
7	Nathan Pond	Waterbody with limited public access. Designated Trout Fishing Pond.	27	NH Fish and Game Dept.	0.3 mi	LOW	YES		
8	Abeniki Lake	Publicly accessible waterbody	30	State	2.6 mi	MEDIUM	NO		
9	Mud Pond	Waterbody with limited public access. Dam impoundment.	30	State	1.2 mi	LOW	YES		
10	Swift Diamond River	River not designated in NH Rivers Management Program	30	State	1.1 mi	LOW	NO		
11	Clear Stream	River not designated in NH Rivers Management Program	30	State	2.2 mi	LOW	NO		
12	Cohos Trail	162-mile trail in Cohos County, managed by Cohos Trail Association. VIA in Stewartstown and Subarea 1 Impact Summary.	28	Various	Crosses Corridor	MEDIUM	YES	LOW	LOW-MEDIUM
13	State ATV Trail	State-wide ATV trail	17	Various	Crosses corridor, runs length of corridor.	LOW	YES		
14	State Snowmobile Trail 133, 134, 18	State-wide Snowmobile trail.	3	Various	Crosses corridor	LOW	YES		

STATE/REGIONAL SOURCES:

(1) NH State Park Listing: www.nhstateparks.org/

(3) New Hampshire Snowmobile Association Map, 2014 (5) Delorme Atlas and Gazetteer for New Hampshire, 16th Edition, 2010

(5) Delorme Atlas and Gazetteer for New Hampshire, 16th Edition, 2010

(8) New Hampshire DOT Scenic Byway Map, October 2008. http://www.nh.gov/dot/programs/scbp/index.htm

(17) State of New Hampshire OHRV Trails Map by Bureau of Trails New Hampshire: http://www.nhstateparks.org/uploads/pdf/ATV-Trail-Bike_Trails-Map.pdf

(24) Nilsen, Kim. 50 Hikes North of the White Mountains. Woodstock, VT: Countryman Press (2012)

(27) Designated Trout Ponds in New Hampshire: http://www.wildlife.state.nh.us/Fishing/trout_ponds.html

(28) Cohos Trail Website:http://www.cohostrail.org/farnorth.html and Cohos Trail Map of Headwaters Region

(29) New Hampshire National Register of Historic Places, November 2014

(30) Official List of Public Waters by New Hampshire Department of Environmental Services Water Division, January 17, 2014

LOCAL SOURCES:

(A) Cohos Trail Information: http://www.cohostrail.org/dixvilleupdate.html

(C) NH Mountain Hiking Website: http://www.nhmountainhiking.com/rice.html

MILLSFIELD DESCRIPTION

Land Area: 44.7 square miles (US Census Bureau)

Inland Water Area: 0.4 square mile (US Census Bureau)

Population: 23 residents (US Census, 2010)

Population Density: 0.5 persons per square mile

Town Location: Millsfield is located in Coos County, and is centrally positioned between Dummer, Errol, Wentworth's Location, Dixville, Erving's Location and Odell.

Study Area: The Study Area runs north-south through Millsfield. The northeast corner of Mills field is the only area of town not within the Study Area. The Study Area covers 89.66% of the total land area (25,946 acres).

Physical Characteristics

The town of Millsfield is located due east of Nash Stream Forest, and due west of the majority of 13 Mile Woods Community Forest. The topography in town is rough, with steep gradients and high peaks throughout town. Mount Metelak, Mount Patience, Mount Kelsey, Owlhead Mountain, and Signal Mountain are all over 2,700 feet in elevation. Steep slopes also exists toward Millsfield's northern town boundary, adjacent to the town of Dixville. The Mount Kelsey Wildlife Management Area is located in Millsfield.

Demographics

According to the Coos County Master Plan, the population was estimated to be approximately 23 residents in 2010. The median age of residents in 2010 was approximately 41 years of age (US Census Bureau).

Cultural Development Patterns

The unincorporated place of Millsfield remains largely undeveloped. The land is primarily forested with snowmobile and ATV trails winding through town. A few developed parcels are located along Route 26.

Land Use Planning

The unincorporated place of Millsfield does not have a master plan, town website, or zoning. North County Council is the regional planning commission and federally-designated economic development district for northern New Hampshire. The Coos County Board of Commissioners serves as the governing body, and the Coos County Planning Board serves as the local planning and land use board for the unincorporated places. The County development goals guide the location of new development to protect various resources, ensure compatibility of land uses with one another, and allow for a range of development opportunities.

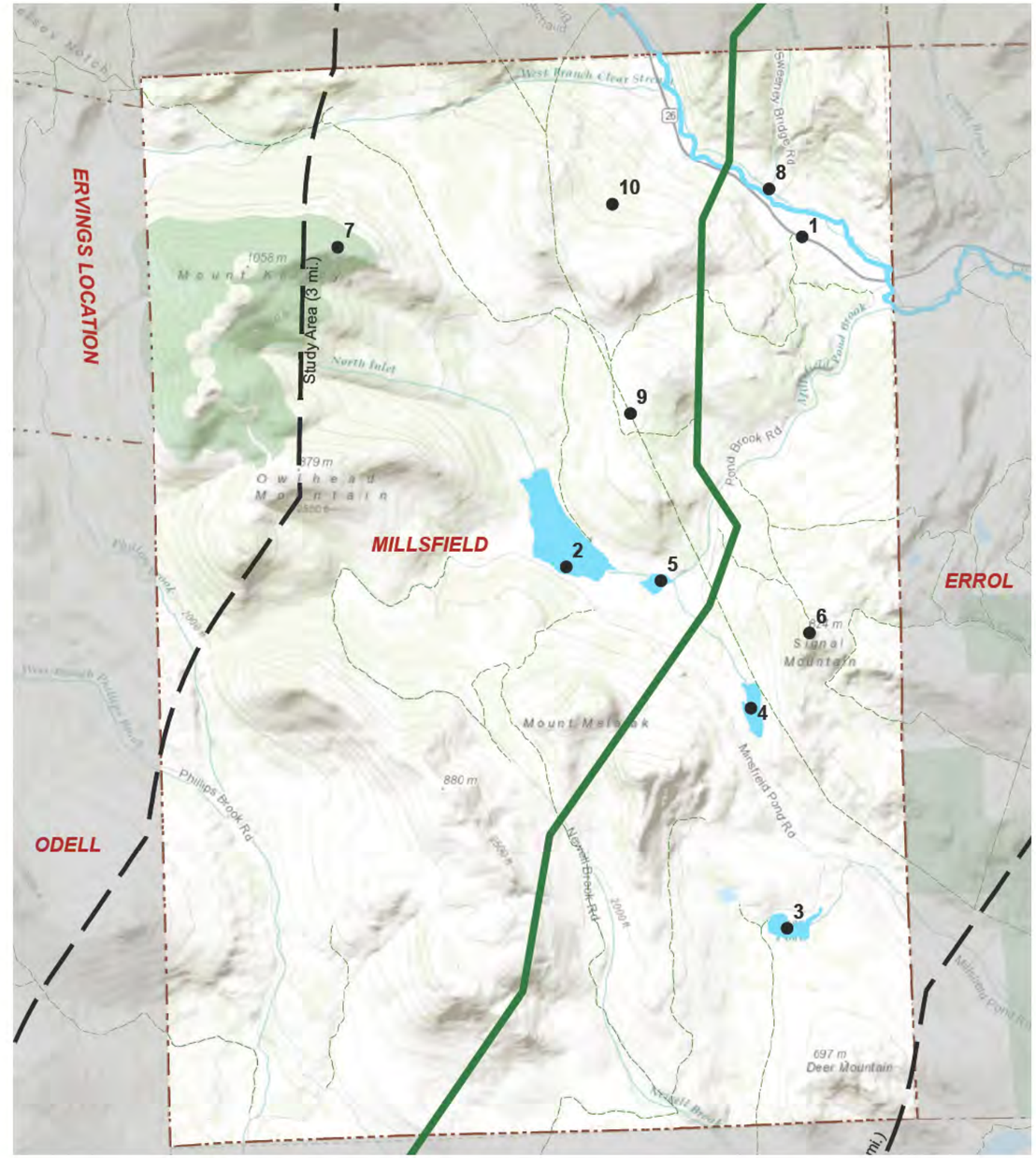
Proposed Transmission Corridor

Physical Features: The 320-kV transmission line corridor will be 120 feet in width and run north-south for approximately 9.0 linear miles from the east side of the northern town boundary to the west side of the southern town boundary. Proposed structures will range in height from 65 feet to 105 feet; the most common structure height is 75 feet.

Surrounding Topography: The area adjacent to the transmission corridor is characterized by steep terrain near Mt. Patience, Signal Mountain, and west of Newell Brook.

Vegetation: Vegetation adjacent to the transmission corridor is a mix of high-elevation spruce-fir, lowland spruce-fir, northern hardwood conifer and marshes (WAP).

Adjacent Land Use: The proposed corridor is located adjacent to Newell Brook, Newell Brook Road, unnamed road, Millsfield Pond Road, Signal Mountain Road, Clear Stream, and Route 26 in Millsfield. The proposed right-of-way is located along logging operations, logging roads, and recreation trails. The corridor intersects snowmobile trail Primary 110A, Primary 115, Corridor 28 as well as various ATV trails.



PROPOSED TRANSMISSION CORRIDOR
TRANSITION STATION
SUBSTATION
OTHER TRANSMISSION LINE
SCENIC RESOURCE (SEE SCENIC RESOURCE TABLE)
CONSERVATION AREA
WATER RESOURCE
SCENIC BYWAY
1 MILE

MILLSFIELD SCENIC RESOURCES

TABLE 1-5: MILLSFIELD SCENIC RESOURCES

#	SCENIC RESOURCE	DESCRIPTION	SOURCE	OWNERSHIP	DISTANCE TO CORRIDOR	CULTURAL VALUE	POSSIBLE VISIBILITY	VISUAL QUALITY	SCENIC SIGNIFICANCE
1	Moose Path Trail Scenic Byway	NH Rt 26. State designated Scenic and Cultural Byway.	8	NH Dept. of Transportation	0.7 mi	MEDIUM	YES	HIGH	MEDIUM-HIGH
2	Millsfield Pond	Publicly accessible waterbody (boat ramp). NH Designated Trout Pond.	2 / 27	NH Dept of Recreation & Economic Development	0.8 mi	MEDIUM	YES	MEDIUM	MEDIUM
3	Moose Pond	Waterbody with limited public access. NH Designated Trout Pond.	5 / 21 / 27	NH Fish and Game Dept.	1.8 mi	LOW	YES		
4	Long Pond	Waterbody with limited public access. NH Designated Trout Pond.	5 / 21 / 27	NH Fish and Game Dept.	0.6 mi	LOW	YES		
5	Bragg Pond	Waterbody with limited public access. NH Designated Trout Pond.	5 / 21 / 27	NH Fish and Game Dept.	0.4 mi	LOW	YES		
6	Signal Mountain Fire Tower	Standing inactive fire tower.	12	NH Forest Service	0.8 mi	LOW	YES	HIGH	MEDIUM
7	Mount Kelsey WMA	Conservation land and Wildlife Management Area on Mount Kelsey. Surrounds Granite Reliable Power Wind Project.	11	NH Fish and Game Dept.	2.5 mi	LOW	NO		
8	Clear Stream	River not designated in NH Rivers Management Program.	30	State	Crosses Corridor	LOW	YES		
9	State ATV Trail	State-wide ATV trail.	17	Various	Crosses Corridor	LOW	YES		
10	State Snowmobile Trail 110, 115, 19, 28	State-wide snowmobile trail.	3	Various	Crosses Corridor	LOW	YES		

YELLOW ROWS: Resources described in this town section with possible VIEWS of the corridor and at least a MEDIUM Cultural Value Rating

STATE/REGIONAL SOURCES:

(2) New Hampshire Fish and Game Department Table of Public-access boating and fishing sites in New Hampshire: http://www.wildlife.state.nh.us/Outdoor_Recreation/access_sites_table.htm (8) New Hampshire DOT Scenic Byway Map, October 2008. http://www.nh.gov/dot/programs/scbp/index.htm

(3) New Hampshire Snowmobile Association Map, 2014

(5) Delorme Atlas and Gazetteer for New Hampshire, 16th Edition, 2010

(8) New Hampshire DOT Scenic Byway Map, October 2008. http://www.nh.gov/dot/programs/scbp/index.htm

(11) NH State Wildlife Management Areas: http://www.wildlife.state.nh.us/Wildlife/WMA_index.htm

(12) NH Division of Forests and lands Fire Lookout Towers: http://www.firelookout.org/lookouts/nh/nh.htm (27) Designated Trout Ponds in New Hampshire: http://www.wildlife.state.nh.us/Fishing/trout_ponds.html

(17) State of New Hampshire OHRV Trails Map by Bureau of Trails New Hampshire: http://www.nhstateparks.org/uploads/pdf/ATV-Trail-Bike_Trails-Map.pdf

(21) New Hampshire Fish and Game Department Maps: http://maps.wildlife.state.nh.us/website/maps/

(27) Designated Trout Ponds in New Hampshire: http://www.wildlife.state.nh.us/Fishing/trout_ponds.html

(30) Official List of Public Waters by New Hampshire Department of Environmental Services Water Division, January 17, 2014

MILLSFIELD POND (2)

MILLSFIELD

OVERALL VISUAL IMPACT LOW

Millsfield Pond (165 acres) is the largest waterbody in Millsfield, NH. The majority of the residential development on the pond – a group of 30± waterfront cottages – is located along the southern shoreline, oriented to the north and northeast. The cottages flank a public water access area with a paved ramp and parking for a dozen cars. The pond is relatively shallow, with an average depth of 10 feet and maximum depth of 14 feet. The pond is stocked with brook trout by the New Hampshire Fish and Game Department (NHF&G).

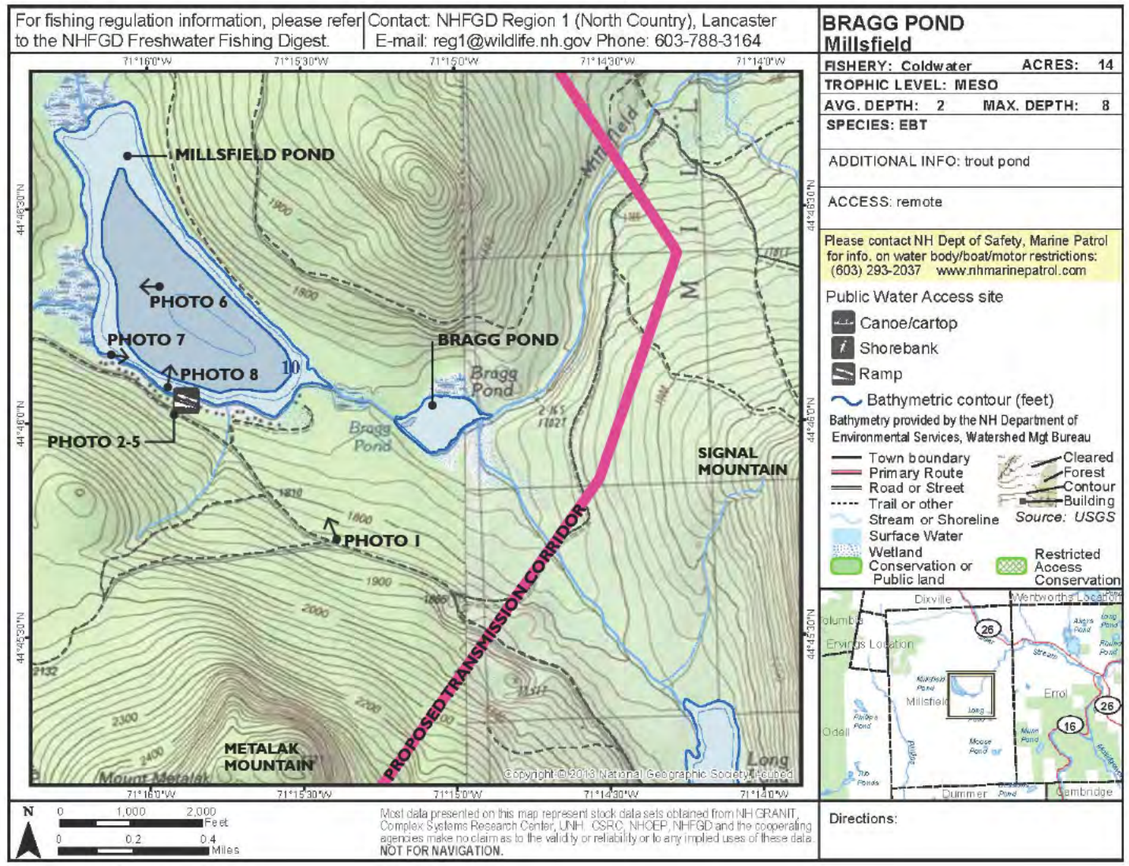
Bragg Pond (14 acres) is an undeveloped waterbody 0.25 mile downstream from Millsfield Pond. The pond is very shallow, with an average depth of 2 feet and maximum depth of 8 feet. The pond is stocked with brook trout by NHF&G.

Both Millsfield and Bragg Ponds are known as Designated Trout Ponds, a group of 152 lakes and ponds that NHF&G manages specifically for trout. These are fly-fishing-only waterbodies (i.e., ice fishing is not allowed), which offer anglers the opportunity to fish in some of NH's most scenic surroundings, according to the NHF&G website.

The view from Millsfield Pond to the southwest, west, and northwest now includes many of the turbines of the Granite Reliable Windpark, which was approved by the SEC in 2009 and became operational in 2011. The visual impact assessment (VIA) that was prepared for the Granite Reliable project described the anticipated impact that the project would have on Millsfield Pond:

Portions of both Kelsey/Owlhead Mountain and Dixville Peak are visible from the boat access area and from the southern shoreline. It is likely that there would be views from many camps of at least some turbines along these two ridges (see Millsfield Pond Simulation, Appendix F). From portions of the Pond, up to 8 turbines along the Fishbrook ridge would also be visible with up to 27 turbines (some only the tips of blades) along the three ridges possibly being visible. This is one of the few areas from which turbines on all three ridges would be visible. Mt. Kelsey/Owlhead and Dixville Peak are approximately 2.8 miles (4.5 km) and 5.5 miles (8.9 km) away respectively. Turbines on the north end of Fishbrook Ridge would be 2.2 miles (3.5 km) away at the closest point.

Millsfield Pond is likely to receive the greatest impacts due to a combination of its proximity, the number of camps around the pond, and the number of turbines visible... From some locations in the northeastern portion of the pond up to 27 turbines could be visible. Millsfield Pond is in a privately owned working forest and not on publicly protected land. It is a context in which development, active logging, and motorized craft are part of the foreground setting. Because there would be no turbines located on the summit, the turbines appear behind and are partially screened by the Owlhead summit. Views around the pond will continue to include Mt. Metalak, Signal Mountain and other surrounding hills that will be undeveloped. (Granite Reliable Power Windpark Visual Impact Assessment, 2008.)



Official NHFGD Map of Millsfield Pond.

Proposed Transmission Corridor

The 320-kV DC transmission line will be located in a new 120-foot wide corridor on galvanized steel lattice structures that will range in height from 75 to 100 feet.

Cultural Value: Medium

A designated trout fishing pond with public access

Visual Quality: Medium

The northern, western, and eastern shorelines of Millsfield Pond are relatively undeveloped, with only a few camps visible in the woods at the edge of the pond. To a boater on the pond, the surrounding mountains – Signal Mountain, Mt. Patience, Fishbrook Ridge, Owlhead Mountain, and Mount Kelsey – generate a sense of enclosure.

Scenic Significance: Medium

PHOTO 1: Millsfield ATV club trail building and parking area is located on access road to Millsfield Pond. The Granite Reliable Wind turbines are visible in the background.

PHOTO 2: Millsfield Pond boat launch and parking area on the south side of the lake. The project will not be visible from this location.

PHOTO 3: NHF&G Kiosk at Millsfield Pond boat launch.

PHOTO 4: East facing view from the Millsfield Pond boat launch. The top of two structures will be visible in the tree line (see Millsfield Pond Photosimulation).

PHOTO 5: East side of Millsfield Pond boat launch. Trees in the foreground will screen views of project.

MILLSFIELD POND (2)

MILLSFIELD

VISUAL IMPACT ASSESSMENT

Visual Effect: Low

- The corridor will be located between 0.8 mile and 1.7 miles to the east of Millsfield Pond and approximately 1/3 of a mile east of Bragg Pond in commercial forestland that has been actively harvested over the past decade.
- Tall evergreen trees at the edge of Millsfield Pond and on the low hills to the east will screen most of the transmission corridor from views.
- The tops of a few transmission structures may be apparent in the midground below Signal Mountain, but they will not compete with viewer attention or detract from the view of Signal Mountain.

Mitigation

- Selecting a route that minimizes visual impacts by taking advantage of existing topography to keep the transmission line as low as possible.

User Groups: Motorists, residents, and tourists

User Expectation: Medium

- The primary users on the pond are anglers and boaters, whose expectation for scenic quality is greatly affected by the development along the shoreline.
- The land surrounding the ponds are working forests, with active harvesting operations, haul roads, and other signs of commercial activity.
- User expectation is also influenced by the presence of over two dozen turbines of the Granite Reliable Windpark that are visible from portions of the pond, some as close as 2.2 miles away.

Extent, Nature, and Duration of Public Use: Medium

- The parking area and boat launch is well maintained and easily accessed.
- The pond is expected to have moderate public use, primarily for fishing and boating.

Overall Visual Impact: Low

The construction of a new transmission line will have a low overall visual impact on Millsfield Pond and Bragg Pond. The view of the top of a few structures and conductors at distances of 0.7 to 1.5 miles should not result in a substantial change in the way people now use or enjoy either pond.

- Tall evergreen trees between Millsfield Pond and Bragg Pond will screen most of the transmission structures from view, especially for boaters at the eastern end of the ponds.
- Where they are visible, the tops of transmission structures will be perceived as relatively small objects when compared to the mass of Signal Mountain rising above the ponds to the east.
- The presence of the transmission structures and conductors will not change the inherent character of the ponds.

PHOTO 6: View from Millsfield Pond facing west. Granite Reliable Wind Turbines are visible at a distance of approximately two miles from the pond. The NPT corridor is located in the opposite direction.

PHOTO 7: East facing view from the west shoreline of Millsfield Pond. Signal Mountain is visible on the opposite shoreline. The top of two NPT structures will be visible in the tree line at the base of the mountain (see Millsfield Pond Photosimulation).

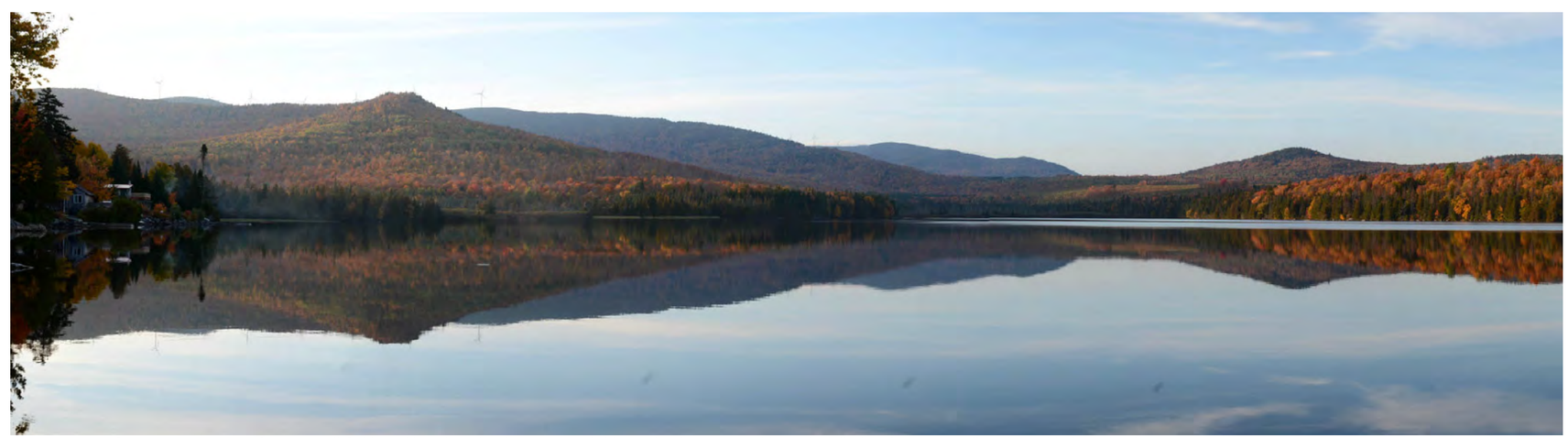


PHOTO 8: North facing panoramic view from the Millsfield Pond boat launch. The Granite Reliable wind turbines are visible on the hillside. The project will not be visible from this direction.

MILLSFIELD POND, MILLSFIELD

EXISTING CONDITIONS: PANORAMA

LOCATION MAP

TECHNICAL INFORMATION

		EXISTING	PROPOSED
TRANSMISSION LINE	**115-kV structure type**	N/A	N/A
	Height range of visible 115-kV structures	N/A	N/A
	320-kV structure type	N/A	Galvanized Steel Lattice
	Height range of visible 320-kV structures	N/A	70 - 85 feet
	Right-of-way width	N/A	120 feet

PHOTOGRAPH	**Date and time:** 10/30/13 at 11:30am	**Location:** 44.768367° N, -71.264550° W	**Viewing Direction:** East
	Distance to visible structures: 1.06 to 1.30 miles	**Number of transmission structures visible in the photosimulation:** 2	
	Camera Focal length (50mm equivalent): 35mm	**Camera Make/Model:** Canon EOS 6D	**Photo Source:** LandWorks

NOTES

GENERAL NOTES

Simulation is based upon preliminary design plans. Structure design and location will be finalized during the detail design and permitting process.

PHOTOSIMULATION PRODUCTION

By Terrence J. DeWan & Associates

VIEW DESCRIPTION

View is from the water near southern shoreline of Millsfield Pond. Signal Mountain is visible above the proposed transmission corridor on the right side of the image.

MILLSFIELD POND, MILLSFIELD

PHOTOSIMULATION PANORAMA

LOCATION MAP

1 MILE

TECHNICAL INFORMATION

		EXISTING	PROPOSED
TRANSMISSION LINE	**115-kV structure type**	N/A	N/A
	Height range of visible 115-kV structures	N/A	N/A
	320-kV structure type	N/A	Galvanized Steel Lattice
	Height range of visible 320-kV structures	N/A	70 - 85 feet
	Right-of-way width	N/A	120 feet

PHOTOGRAPH	**Date and time:** 10/30/13 at 11:30am	**Location:** 44.768367° N, -71.264550° W	**Viewing Direction:** East
	Distance to visible structures: 1.06 to 1.30 miles	**Number of transmission structures visible in the photosimulation:** 2	
	Camera Focal length (50mm equivalent): 35mm	**Camera Make/Model:** Canon EOS 6D	**Photo Source:** LandWorks

NOTES

GENERAL NOTES

Simulation is based upon preliminary design plans. Structure design and location will be finalized during the detail design and permitting process.

PHOTOSIMULATION PRODUCTION

By Terrence J. DeWan & Associates.

VIEW DESCRIPTION

View is from the water near southern shoreline of Millsfield Pond. Signal Mountain is visible above the proposed transmission corridor on the right side of the image.

MILLSFIELD POND, MILLSFIELD

EXISTING CONDITIONS: NORMAL VIEW

VIEW NOTE

When printed on 11x17" paper, viewer should hold this image approximately 17" from eye to replicate actual view.

MILLSFIELD POND, MILLSFIELD

PHOTOSIMULATION: NORMAL VIEW

VIEW NOTE

When printed on 11x17" paper, viewer should hold this image approximately 17" from eye to replicate actual view.

RT 26. MOOSE PATH SCENIC BYWAY (1)

MILLSFIELD

OVERALL VISUAL IMPACT **LOW**

Route 26 is known as Moose Path Trail Scenic Byway. The state-designated Byway is known for its abundant historic, cultural, and scenic resources. Some of the highlights include:

- Northern Forest Heritage Park and the Brown Pulp & Paper Company House Museum in Berlin
- The recreational and wildlife viewing opportunities of the Pontook Reservoir on the Androscoggin River in Dummer
- 13 Mile Woods Scenic Area
- Route 26 Wildlife viewing area, Dixville Notch State Park, and the historic Balsams Resort in Dixville Notch
- Lake Francis State Park and Connecticut Lakes State Forest in Pittsburg.

As the name implies, one of the major attractions to the Byway is the opportunity to spot moose along the roadside. Many of the publications that promote the area recommend the Route 26 Wildlife Viewing Area near Dixville, as well as sections of Route 26 between Dixville and Errol to the east (Wildlife Viewing in the North Woods, NHF&GD). Umbagog National Wildlife Refuge in Errol publishes a Map of Places to See Moose in the Umbagog Area. Route 26, starting just north of the NPT corridor and extending to Dixville, is labeled as one of the Moose Watching Areas in the region (Umbagog National Wildlife Refuge map).

The photograph used in the photosimulation was taken from a point on the Byway approximately 0.75 mile southeast of the NPT crossing.

In addition to the forested and agricultural landscape, the view to the northwest includes turbines from the Granite Reliable Windpark on Dixville Peak, seen at a distance of approximately 4.8 miles. The Granite Reliable project was approved by the SEC in 2009 and went on-line in 2011 with a total of 33 turbines on Dixville Peak, Mt. Kelsey and Owlhead, and Fishbrook ridge. The 3 MW turbines have a hub height of 263 feet and a rotor diameter of 295 feet, for a total height of 410 feet.

The visual impact assessment (VIA) for the Granite Reliable Windpark recognized that the area in the vicinity of the photosimulation was one of the more scenic locations in this part of the Byway, and all or portions of 8 turbines on Dixville Peak would be visible:

"Intermittent views continue as one heads northeast with the Kelsey ridgeline most dominant in the view until one reaches the Signal Mountain Road intersection. One of the more scenic views along this stretch is at Signal Mountain Road from which Dixville Peak is viewed across agricultural meadows and an old farmstead. About 5 of the turbines would be almost entirely visible with 3 partially hidden behind a ridge extending east from Dixville Peak. As a State Scenic Highway, Route 26 is one of the primary roadways by which both visitors and local residents view the area. As noted above, the project would not be visible from the most scenic and sensitive portion of this roadway through Dixville Notch. Other portions of the highway are characterized by mixed land uses including newer development in some areas. Views are generally intermittent with long stretches where the project would not be visible. The two most scenic locations and those from which the project would be most visible are the two Simulation Points at Fish Hatchery Road east of Colebrook and Signal Mountain Road northwest of Errol. These two viewpoints are characterized by relatively intact foregrounds with Dixville Peak visible almost directly ahead. In both views a maximum of 8 turbines would be visible. Both views also include other surrounding mountains that would remain undeveloped. Although these can be considered to be views of high scenic quality they are not distinctive or protected landscapes and the addition of the turbines is unlikely to significantly diminish the enjoyment of the views."

The Moose Path Trail Scenic Byway has views of the transmission corridor at three individual locations. This description and analysis focuses on the visibility from Route 26 in Millsfield. See the Subarea 1 Impact Summary for an overall visual impact assessment for each resource.

Proposed Transmission Corridor

The 320-kV DC transmission line will be located in a new 120-foot wide corridor on weathering steel monpole and galvanized steel lattice structures that will range in height from 95 to 90 feet. The transmission structures will be set back 200 to 500 feet from the road at the point of crossing. The 115-foot tall angle structure immediately north is approximately 450 feet from the road and on the east side of Clear Stream. The change in corridor alignment at this point will limit views to the north to this single structure. The structure on the south is approximately 175 feet from the road. A change in the southerly alignment approximately 0.4 mile to the south will limit views to four structures.

Cultural Value: Medium

State designated Scenic Byway.

Visual Quality: High

The landscape south of the NPT crossing is a scenic area consisting of open agricultural fields on either side of the road; several old farmsteads; and a series of low hills flanking the road and framing a more distant view toward the distinctive profile of Dixville Peak. This focused landscape starts just east of Signal Mountain Road and continues for approximately 1.2 miles at a point where the road passes through forestland on either side of the road, blocking the more distant views. Another notable characteristic is its lack of new residential development.

The landscape north of the crossing is a more common landscape consisting of open fields and forestland, commercial development, low density residential, and low hills that have been recently harvested.

Scenic Significance: Medium-High

PHOTO 1: View facing south at proposed Route 26 project crossing. Clearing within the corridor and conductors spanning the roadway will be visible from this viewpoint. Structures will be set back 200 to 500 feet from the road.

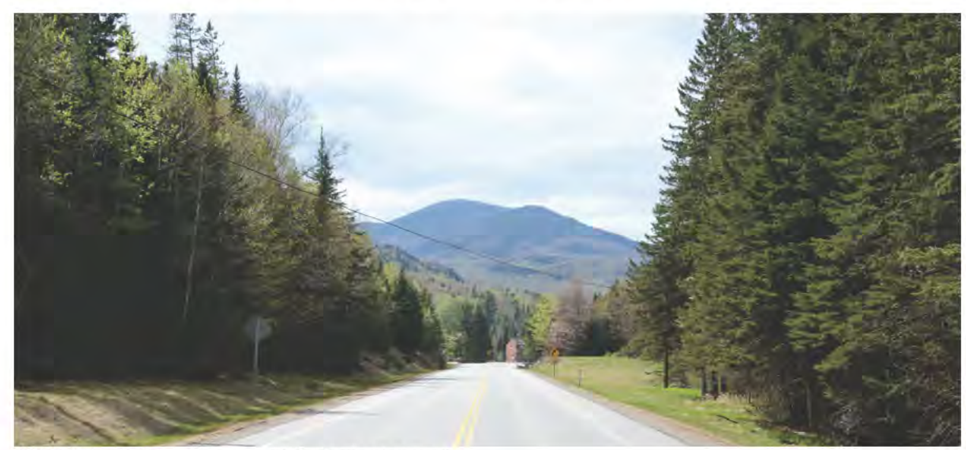


PHOTO 2: View facing north at proposed Route 26 project crossing.

RT 26. MOOSE PATH SCENIC BYWAY (1)

MILLSFIELD

VISUAL IMPACT ASSESSMENT

Visual Effect: Low

- The structures immediately adjacent to the Scenic Byway will be weathering steel monopole structures.
- To the northbound traveler, the transmission structures and conductors will be intermittently visible from portions of the 1.5-mile section of Route 26. Where structures are visible, they will be seen at distances of 0.5 mile to 1.6 miles. In most locations, the structures and conductors will be seen against a wooded backdrop, following the contour and lines of the surrounding hills.
- For the southbound motorist coming from the Dixville area, the NPT conductors will come into view approximately 1.2 miles west of the crossing at the transmission line is located on a recently cut hillside. Heavy forest cover immediately adjacent to both sides of the road will minimize views of the transmission structures to just within the road right-of-way until the motorist is at the crossing.

Mitigation

- Selecting a route that avoids locations where structures would be seen against the sky.
- Maintaining an adequate buffer between the transmission line and the scenic agricultural land southeast of the crossing.
- Using an existing clearing on the south side of Route 26 to minimize tree removal.
- Changing alignment to minimize views up the transmission corridor.
- Selecting a road crossing between two reverse curves, which limits the time the conductors will be visible.
- Using weathering steel monopole structures on the north and south sides of Route 26.

User Groups: Motorists, residents, and tourists.

User Expectation: Medium

- Touring motorists will have a heightened expectation of scenic quality due to the promotional material generated for the scenic Byway and signage along the way.
- This section of the Byway passes agricultural fields and rural residential areas. There is some expectation of continued human development along the Byway.
- For northbound tourists, the views of up to 8 wind turbines on Dixfield Peak will influence their expectation for scenic quality by introducing large-scale man-made objects in a prominent location.

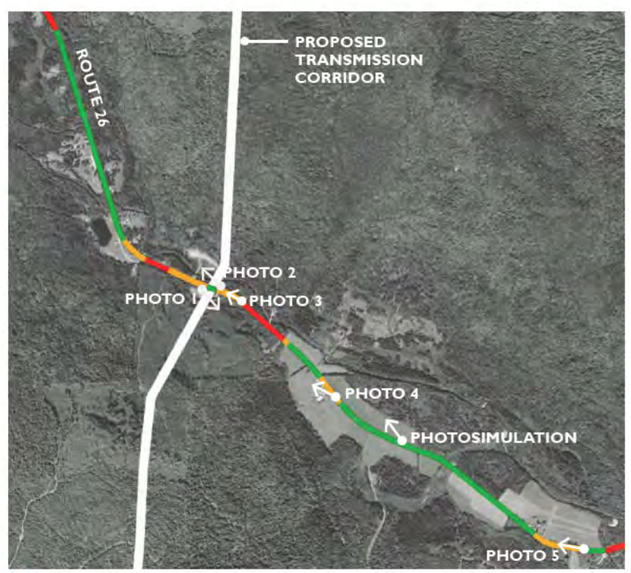
Extent, Nature, and Duration of Public Use: Medium

- The AADT on Route 26 at the Millsfield town line was 1,400 trips/day in 2012.
- An unknown number of people follow the Byway to experience the scenery; assume a moderate level of use due to its recognition as a state Byway and its proximity to the Balsams Resort and other attractions of statewide significance.
- People are drawn to the Byway for the character of the surrounding landscape.
- Northbound motorists will pass through this 1.2-mile section of the Byway in approximately 1.5 minutes at 50MPH. There are no designated places to pull off the road to stop.

Overall Visual Impact: Low

The construction of a new transmission line will have a low overall visual impact to northbound travelers on this section of the Moose Path Trail Scenic Byway. The structures represent a relatively minor change to the overall experience of the Byway and should not result in a substantial change in the way people now use or enjoy the Byway.

- To the northbound traffic, the new transmission structures and conductors on the hillside above the road will be apparent to someone who is looking for them, but they will be subordinate to the surrounding landscape. Southbound motorists will see several structures on the recently harvested hillside.
- The structures will be visible for a relatively short period of time by northbound motorists who will be more focused on the views of Dixfield Peak to the northwest. Southbound traffic will be aware of the transmission line in a straight section of the highway up to the point where it crosses Route 26. Views of the structures will be limited to just over a mile in either direction, which is slightly more than 1% of the total length of Moose Path Trail Scenic Byway (98 miles in length).
- For northbound traffic the transmission clearing will only be visible at the road crossing, and then only for a relatively short distance due to the change in alignment. For southbound traffic the corridor will appear on a hillside that has been recently harvested.
- The new transmission structures do not change the inherent character of the Moose Path Trail Scenic Byway as a whole.



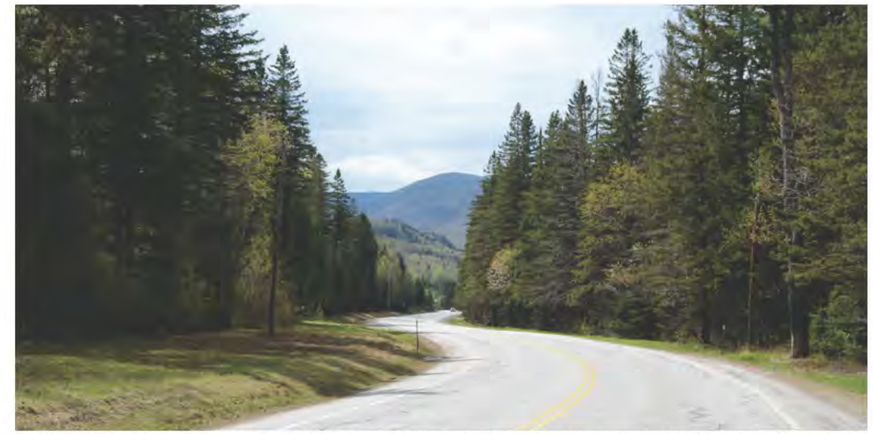


PHOTO 3: View from Route 26 northbound lane the project crossing. Some corridor clearing on the left side of the road and conductors will be partially visible from this viewpoint. Transmission structures will be set back 200 to 500 feet and will not be visible.

PHOTO 4: View facing northwest from Route 26. The project is located behind the treeline and will not be visible in this direction.

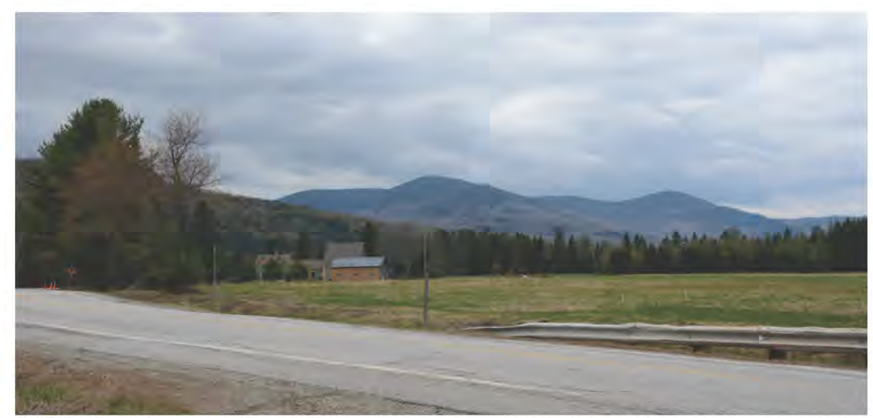
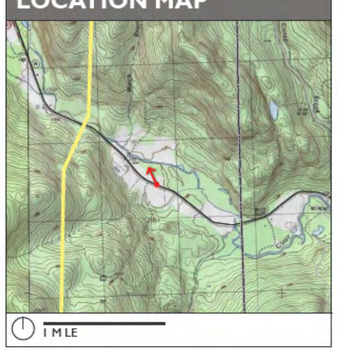


PHOTO 5: West facing view from Route 26. The tops of structures may be visible in the treeline running over ridge behind the farm house. The NPT corridor is approximately 1.3 miles from this point.

MOOSE PATH SCENIC BYWAY (RT. 26), MILLSFIELD

EXISTING CONDITIONS: PANORAMA

LOCATION MAP



TECHNICAL INFORMATION

		EXISTING	PROPOSED
TRANSMISSION LINE	115-kV structure type	N/A	N/A
	Height range of visible 115-kV structures	N/A	N/A
	320-kV structure type	N/A	Galvanized Steel Lattice
	Height range of visible 320-kV structures	N/A	65 - 90 feet
	Right-of-way width	N/A	120 feet

PHOTOGRAPH	**Date and time:** 5/19/2013 at 3:10pm	**Location:** 44.804281° N, -71.228394° W	**Viewing Direction:** Northwest
	Distance to visible structures: 0.98 to 1.58 miles	**Number of transmission structures visible in the photosimulation:** 6	
	Camera Focal length (50mm equivalent): 35mm	**Camera Make/Model:** Nikon D7100	**Photo Source:** TJD&A

NOTES

GENERAL NOTES

Simulation is based upon preliminary design plans. Structure design and location will be finalized during the detail design and permitting process.

PHOTOSIMULATION PRODUCTION

By Terrence J. DeWan & Associates

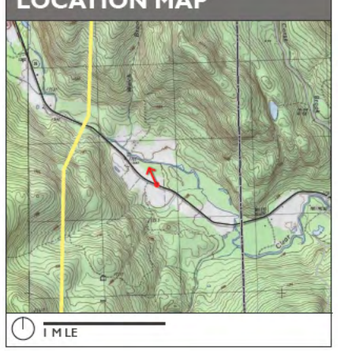
VIEW DESCRIPTION

View is from the westbound lane on Route 26. Granite Reliable Wind Farm is visible on the left side of the image.

MOOSE PATH SCENIC BYWAY (RT. 26), MILLSFIELD

PHOTOSIMULATION: PANORAMA

LOCATION MAP



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TRANSMISSION LINE	**115-kV structure type**	N/A	N/A
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By Terrence J. DeWan & Associates.

VIEW DESCRIPTION

View is from the westbound lane on Route 26. Granite Reliable Wind Farm is visible on the left side of the image.

MOOSE PATH SCENIC BYWAY (RT. 26), MILLSFIELD

EXISTING CONDITIONS: NORMAL VIEW

VIEW NOTE

When printed on 11x17" paper, viewer should hold this image approximately 17" from eye to replicate actual view.

MOOSE PATH SCENIC BYWAY (RT. 26), MILLSFIELD

PHOTOSIMULATION: NORMAL VIEW

VIEW NOTE

When printed on 11x17" paper, viewer should hold this image approximately 17" from eye to replicate actual view.

SIGNAL MOUNTAIN FIRE TOWER (6)

MILLSFIELD

OVERALL VISUAL IMPACT **LOW-MEDIUM**

The original wooded 37-foot tall fire tower on Signal Mountain (elevation 2,673 feet) in Millsfield was constructed in 1911 by the NH Timberland Owners. It was replaced with a steel tower in 1917 and again in 1937 and remained in service until 1980. The tower still stands but is primarily used for communications equipment. The tower is not part of the NH Division of Forests and Lands' Fire Lookout Tower Quest Program, which is designed to increase the public's awareness of, and appreciation for, the role that fire towers play in the protection of NH's forests.

The structure and observation platform below the cab is still accessible, but stairs are missing. The summit of Signal Mountain is completely wooded so the only views are from the fire tower. Reports from hikers posted on various websites indicate that access to the summit is difficult, with portions of the former jeep trail obliterated, requiring some amount of bushwhacking.

Proposed Transmission Corridor

The 320-kV DC transmission line will be located approximately 0.75 mile west of Signal Mountain. The line will be installed in a new 120-foot wide corridor on galvanized steel lattice structures that will range in height from 75 to 100 feet in the foreground view.

Cultural Value: Low

A high point of land overlooking Millsfield Pond. The site itself is not a designated scenic resource since the fire tower is no longer operational.

Visual Quality: High

The summit is wooded so there are limited viewing opportunities. Panoramic views of the surrounding mountains and valleys are possible from the fire tower.

Scenic Significance: Medium

Signal Mountain Fire Tower (photo source: http://www.firelookout.org/lookouts/nh/signal.htm)

Context Photos area around Signal Mountain and approach up trail to the Fire Tower.

PHOTO 1: From from ATV trail/gravel roadway leading to Signal Mountain.

Photo by LandWorks

PHOTO 2: East facing view from the west shoreline of Millsfield Pond. Signal Mountain is visible. The top of two structures will be visible in the tree line at the base of the mountain (see Millsfield Pond Photosimulation).

Photo by LandWorks

PHOTO 3: Forest harvest clearing on trail leading to Signal Mountain. The project is not visible from this viewpoint.

Photo by LandWorks

PHOTO 4: Wooded trail to Signal Mountain. The project is not visible from this viewpoint

SIGNAL MOUNTAIN FIRE TOWER (6)

MILLSFIELD

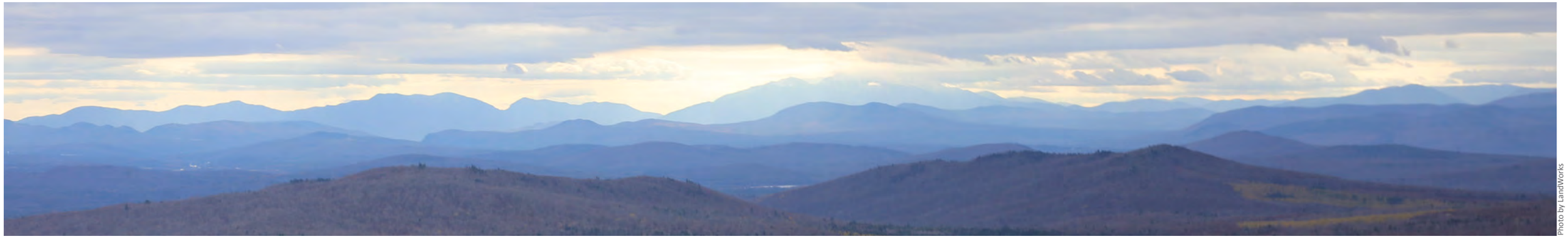


Photo by LandWorks

Southeast facing view from the Signal Mountain Fire Tower. White Mountains are visible in the background. The NPT project will not be visible in this view.

Photo by LandWorks

Northeast view from the Signal Mountain Fire Tower. Umpagog Lake is visible in the background, 8 miles from the Fire Tower. The NPT Project will not be visible in this view.

Photo by LandWorks

North view from the Signal Mountain Fire Tower. The road corridor and agricultural clearings in the midground is Route 26 Moose Path Scenic Byway. The NPT Project will be visible in the western side of this view (see photosimulation on following pages).

Photo by LandWorks

West view from the Signal Mountain Fire Tower. The road corridor and agricultural clearings in the midground is Route 26 Moose Path Scenic Byway. The NPT Project will be visible in the western side of this view (see photosimulation on following pages).

VISUAL IMPACT ASSESSMENT

Visual Effect: Medium

- The transmission structures extend in a line throughout most of the horizontal field of view.
- The transmission corridor is evident as a strong man-made line when seen from the viewer-superior position.
- The transmission structures will appear as relatively small objects in a large-scale landscape.
- The transmission corridor will create moderate contrasts in color, form, and line between Bragg Pond and Route 26.

Mitigation

- Locating the transmission line in commercial forestland, where there is considerable evidence of ongoing harvesting and other management activities.
- Selecting a route that avoids locations where structures would be seen against the sky.

User Groups: Hikers and ATV riders

User Expectation: Low

- Signal Mountain is surrounded by commercial forestland that has been actively harvested in recent years. Viewer expectation will be influenced by cutting patterns and haul roads that crisscross the landscape below.
- The summit is wooded, so the fire tower affords the only way to gain a view into the landscape. Access is questionable.

Extent, Nature, and Duration of Public Use: Low

- According to website account, very few people access Signal Mountain for recreational purposes. The trail is indistinct and difficult to follow in places.
- The fire tower is currently used to support telecommunications equipment. If there ever were views from the summit, they have been lost to forest growth.

Overall Visual Impact: Low-Medium

The construction of a new transmission line will have a low-medium overall visual impact on the view from the Signal Mountain Fire Tower. The NPT project should not result in a substantial change in the way people now use or enjoy the fire tower.

- The NPT project will introduce a man-made element into a working landscape that already has evidence of recent harvesting operations.
- The summit of Signal Mountain is challenging to access and not particularly rewarding, due to the lack of openings in the forest cover and the condition of the fire tower.

Millsfield Works Cited

Vissering, Jean and Kokx, Thomas for Noble Environmental Power LLC. Granite Reliable Power Windpark Visual Impact Assessment. January 4, 2008.

Forest Fire Lookout Association Website. http://www.firelookout.org/lookouts/nh/signal.htm

NH Department of Transportation Scenic and Cultural Byways Website. http://www.nh.gov/dot/programs/scbp/tours/moosepath.htm

NH Department of Transportation. Moose Path Trail Details Brochure. PDF.

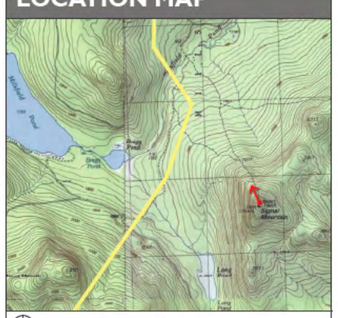
NH Fish & Game Designated Trout Pond Website. http://www.wildlife.state.nh.us/fishing/trout-designated.html

North Country Council. North Country Scenic Byways Council. Moose Path Trail Corridor Management Plan. Draft for Public Hearing: August 25, 2015.

SIGNAL MOUNTAIN FIRE TOWER, MILLSFIELD

EXISTING CONDITIONS: PANORAMA

LOCATION MAP



1 MILE

TECHNICAL INFORMATION

		EXISTING	PROPOSED
TRANSMISSION LINE	115-kV structure type	N/A	N/A
	Height range of visible 115-kV structures	N/A	N/A
	320-kV structure type	N/A	Galvanized Steel Lattice
	Height range of visible 320-kV structures	N/A	65 - 105 feet
	Right-of-way width	N/A	120 feet

PHOTOGRAPH	**Date and time:** 10/30/13 at 12:50pm	**Location:** 44.761152° N, -71.227231° W	**Viewing Direction:** Northwest
	Distance to visible structures: 1.39 to 4.69 miles	**Number of transmission structures visible in the photosimulation:** 24	
	Camera Focal length (50mm equivalent): 35mm	**Camera Make/Model:** Canon EOS 6D	**Photo Source:** LandWorks

NOTES

GENERAL NOTES

Simulation is based upon preliminary design plans. Structure design and location will be finalized during the detail design and permitting process.

PHOTOSIMULATION PRODUCTION

By Terrence J. DeWan & Associates

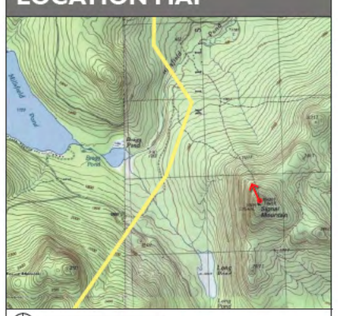
VIEW DESCRIPTION

View is from Signal Mountain Fire Tower. Route 26 is visible on the right side of the image.

SIGNAL MOUNTAIN FIRE TOWER, MILLSFIELD

PHOTOSIMULATION: PANORAMA

LOCATION MAP



1 MILE

TECHNICAL INFORMATION

		EXISTING	PROPOSED
TRANSMISSION LINE	**115-kV structure type**	N/A	N/A
	Height range of visible 115-kV structures	N/A	N/A
	320-kV structure type	N/A	Galvanized Steel Lattice
	Height range of visible 320-kV structures	N/A	65 - 105 feet
	Right-of-way width	N/A	120 feet

PHOTOGRAPH	**Date and time:** 10/30/13 at 12:50pm	**Location:** 44.761152° N, -71.227231° W	**Viewing Direction:** Northwest
	Distance to visible structures: 1.39 to 4.69 miles	**Number of transmission structures visible in the photosimulation:** 24	
	Camera Focal length (50mm equivalent): 35mm	**Camera Make/Model:** Canon EOS 6D	**Photo Source:** LandWorks

NOTES

GENERAL NOTES

Simulation is based upon preliminary design plans. Structure design and location will be finalized during the detail design and permitting process.

PHOTOSIMULATION PRODUCTION

By Terrence J. DeWan & Associates.

VIEW DESCRIPTION

View is from Signal Mountain Fire Tower. Route 26 is visible on the right side of the image.

SIGNAL MOUNTAIN FIRE TOWER, MILLSFIELD

EXISTING CONDITIONS: NORMAL VIEW (WEST)

VIEW NOTE

When printed on 11x17" paper, viewer should hold this image approximately 17" from eye to replicate actual view.

SIGNAL MOUNTAIN FIRE TOWER, MILLSFIELD

PHOTOSIMULATION: NORMAL VIEW (WEST)

VIEW NOTE

When printed on 11x17" paper, viewer should hold this image approximately 17" from eye to replicate actual view.

SIGNAL MOUNTAIN FIRE TOWER, MILLSFIELD

EXISTING CONDITIONS: NORMAL VIEW (NORTHWEST)

VIEW NOTE

When printed on 11x17" paper, viewer should hold this image approximately 17" from eye to replicate actual view.

SIGNAL MOUNTAIN FIRE TOWER, MILLSFIELD

PHOTOSIMULATION: NORMAL VIEW (NORTHWEST)

VIEW NOTE

When printed on 11x17" paper, viewer should hold this image approximately 17" from eye to replicate actual view.

DUMMER DESCRIPTION

Land Area: 48.0 square miles (NHES)

Inland Water Area: 1.3 square miles (NHES)

Population: 354 residents (NHES)

Population Density: 7.4 persons per square mile (NHES)

Town Location: Dummer is located in Coos County, and is centrally positioned between Stark, Milan, Cambridge, Errol, Millsfield and Odell.

Study Area: The Study Area covers the western area of Dummer, extending from the north town boundary to the south and leaving the eastern side of town out. The Study Area covers 78.08% of the total land area (24,566 acres).

Physical Characteristics

The town of Dummer is located northeastern of the White Mountain National Forest. The topography varies in elevation. A series of peaks include Cummings Mountain, Bickford Hill, Dummer Hill, Cow Mountain, Sugar Hill, and Veezey Hill are over 1,700 feet in elevation. The Pontook Lease Area is one of the few large tracts of protected conservation land located within town. The Dummer Ponds, Mud Pond, Sessions Pond, the Androscoggin River, and Pontook Reservoir provide a variety of recreational opportunities. Furthermore, the McLaughlin/ Faulkenham, Pontook Reservoir and Lease areas, Bofinger Conservation Area and BAA, and 13 Mile Woods supply access to Dummer's protected natural resources.

Demographics

The population has remained relatively steady in Dummer; during the 1980's there was a temporary population increase to approximately 390 residents, approximately 40 more residents than reside there today. The median age of residents is approximately 47 years of age. Approximately 11% of residents 25 years of age or older have attained a Bachelor's degree or higher (NHES).

Cultural Development Patterns

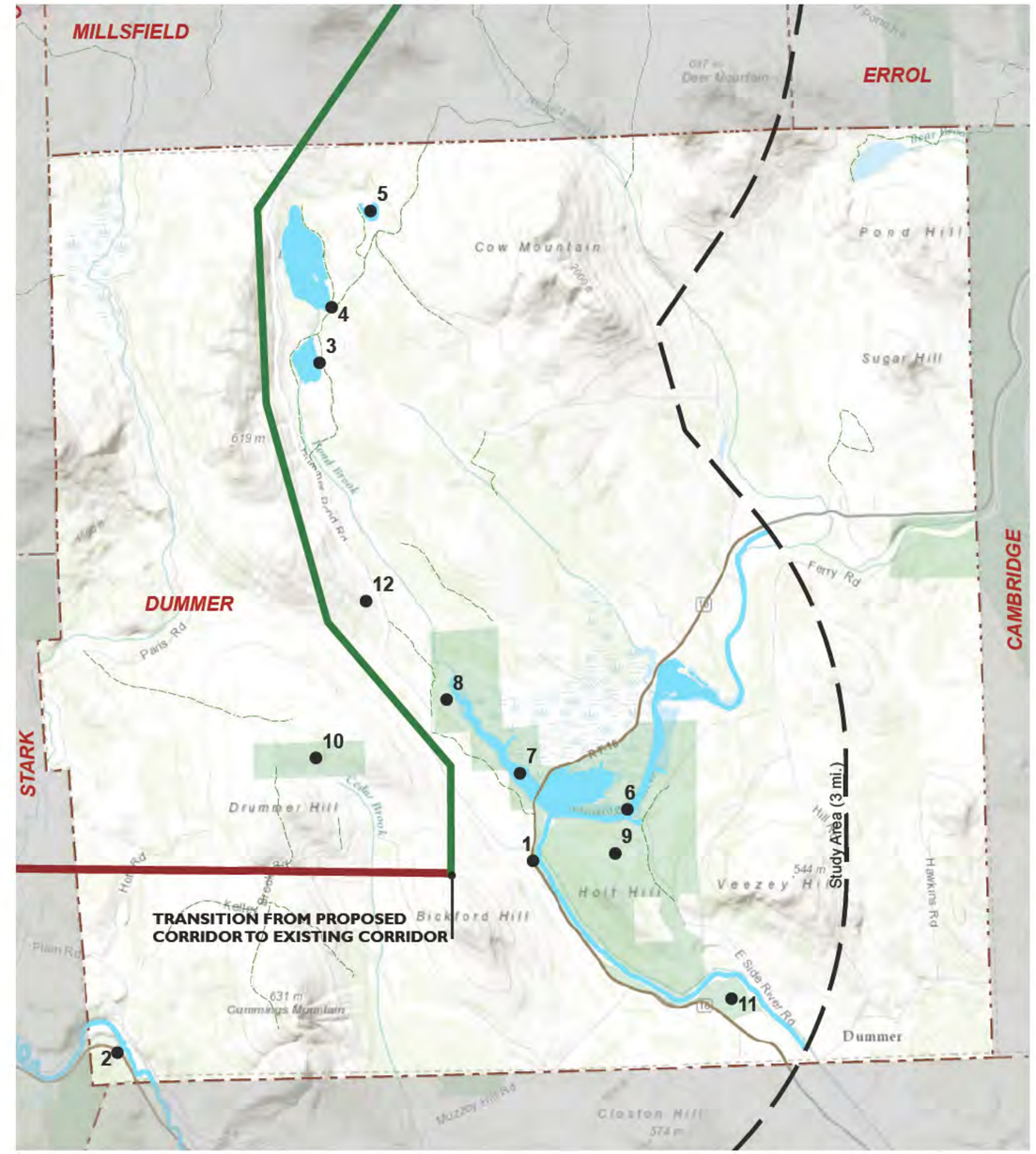
Dummer officially incorporated in 1848. The 2011 Dummer Master Plan notes that existing land use patterns consist primarily of small residential areas scattered throughout predominately forested area and notes developed areas occupy slightly more than 1% of the town's total land base. Over 70% of the land in Dummer is devoted to timber harvesting and agricultural operations.

Of the developed areas in Dummer, approximately 44% is residential and 56% public utility (NHES). The majority of residential development located in rural settings in the southeast portion of town. The area of East Dummer on Hill Road is recognized as the town center, with the town building and library, highway department building, Willis Cemetery and the Methodist Church located there.

The Pontook Hydroelectric facility on the Androscoggin River in Dummer and the Granite Reliable Wind Project, which has an electric transmission line that connects to a substation in Dummer are significant local and regional energy projects that have been developed. The master plan identified West Dummer, East Dummer, and Pontook as villages, each with their own school and cemetery.

Land Use Planning

Land use is monitored and regulated by the Planning Board and the Zoning Board of Adjustment, whose members are elected by the public (Master Plan). The Planning Board aims to encourage growth while preserving the character of town. The master plan recommends that development is monitored and limited, and that current maps detailing water resources are generated and maintained.



EXISTING TRANSMISSION CORRIDOR
PROPOSED TRANSMISSION CORRIDOR
TRANSITION STATION
SUBSTATION
OTHER TRANSMISSION LINE
SCENIC RESOURCE (SEE SCENIC RESOURCE TABLE)
CONSERVATION AREA
WATER RESOURCE
SCENIC BYWAY
1 MILE

DUMMER SCENIC RESOURCES

Proposed & Existing Transmission Corridor

The 320-kV transmission line corridor will run 8.9 miles through Dummer. A new transmission corridor will run for 6.0 miles north-south in a new right-of-way between the north town boundary and Bickford Hill. The transmission line will tie into an existing transmission corridor at Bickford Hill that runs 2.8 miles east-west to the west town boundary.

Physical Features: North of Bickford Hill, where there is no existing transmission line corridor, the land is undeveloped forested land. West of Bickford Hill, there is an existing corridor. The existing corridor contains a 115-kV transmission line supported on wooden H-frame structures within a 150-foot wide corridor that is currently cleared to approximately 115 feet. The corridor runs east-west for 2.9 linear miles in the southwestern portion of town. The wooden H-frame structures range in height from 42 feet to 47.5 feet.

Surrounding Topography: The land in the vicinity of the transmission corridor is characterized by rolling terrain. The corridor crosses side slopes of Dummer Hill and Bickford Hill.

Vegetation: Vegetation bordering the transmission corridor is typically hemlock-hardwood, northern hardwood-conifer, and lowland spruce-fir (WAP).

Adjacent Land Use: Land in the vicinity of both the new and existing transmission corridor is predominantly forested. Both the new and existing corridors intersect with ATV and snowmobile trails.

Proposed Transmission Corridor

The 320-kV DC transmission line will be located in a new 120-foot wide cleared corridor from the north boundary of Dummer to Bickford Hill. Structures will range in height from 70 to 115 feet.

Changes within Existing Transmission Corridor

The south side of the existing transmission corridor will be cleared an additional 10± feet. The 115-kV transmission line will be relocated within the corridor to the south. The relocated 115-kV structures will range in height from 74.5 to 106 feet. The 320-kV DC transmission line will be installed on the north side of the corridor on structures that range in height from 95 to 135 feet (only three structures are taller than 120 feet, with one structure reaching the height of 135 feet).

TABLE 1-5: DUMMER SCENIC RESOURCES

#	SCENIC RESOURCE	DESCRIPTION	SOURCE	OWNERSHIP	DISTANCE TO CORRIDOR	CULTURAL VALUE	POSSIBLE VISIBILITY	VISUAL QUALITY	SCENIC SIGNIFICANCE
1	Moose Path Trail Scenic Byway	NH Rt 16. State designated Scenic & Cultural Byway.	8	NH Dept. of Transportation	0.6 mi	MEDIUM	YES	HIGH	MEDIUM-HIGH
2	Woodland Heritage Trail Scenic Byway	NH Rt 110. State designated Scenic & Cultural Byway.	8	NH Dept. of Transportation	1.3 mi	MEDIUM	NO		
3	Little Dummer Pond	Publicly accessible waterbody. NH Designated Trout Pond.	21 / 27	NH Fish and Game Dept.	0.3 mi	MEDIUM	YES	MEDIUM	MEDIUM
4	Big Dummer Pond	Publicly accessible waterbody. NH Designated Trout Pond.	21 / 27	NH Fish and Game Dept.	0.5 mi	MEDIUM	YES	MEDIUM	MEDIUM
5	Mud Pond	Waterbody with limited public access. NH Designated Trout Pond.	21 / 27	NH Fish and Game Dept.	0.6 mi	LOW	YES		
6	Androscoggin River/Northern Forest Canoe Trail	River not designated in the NH River Management Program with public portage access. Northern Forest Canoe Trail.	30/C	State	0.7 mi	LOW	YES		
7	Pontook Reservoir	Publicly accessible waterbody (boat ramp and portage access). Pontook Dam (hydro power facility).	11 / 2 / 22 / 20	State	0.7 mi	MEDIUM	YES	HIGH	MEDIUM-HIGH
8	Pontook Reservoir State Conservation Land	Conservation land around western stretch of Pontook Reservoir, located west of Route 16 causeway.	21	State	0.6 mi	MEDIUM	YES	MEDIUM	MEDIUM
9	Pontook Lease Area	Conservation land southeast of Pontook Reservoir.	21	Private (conservation easement)	0.7 mi	LOW	YES		
10	McLaughlin/ Faulkenham	Conservation easement.	21	Private	0.4 mi	LOW	YES		
11	Paul O. Bofinger Conservation Area	Wildlife Management and Conservation Area. Public access to Androscoggin River.	6	NH Dept of Recreation & Economic Development	2.0 mi	MEDIUM	YES	MEDIUM	MEDIUM
12	State Snowmobile Trail 19, 19A, 117, 119	State-wide Snowmobile trail.	3	Various	Crosses Corridor	LOW	YES		

STATE/REGIONAL SOURCES:

(2) New Hampshire Fish and Game Department Table of Public-access boating and fishing sites in New Hampshire: http://www.wildlife.state.nh.us/Outdoor_Recreation/access_sites_table.htm

(3) New Hampshire Snowmobile Association Map, 2014

(6) State Lands Administered by State of NH Department of Resources and Economic Development and the NH Fish and Game Department, July 2007

(8) New Hampshire DOT Scenic Byway Map, October 2008. http://www.nh.gov/dot/programs/scbp/index.htm

(11) NH State Wildlife Management Areas: http://www.wildlife.state.nh.us/Wildlife/WMA_index.htm

(20) North Woods Wildlife Viewing Areas: http://www.wildlife.state.nh.us/Wildlife/Wildlife_PDFs/Wildlife_Viewing_NWoods.pdf

(21) New Hampshire Fish and Game Department Maps: http://maps.wildlife.state.nh.us/website/maps/

(22) Wildlife Management and Viewing Areas: http://www.visitnh.gov/uploads/itineraries/birdWatching-tour-8-11.pdf

(27) Designated Trout Ponds in New Hampshire: http://www.wildlife.state.nh.us/Fishing/trout_ponds.html

(30) Official List of Public Waters by New Hampshire Department of Environmental Services Water Division, January 17, 2014

LOCAL SOURCES:

(B) Northern Forest Canoe Trail on Upper Ammonoosuc River: http://www.northernforestcanoetrail.org/media/NFCT%20Paddle%20into%20the%20Past%20Itinerary%20v2.pdf

LITTLE DUMMER POND (3)

DUMMER

OVERALL VISUAL IMPACT **LOW-MEDIUM**

Little Dummer Pond is the southernmost of two ponds on the east side of Dummer Pond Road and the Granite Reliable generator lead line, approximately 4.5 miles north of Route 16 and the Pontook Reservoir. The pond is surrounded by actively managed commercial forestland. An unnamed 4WD road on the east side of the pond provides access to a hand-carry shorebank access at its north end and an informal path at its midsection. The Dummer Pond Road is approximately 500 feet from the western bank of the pond at its closest point. The unnamed road on the east side is approximately 150 feet from the pond at its closest point. There is one seasonal camp on the eastern side of the pond, oriented to the west.

Both Big and Little Dummer Ponds are accessed from the Dummer Pond Road. This road parallels the Granite Reliable generator lead line, which is supported on wooden H-frame structures located approximately 450 to 600 feet apart. The land on either side of the road is commercial forestland, with abundant evidence of recent harvesting operation.

Little Dummer Pond (31 acres) is a Designated Trout Pond, a group of 152 lakes and ponds that NHF&G manages specifically for trout. These are fly-fishing-only waterbodies (i.e., ice fishing is not allowed) that offer anglers the opportunity to fish in some of NH's most scenic surroundings, according to the NHF&G website. The pond is relatively shallow, with an average depth of 4 feet and a maximum depth of 13 feet. The pond is stocked with brook trout and brown trout by the New Hampshire Fish and Game Department (NHF&G). There are no formal parking areas or other infrastructure associated with the pond. One informal campsite is located on the eastern shoreline.

Five wooden H-frame transmission structures and approximately 2,600 feet of conductors (part of the Granite Reliable generator lead line) are visible from the mid-section of the pond, below a 600±-foot hill on the west side of the corridor. None of the cleared corridor is visible from the surface of the pond and none of the structures are visible above the horizon. A wooded buffer that varies in width from 30 to 90± feet has been maintained in most areas between the Granite Reliable corridor and Dummer Pond Road in the vicinity of the pond.

Viewshed mapping from the Granite Reliable project VIA indicates that some of the turbines on Fishbrook (a north-south running ridgeline north of the pond) would be visible from the southern half of Little Dummer Pond at distances of 3 to 4 miles.

Proposed Transmission Corridor

The 320-kV DC transmission line will be located in a new 120-foot wide corridor on the west side of the existing Granite Reliable generator lead line. The corridor will be situated 100 to 200± feet in elevation above Dummer Pond Road. The NPT lattice structures will range in height from 75 to 90 feet in the vicinity of the pond. Due to the viewer inferior position (i.e., looking upwards), none of the cleared corridor will be visible. The unnamed hill on the west side of the road will provide a vegetated backdrop for the structures, i.e., none of them will appear above the horizon.

Cultural Value: Medium

Pond with public access

Visual Quality: Medium

Little Dummer Pond is a relatively small pond (31 acres) surrounded by commercial forestland. There is one seasonal camp on the east side of the pond oriented to the west. The existing generator lead line for the Granite Reliable Windpark is visible above the western shoreline at the base of a pronounced ridge that rises approximately 600 feet above the pond. While the existing generator lead line (structures and conductors) and the wind turbines are noticeable, they do not dominate the landscape.

Scenic Significance: Medium

VISUAL IMPACT ASSESSMENT

Visual Effect: Medium

- The NPT line will introduce a second transmission line that will be seen from the pond. The new line will be more visible, due to its taller structure heights and higher position in the landscape.
- The transmission structures and conductors will extend throughout most of the horizontal field of view.
- None of the structures or conductors near the pond will appear above the horizon line.
- Due to recent commercial cutting operations on the hillside overlooking Little Dummer Pond, portions of the ground plane within the transmission corridor may be exposed to view when the line is initially installed. This effect will be temporary, due to the ongoing re-growth of the forest adjacent to the proposed transmission line.

Mitigation

- The corridor is located below the crest of the hill on the west side of the pond and is sited close to the Granite Reliable generator lead line. This alignment will ensure that most of the lattice structures will be seen against a wooded backdrop.

User Groups: Anglers, campers, boaters, hunters, and camp owners.

User Expectation: Low

- While Little Dummer Pond is relatively remote, the evidence of commercial logging operations along the access road, the generator lead line, and the Granite Reliable wind turbines are expected to influence user expectations for scenic quality.

Extent, Nature, and Duration of Use: Low

- The primary users on the pond are anglers and boaters. While this group most likely enjoys the current scenic quality of the resource, it is likely that their primary motivation is the quality of the fishing.
- The access point is not well marked, nor are there any formal facilities associated with the pond. Little Dummer Pond is expected to have lower public use than Big Dummer Pond, given its relative size.

Overall Visual Impact: Low-Medium

The construction of a new transmission line and the view of the structures and conductors will have a low-medium overall visual impact on Little Dummer Pond. NPT should not have an effect on the way people now use the pond and the surrounding landscape.

- The transmission structures will be seen in the context of a commercial forest landscape, where visitors are already accustomed to seeing transmission structures, harvesting operations, and wind turbines.
- The corridor clearing may be visible from the surface of the pond when the transmission line is installed, thus creating a line in the landscape that will contrast with the surrounding landforms. However, this effect will be temporary and will gradually disappear as the surrounding forestland attains greater height.
- The transmission structures and conductors will be visible from the majority of the pond, but they will not change the inherent character of the waterbody.

Dummer Pond Road / ATV Trail Signage

West facing view from water access point at the south end of Little Dummer Pond. Existing Granite Reliable lead line is visible at the base of the hill. NPT project will be visible on the hill above the existing line.

BIG DUMMER POND (4)

DUMMER

OVERALL VISUAL IMPACT **MEDIUM**

Big Dummer Pond is the northernmost of a pair of ponds on the east side of Dummer Pond Road and the Granite Reliable Windpark generator lead line, approximately 5 road miles north of Route 16 and the Pontook Reservoir. The 114-acre pond is surrounded by actively managed commercial forestland. Aerial photographs indicate that a shoreline buffer averaging 250 feet in depth has remained around most portions of the pond after recent harvesting operations.

Both Big and Little Dummer Ponds are accessed from the Dummer Pond Road. This road parallels the Granite Reliable generator lead line, which is supported on wooden H-frame structures located approximately 450 to 600 feet apart. The land on either side of the road is commercial forestland, with abundant evidence of recent harvesting operation. Five of the Granite Reliable turbines are visible from portions of the pond at distances of 2-3 miles.

An unnamed dead-ended 4WD road on the east side of the pond provides access to a hand-carry shorebank access at the southern end. Dummer Pond Road is approximately 225 feet from the western edge of the pond at its closest point; occasional traffic is not visible but is audible to recreational users. The unnamed road on the southeast corner is approximately 60 feet from the pond at its closest point.

Big Dummer Pond is a Designated Trout Pond, one of a group of 152 lakes and ponds that NHF&G manages specifically for trout. These are fly-fishing-only waterbodies (i.e., ice fishing is not allowed) that offer anglers the opportunity to fish in some of NH's most scenic surroundings, according to the NHF&G website. The pond has an average depth of 13 feet and a maximum depth of 32 feet. The pond is stocked with brook trout by the New Hampshire Fish and Game Department (NHF&G). There is no formal parking area or other infrastructure associated with the pond. A group of a dozen± aluminum boats are chained to trees at the water access site, indicating that the pond receives relatively high use from anglers and boaters. According to signs posted on trees near the pond, some of the boats belong to the Androscoggin Valley Fish and Game Association, which maintains a rental boat program for many of the local ponds, including Big Dummer Pond.

Five wooden H-frame transmission structures and approximately 1,500 linear feet of conductors (part of the Granite Reliable generator lead line) are currently visible from the mid-section of Big Dummer Pond during leaf-on conditions, below a 600±-foot hill on the west side of the corridor. In addition, structures associated with the Granite Reliable substation are visible above the trees at the northwestern end of the pond at a distance of 1/3 mile from the edge of the water. None of the cleared corridor is visible from the surface of the pond and none of the structures are visible above the horizon. A 30 to 90±-foot wooded buffer has been maintained in most areas between the Granite Reliable corridor and Dummer Pond Road in the vicinity of the pond. In general, the generator lead line near Big Dummer Pond is less visible than the comparable segment on the west side of Little Dummer Pond, due to the difference in elevation and vegetation types on the hillside.

Proposed Transmission Corridor

The 320-kV DC transmission line will be supported on galvanized steel lattice structures located in a new 120-foot wide corridor on the west side and uphill of the existing Granite Reliable generator lead line. At the southern end of Big Dummer Pond, the NPT corridor will be over 200 feet in elevation above Dummer Pond Road, where the hill is over 600 feet in height. At the northern end of the pond, the hill descends to approximately 100 feet above water level where the NPT line will cross the Granite Reliable line. The NPT structures will range in height from 75 to 90 feet in the vicinity of the pond, except for two structures (100 feet and 105 feet) where additional height is needed to cross the existing line. As seen in the photosimulation from the southern end of the pond, up to ten structures will be visible on the hillsides on the west and north sides of the pond at distances of 0.5 to 1.1 miles. The amount of each structure visible varies based on the tree height and the location

Some of the ground surface within the cleared NPT corridor may be initially visible from the pond due to commercial harvesting operations on the hillside within the past 20 years. Two of the NPT structures will be silhouetted against the sky as the line descends the hill at the north end of the pond.

Cultural Value: Medium

Pond with public access

Visual Quality: Medium

Big Dummer Pond is a relatively large pond (114 acres) surrounded by commercial forestland. There are three seasonal camps on the pond – two on the eastern shore and one on a small island in the southern half of the pond – all oriented to the west toward a pronounced sloping ridge. The existing generator lead line for the Granite Reliable Windpark is visible above the western shoreline. The island in the southern third of the pond is a focal point, adding visual interest and configuration to the shoreline. The view is focused on the waterbody, the mature trees that define its edge, and the 600±-foot hillside on the west. While the existing generator lead line (structures and conductors) and the wind turbines are noticeable, they do not dominate the landscape.

Scenic Significance: Medium

Big Dummer Pond boat launch. The project is visible from this location. See photosimulation.

VISUAL IMPACT ASSESSMENT

Visual Effect: Medium

- The NPT line will create a second transmission line visible from the pond. The new line will be more visible than the Granite Reliable generator lead line, due to its taller structure heights and more prominent location on the hillside.
- Due to recent commercial cutting operations on the hillside overlooking Big Dummer Pond, portions of the ground plane within the transmission corridor may be exposed to view when the line is initially installed. This effect will be temporary, due to the ongoing re-growth of the forest adjacent to the proposed transmission line.
- The transmission structures and conductors will extend throughout most of the horizontal field of view from the southern end of the pond (as seen in the photosimulation).
- At least two of the structures will appear above the horizon, as seen from the southern portion of the pond.

Mitigation

- Most of the corridor is located well below the crest of the hill on the west side of the pond and is sited close to the Granite Reliable generator lead line. Most of the lattice structures will be seen against a wooded backdrop.

User Groups: Anglers, campers, boaters, hunters, and camp owners.

User Expectation: Low

- While Big Dummer Pond is relatively remote, it is surrounded by actively harvested commercial forestland. Recreational users already experience a landscape (both along the access road and on the pond itself) that has been substantially altered by commercial activity.
- Granite Reliable Windpark turbines are visible from portions of the access road and the pond.

Granite Reliable Wind generator lead line parallels the Dummer Pond Road and Dummer Ponds.

Extent, Nature, and Duration of Use: Medium.

- The primary users on the pond are anglers and boaters. While this group most likely enjoys the current scenic quality of the resource, it is likely that their primary motivation is the quality of the fishing.
- The access point is not well marked, nor are there any formal facilities associated with the pond. Big Dummer Pond is expected to have low to moderate public use.

Overall Visual Impact: Medium

The construction of a new transmission line and the view of the structures and conductors will have a medium overall visual impact on Big Dummer Pond. NPT should not have an effect on the way people now use the pond and the surrounding landscape.

- The transmission structures will be seen in the context of a commercial forest landscape, where visitors are already accustomed to seeing transmission structures, harvesting operations, and wind turbines.
- The corridor clearing may be visible from the surface of the pond when the transmission line is installed, thus creating a line in the landscape that will contrast with the surrounding landforms. However, this effect will be temporary and will gradually disappear as the surrounding forestland attains greater height.
- The transmission structures and conductors will be visible from the majority of the pond, but they will not change the inherent character of the waterbody.

BIG DUMMER POND, DUMMER

EXISTING CONDITIONS: PANORAMA

Boat Launch at Big Dummer Pond

LOCATION MAP

TECHNICAL INFORMATION

		EXISTING	PROPOSED
TRANSMISSION LINE	**115-kV structure type**	N/A	N/A
	Height range of visible 115-kV structures	N/A	N/A
	320-kV structure type	N/A	Galvanized Steel Lattice
	Height range of visible 320-kV structures	N/A	75 - 105 feet
	Right-of-way width	N/A	120 feet

PHOTOGRAPH	**Date and time:** 10/1/14 at 10:00am	**Location:** 44.688670° N, -71.281743° W	**Viewing Direction:** Northwest
	Distance to visible structures: 0.52 to 1.35 miles	**Number of transmission structures clearly in the photosimulation:** 8	
	Camera Focal length (50mm equivalent): 35mm	**Camera Make/Model:** Nikon D7100	**Photo Source:** TJD&A

NOTES

GENERAL NOTES

Simulation is based upon preliminary design plans. Structure design and location will be finalized during the detail design and permitting process.

PHOTOSIMULATION PRODUCTION

By Terrence J. DeWan & Associates

VIEW DESCRIPTION

View is from the public access point on Big Dummer Pond. An existing generator lead line from the Granite Reliable Wind Farm is visible on the hillside.

BIG DUMMER POND, DUMMER

PHOTOSIMULATION: PANORAMA

Boat Launch at Big Dummer Pond

LOCATION MAP

TECHNICAL INFORMATION

		EXISTING	PROPOSED
TRANSMISSION LINE	**115-kV structure type**	N/A	N/A
	Height range of visible 115-kV structures	N/A	N/A
	320-kV structure type	N/A	Galvanized Steel Lattice
	Height range of visible 320-kV structures	N/A	75 - 105 feet
	Right-of-way width	N/A	120 feet

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PHOTOSIMULATION PRODUCTION

By Terrence J. DeWan & Associates.

VIEW DESCRIPTION

View is from the public access point on Big Dummer Pond. An existing generator lead line from the Granite Reliable Wind Farm is visible on the hillside.

BIG DUMMER POND, DUMMER

EXISTING CONDITIONS: NORMAL VIEW

VIEW NOTE

When printed on 11x17" paper, viewer should hold this image approximately 17" from eye to replicate actual view.

BIG DUMMER POND, DUMMER

PHOTOSIMULATION: NORMAL VIEW

VIEW NOTE

When printed on 11x17" paper, viewer should hold this image approximately 17" from eye to replicate actual view.

OVERALL VISUAL IMPACT **MEDIUM**

The Pontook Reservoir is a 379-acre impoundment created by the Pontook Dam on the Androscoggin River on the east side of Route 16 (Moose Path Trail Scenic Byway) in Dummer. The effects of the dam are felt for two miles of the main river channel upstream. The impoundment includes a large reservoir north of the river as well as a much narrower mile-long channel on the west side of Route 16.

The Androscoggin River flows 164 miles from Lake Umbagog in Errol, through Dummer, and on to the tidewater at the Brunswick Dam in Brunswick, Maine. The river provides Dummer residents and visitors with good opportunities for fishing and boating and is one of the Town's most important aesthetic resources. In addition, the Androscoggin's water is used to produce electricity at the Pontook Hydroelectric Facility (Dummer Master Plan 2000).

Pontook Hydro is owned and operated by Brookfield and is one of ten hydropower generating facilities that the company operates on the Androscoggin River in New Hampshire and Maine. The original timber crib dam was constructed in 1877 and rebuilt in 1909. The hydro facility was developed and dedicated in 1987, using the natural flow of the river to generate electricity. As part of its Federal Energy Regulatory Commission license, Brookfield provides water releases into the channel for recreation and scenic enjoyment, as well as continuous flow releases to maintain aquatic populations.

Recreational facilities at the reservoir include:

- a concrete boat launch into the reservoir
- a pathway to the Androscoggin River below the dam for portaging and canoe/raft launching
- a 20,000 SF paved parking are for approximately 30 vehicles
- interpretive signage on the cultural and natural history of the area
- picnic tables
- an informational kiosk
- restrooms
- open lawn areas above the dam for multi-purpose activities.

This section of the Androscoggin River is part of the Northern Forest Canoe Trail, a 740-mile series of rivers and lakes linking waterways in New York, Vermont, Quebec, New Hampshire, and Maine. Paddlers take out above the Pontook Dam and portage over a well-marked trail below the dam. This area marks the start of the Pontoon Rapids, a two-mile series of Class II-III whitewater below the dam that ends at the Paul O. Bofinger Conservation Area (the Northern Forest Canoe Trail, The Official Guidebook).

The reservoir has an average depth of 4 feet and a maximum depth of 15 feet. There are three access points into the waterbody: a boat launch at the western end of the dam; a canoe/cartop access at the north end of the Route 16 causeway; and a shorebank access at the upper reaches of the reservoir. According to the DeLorme Atlas and Gazetteer, Pontook Reservoir is a warm-water fishery, where anglers can expect to find large-mouth bass, pickerel, and horned pout.

Route 16 between Errol on the north and Gorham on the south is part of the state-designated Moose Path Trail Scenic Byway. The Byway is known for its abundant historic, cultural, and scenic resources, and for the potential to spot moose along the road. The NH DOT Website offers this description of this section of the Byway: *"Between Berlin and Errol you'll come across the Pontook Reservoir, offering great wildlife viewing opportunities and public access points, as well as restrooms and interpretive signs. The class III rapids below the dam are the most challenging on the Androscoggin, making this area a favorite among canoeists, kayakers, tubers and rafters. The Pontook Reservoir also marks the beginning of the real moose country in northern New Hampshire."* (NH DOT Moose Path Trail Details Brochure.) The Moose Path Trail Scenic Byway has views of the transmission corridor at three individual locations. This description and analysis focuses on the visibility from Route 16 in Dummer. See the Subarea 1 Impact Summary for an overall visual impact assessment for each resource.

In addition to the Pontook Reservoir and Androscoggin River, some of the other highlights that draw people to the Byway include:

- Northern Forest Heritage Park and the Brown Pulp & Paper Company House Museum in Berlin
- 13 Mile Woods Scenic Area
- Route 26 Wildlife viewing area, Dixville Notch State Park, and the historic Balsams Resort in Dixville Notch
- Lake Francis State Park and Connecticut Lakes State Forest in Pittsburg.

The topography in the vicinity of the reservoir consists of low wooded hills in the midground and more pronounced mountains in the background. The closest named landform is Bickford Hill, rising approximately 700 feet above the surface of the reservoir, 1.1 miles southwest of the Pontook Dam. Recent forest management operations on Bickford Hill have resulted in vegetation that is more uniform in color and texture when compared to hills with older tree growth (See Photo 1). Several of the mountains and foothills in Nash Stream Forest are seen in the background to the northwest from the Route 16 causeway and the wider portion of the reservoir near the dam.

The most recent addition to the visible landscape is the Granite Reliable Windpark, located on Fishbrook, Owlhead Mountain, and Mount Kelsey, north of the reservoir, which was approved by the SEC in 2009 and became operational in 2011. On a clear day over 24 turbines can be seen from parts of the reservoir, with the closest being 6.3 miles away. The turbines are visible over a horizontal viewing angle of approximately 8 degrees from the parking lot and the southern end of the reservoir. The turbines are only visible for a brief time to northbound traffic on Route 16 before they disappear behind a low hill in the foreground.

Proposed Transmission Corridor

On the west side of the Pontook Reservoir the 320-kV DC transmission line will be located in a 120-foot wide cleared corridor that follows the Dummer Pond Road and crosses over the Granite Reliable generator lead line approximately one mile from Route 16. The transmission structures will range in height from 70 to 115 feet in the vicinity of the Pontook Reservoir. The structures that will be visible from the reservoir and Scenic Byway will be weathering steel monopoles to minimize contrast in color and form. This includes the structures at the top of Bickford Hill and seven structures located on a hillside 2.0 to 2.5 miles from the Route 16 causeway over the reservoir (see photosimulation). At the top of Bickford Hill, approximately 0.85 mile southwest of the Pontook Dam, the 320-kV DC transmission line will make a 90º turn to the west where it will be co-located in an existing transmission corridor.

Existing Transmission Corridor

Starting on the north side of Bickford Hill, the NPT corridor changes from a new transmission corridor to an upgrade within an existing right-of-way. The existing corridor consists of a 115-kV transmission line supported on wooden H-frame structures within a 150-foot wide corridor that is currently cleared to approximately 115 feet. The easternmost end of the corridor is visible from the reservoir near the dam and from a limited section of Route 16 on the causeway over the Androscoggin River just north of the dam.

Changes within Existing Transmission Corridor. The south side of the corridor will be cleared an additional 10-20± feet and the existing 115-kV transmission line will be relocated to the south on weathering steel monopoles that range in height from 79 to 93 feet. The 320-kV DC transmission line will be installed on structures that range in height from 70 to 115 feet. The visible structures at the top of Bickford Hill will be weathering steel monopole before transitioning to galvanized steel lattice structures.

Cultural Value: Medium

State designated scenic Byway, conservation area that receives moderate use from local and regional visitors.

Visual Quality: High

The visual quality is a composite of the open waters of the reservoir on the east side of Route 16 and the relatively narrow channel on the west; the variety of topography, including sharp profiles of the background mountains in Nash Stream Forest; the patterns of vegetation along the shoreline; and the recreation and water access facilities at the Pontook Dam. Pontook Reservoir is a man-made environment with a multitude of energy and transportation-related infrastructure that are already dominant features, including the Pontook Dam, powerhouse, access roads, a large parking lot, fencing, transmission lines, local distribution lines, Route 16, and the causeway over the reservoir.

Scenic Significance: Medium-High

PHOTO 1: View from southbound lane on Route 16 causeway over Pontook Reservoir. Photograph taken in September 2014. The NPT Project will be visible where it meets existing transmission line on Bickford Hill in the far right of this image.