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Subject: SEC 2015-06 Northern Pass - Addendum to Appendix F of Report by T.J. Boyle Associates LLC
Date: Friday, January 20, 2017 4:41:39 PM
Attachments: [20170120 TJ Boyle Appx F Addendum.PDF](#)

Ms. Monroe:

Attached for filing in the above-referenced matter is the Addendum to Appendix F of the Report by T.J. Boyle Associates LLC on behalf of Counsel for the Public. I certify that a copy of the attached motion has been forwarded to all parties listed on the attached Distribution List. A complete original will follow by mail.

Thank you.
Sandie



Sandra Merrigan, Legal Assistant to Thomas J. Pappas, Esq.

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Scenic Resource Descriptive Evaluation

Introduction

In the report titled *Review of the Northern Pass Transmission Line Visual Impact Assessment*, dated December 29, 2016, T. J. Boyle provides an independent evaluation of potential visual impacts to a limited selection of scenic resources in Section 4.3. Two levels of review were described, first a systematic check list was used to review a selection of 41 resources. As noted in the findings of section 4.3, 29 of the 41 scenic resources reviewed were found to result in unreasonable adverse impacts to aesthetics as a result of the Project. A second more detailed and descriptive method is then described, but a sample of only two scenic resources were provided. The following provides additional detailed assessments of all 29 locations that were found to result in unreasonable impacts.

Summary Information. The descriptive evaluation begins with the **Scenic Resource Name**. While a single name is used for simplicity, scenic resources overlap and it is not unusual that several scenic resources may be involved in a particular descriptive evaluation. The summary information also includes the characterization of the **Potential Visual Impact** as High, Medium or Low, as required by Site 301.05(b)(6), answering the question **Will the Project Result in Unreasonable Impacts**, by applying the criteria from Site 301.14(a). The source of the **Simulation** and the **Town** are noted. In some cases, a photosimulation by DeWan & Associates is used with full awareness of the limitations that are discussed in the Review section 3.7. In addition, a selection of descriptive attributes from T. J. Boyle's field documentation have been included to provide further background on each of these resources. These attributes include:

- **Observation Notes** T. J. Boyle made in the field to characterize the segment and viewpoints.
- **Scenic Attractiveness** is based on intrinsic landscape features. The ratings are:
 - **Indistinctive:** Not attractive, degraded natural or developed areas.
 - **Ordinary:** Most common. Ordinary natural or developed areas, usually no water or visual diversity.
 - **Noteworthy:** May also be common. Nice, pleasant, appealing, often some interesting visual diversity.
 - **Distinctive:** Uncommon. Outstanding, but limited in either angle or duration. Often have visual diversity and/or important views of high quality water.
 - **Superlative:** Rare. Open panoramas, expansive.
- **Number of Visible Residences** close to viewpoint—best approximation
- **Number of Visible Existing Transmission Structures**
- **Scenery Interest** is the importance of scenery in choosing this location for the primary activity from Low to High.

T.J. Boyle gathered field documentation beginning in 2012 and without consideration of SEC criteria that was adopted in December of 2015.

1. Narrative. A brief description of the scenic resource and simulation viewpoint are provided based on the NPT VIA, DOE VIA, T. J. Boyle's fieldwork, and other supplementary information. The intent is to provide a context for the evaluation.

2. Site 301.05(b)(6) Criteria used to characterize potential visual impacts. The factors that a VIA is required to consider are identified in Site 301.05(b)(6). Chapter 2 of the Review discusses each of these factors and their meaning. The evaluation draws from the **Scenic Resource Evaluation Form**, but also the NPT VIA, DOE VIA, Review and other sources.

- a. **The expectations of the typical viewer** are discussed in the Review sections 3.9 and 4.2.
- b. **The effect on future use and enjoyment of the scenic resource** is discussed in the Review sections 3.10 and 4.2.
- c. **The extent of the proposed facility, including all structures and disturbed areas, visible from the scenic resource** is discussed in the Review sections 3.3 and Appendix D List of Potential Scenic Resources.
- d. **The distance of the proposed facility from the scenic resource** is discussed in the Review section 3.3.
- e. **The horizontal breadth or visual arc of the visible elements of the proposed facility** is discussed in the Review section 3.3 and the DOE VIA section 2.4.2.2.
- f. **The scale, elevation, and nature of the proposed facility relative to surrounding topography and existing structures** is discussed in the Review sections 4.4.4 and 4.4.5.
- g. **The duration and direction of the typical view of elements of the proposed facility** is discussed in the DOE VIA section 2.4.3.
- h. **The presence of intervening topography between the scenic resource and elements of the proposed facility**, for instance, as described in the NPT VIA and DOE VIA.

3. Mitigation – Site 301.05(b)(10). The mitigation proposed in the NPT VIA is described.

4. Site 301.14(a) Criteria Relative to Findings of Unreasonable Adverse Effect on Aesthetics. The factors that the SEC is required to consider are identified in Site 301.14(a). Chapter 2 of the Review discusses each of these factors and their meaning. The evaluation draws from the **Scenic Resource Evaluation Form**, but also the NPT VIA, DOE VIA, Review and other sources.

1. **Existing character of the area of potential visual impact**, for instance, as described in the NPT VIA and DOE VIA.
2. **The significance of affected scenic resources and their distance from the proposed facility** is discussed in the Review sections 3.3 and 3.4, and the DOE VIA section 2.4.2.2.
3. **The extent, nature, and duration of public uses** are discussed in the Review sections 3.9 and 4.2.
4. **The scope and scale of the change in the landscape** is represented by the thousands of potentially effected scenic resources identified in the Review Appendix D List of Potential Scenic Resources.
5. **The evaluation of visual impacts in the VIA submitted by the applicant and other relevant evidence**, including the Review.
6. **The extent to which the proposed facility would be a dominant and prominent feature within a natural or cultural landscape of high scenic quality or as viewed from scenic resources of high value or sensitivity** is discussed in the Review section 3.8 and 4.1.
- 7a. **The effectiveness of the measures proposed by the applicant to avoid, minimize, or mitigate unreasonable adverse effects on aesthetics, and the extent to which such measures represent best practical measures** is discussed in the Review section 3.13 and 4.4.

5. Discussion of Unreasonable Adverse Effect on Aesthetics. The Scenic Resource Evaluation concludes with a summary discussion of how the above information is used to determine whether the proposed Project will have an Unreasonable Adverse Effect on Aesthetics of the scenic resource being evaluated.

Scenic Resource Name: Moose Path Scenic Byway (Rt. 26)**Potential Visual Impact:** Medium**Would the Project Result in Unreasonable Impacts:** Yes**Simulation:** DeWan & Associates Attachment 9: Photosimulations of leaf-off conditions (Revised) page 9-39 to 9-46**Town:** Millsfield, New Hampshire**Field Documentation Notes from a Location Near the Simulation**Observation Notes: Wind Turbines Present (in the background)Scenic Attractiveness: NoteworthyNumber of Visible Residences: 2Number of Visible Existing Transmission Structures: 0Scenery Interest: Moderate to High**1. Narrative**

Moose Path Scenic Byway (Route 26) is part of New Hampshire's Scenic and Cultural Byways, and traverses approximately 98 miles of landscape through the state's Great North Woods region. The New Hampshire DOT Scenic and Cultural Byways website indicates that this area offers the "best chance of sighting a moose."¹ The Moose Path Scenic Byway is accessible year-round, and in the area where the proposed corridor crosses the road the landscape is characterized by rolling forested hillsides and mountains. T. J. Boyle selected this site because it is a designated scenic Byway with no existing visibility of transmission infrastructure. The proposed HVDC structures and new right-of-way clearing would be visible from this location. The AADT for this portion of Route 26 is 1400. The DeWan & Associates viewpoint location is approximately 0.75 miles east of the NPT crossing over Route 26 in Millsfield, NH. The Moose Path Scenic Byway is a significant state resource that is visited throughout the year, and therefore has special scenic concern.

2. Site 301.05(b)(6) Criteria used to characterize potential visual impacts**a. Expectations of typical viewer**

The typical viewer along Route 26 is a motorist traveling by vehicle or motorcycle. Motorists utilize the Byway for various reasons, including specifically appreciating scenery along the scenic Byway as well as simply utilizing the road to travel from Errol to Colebrook. Views from this portion of the Byway include low-density residential and agricultural uses as well as the surrounding forested hills and mountains. Further to the west, Route 26 traverses the scenic Dixville Notch and the Balsams Resort. Because this road is part of a designated scenic Byway, the expectations for the typical viewer are considered high. Use expectation for the Byway is also informed by Section 4.2 of the T. J. Boyle Visual Impact Analysis Report and results from the Community Workshops, which indicates that scenery is an important factor for this location.

b. Effect on future use and enjoyment

The Project would introduce a new man-made component within a relatively intact natural landscape, which would be out of character with the existing conditions through this area of the Moose Path Scenic Byway. Although wind turbines are visible in the background, the forested hillsides in the middleground

¹ <https://www.nh.gov/dot/programs/scbp/tours/documents/moosepath.pdf>

and foreground appear otherwise intact, and any forest management is not readily recognizable. The Project would have a negative effect on the future use and enjoyment of the Scenic Byway.

c. Extent of proposed facility, including all structure and disturbed areas, visible from the scenic resource

DeWan & Associates' Moose Path Scenic Byway (Route 26) simulation illustrates portions of seven (7)² new electrical transmission structures and changes to the forest canopy because of ROW clearing that would be visible. The Terrain Viewshed indicates there would be visibility from almost all of the roadway through this area of Millsfield without the benefit of the surrounding forest screening. The Vegetated Viewshed indicates visibility from most areas where vegetation is cleared along the roadway.

d. The distance of the proposed facility from the scenic resource

DeWan & Associates identifies the distances between the Project and the simulation location as ranging from approximately 0.98 miles up to 1.58 miles. The Project would also cross immediately over the road. Other visibility is expected west of this crossing, as well as at other locations along the Byway.

e. The horizontal breadth or visual arc of the visible elements of the proposed facility

The visual arc or visual angle is approximately 18.5 degrees of the view illustrated in the DeWan & Associates simulation.

f. The scale, elevation and nature of the proposed facility relative to surrounding topography and existing structures

Six of the visible structures would be located midway up the ridge when looking northwest from the simulation location. These structures range from 65 to 90 feet in height. The simulation indicates that where visible, more than half of the height of the structures could be viewed from the Byway. The structures would not be skylined above the tops of the surrounding forest canopy when looking northwest. The siting of the corridor in an elevated location along the ridge makes visibility of the proposed structures prominent, and contrast of the structures and conductors with the vegetated backdrop would likely vary based on seasonal and weather conditions.

g. The duration and direction of the typical view of elements of the proposed facility

Visibility of the Project would be to the northwest from the portion of the Moose Path Scenic Byway that lies east of the NPT corridor, and to the southeast from the portion of the Moose Path Scenic Byway that lies west of the NPT corridor. Because varying forms of transportation may be used (e.g. walking, running, biking, driving and/or motorcycling), duration of views would vary, but would be possible while traveling through cleared areas where views of the surrounding landscape is expected.

h. The presence of intervening topography between the scenic resource and elements of the proposed facility

Landform is expected to screen additional structures to the north, but some structures to the south of Route 26 would be visible from locations west of the simulation, where eastbound travelers would be looking southeast along the Byway. Additionally, surrounding forest also helps to screen additional structures, lower portions of the structures that are visible, and views of the cleared ROW (other than when immediately under the road crossing). The seven visible structures described above are based on screened views, including the effect of surrounding vegetation. Overall, although the proposed structures

² The DeWan & Associates simulation technical information states that only 6 structures are visible.

are not skylined when looking northwest, topography would elevate the appearance of the Project in this direction.

Potential Visual Impact Based on Analysis of Factors Under Site 301.05(b)(6)

In summary, at the Moose Path Scenic Byway (Route 26) we determined that there is a high expectation for scenery. The Project would introduce an element with industrial character into parts of a landscape that are primarily natural and undeveloped. Although the proposed structures are not skylined when looking northwest, the Project would be relatively prominent and potentially result in a high level of contrast with the existing forested hillside depending on seasonal and weather conditions. Other structures proposed by Project that are south of Route 26 would likely be skylined when travelers are headed southeast. There would be a negative degradation to the scenic quality of the landscape, which would result in a negative effect to the future use and enjoyment of users of the Moose Path Scenic Byway. We therefore would rate the potential visual impact as medium.

3. Mitigation - Site 301.05(b)(10)

The NPT VIA cites mitigation as follows:

- 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 would be visible.
 - Using weathering steel monopole structures on the north and south sides of Route 26.
- (NPT VIA, p. 1-55)

4. Site 301.14(a) Criteria Relative to Findings of Unreasonable Adverse Effect on Aesthetics

(1) Existing character of the area of potential visual impact

This portion of the Moose Path Scenic Byway is in the Great North Woods region of New Hampshire and has minimal development along the roadside, and the surrounding landscape is generally characterized by forested hills and mountains. Other than an existing wind farm that is visible from some portions of the Moose Path Scenic Byway, views from the roadway are of a predominantly natural landscape with minimal evidence of forest management. During field investigation that T. J. Boyle performed as part of the DOE VIA, we gave a rating of Noteworthy to the Scenic Attractiveness near the DeWan & Associates simulation location.

(2) The significance of affected scenic resources and their distance from the proposed facility

Moose Path Scenic Byway is a designated scenic Byway, which is a scenic resource with state designation and is supported with public funds. Scenic Byways are specifically valued for their scenic quality in the State of New Hampshire. The visible portions of the Project are approximately 0.75 miles from the simulation location, and the Project directly crosses the Byway further west. The State of New Hampshire Division of Travel and Tourism literature describes the Byway as “curvaceous and spectacularly scenic.”³

(3) The extent, nature, and duration of public uses of affected scenic resources

Public uses along the Moose Path Scenic Byway include walking, biking, and driving/motorcycling, and potentially include bus tours and other similar recreational uses, including visiting the Balsams Resort

³ <http://www.visitnh.gov/what-to-do/scenic-drives/great-north-woods.aspx>

property. The duration of use of the scenic resource would vary based on mode of travel, but would typically be longer than a few minutes and potentially several hours of driving along this scenic roadway. The duration of visibility would vary based on mode of travel, but would potentially be a significant portion of the total length of the Byway as it traverses the town of Millsfield.

(4) The scope and scale of the change in the landscape visible from affected scenic resources

The scope and scale of change is considered medium. Although existing views include other surrounding electrical generation facilities (wind turbines), the particular siting of the new NPT corridor, design and character of proposed structures, and extent of visibility would result in a moderately significant change to the existing landscape. Changes to the landscape would be prominent and in direct contrast to the existing character.

(5) The evaluation of the overall daytime and nighttime visual impacts of the facility as described in the visual impacts assessment and other relevant evidence

The above review of visual impacts per 301.05(b)(6) criteria finds the Project to result in medium visual impacts. The NPT VIA found the visual impact to Moose Path Scenic Byway to be low.

(6) The extent to which the proposed facility would be a dominant and prominent feature within a natural or cultural landscape of high scenic quality or as viewed from scenic resources of high value or sensitivity

The Project would result in portions of seven (7) new electrical transmission structures and changes to the forest canopy as a result of ROW clearing being visible from the simulation location, and additional structures would be visible from other locations along the scenic Byway. A significant portion of these structures would be visible along the ridgeline on which they are located. As a result, the Project would be inevitably noticeable in views to the northwest and southeast in the vicinity of the corridor crossing, and would be considered a prominent feature within the visual landscape. Visibility of the surrounding hillsides are typically of a uniform forest cover. The elevated position and contrast of the structures with the surrounding natural landscape would result in the transmission structures being somewhat dominant and prominent as seen from the scenic Byway.

(7) The effectiveness of the measures proposed by the applicant to avoid, minimize, or mitigate unreasonable adverse effects on aesthetics, and the extent to which such measures represent best practical measures

NPT has proposed mitigation as described above. However, it is our contention that for this particular resource, not all of the proposed measures are accurate or adequate. For instance, views of a skylined structure may be possible for travelers west of the crossing headed southeast. Although there is a buffer of space between the proposed Project and the agricultural land to the southeast, this is not a significant visual buffer as the Project elements can easily be seen from this location. The existing clearing at the crossing on the south side of Route 26 would not minimize visual impacts. Changing alignment to minimize views up to the transmission corridor and selecting a road crossing between two reverse curves to limit the time the conductors would reduce visibility of the Project, but this is somewhat negated by the elevated location chosen for the corridor.

Because the proposed structures and corridor clearing would be prominently located on the hillsides around Route 26, visibility of the Project would be in an elevated location that would result in contrast of the galvanized structures and untreated conductors with the background forest, particularly on days with low cloud cover and high visibility. Other forms of mitigation that need to be considered are choosing a corridor that does not place the Project at an elevated location within an otherwise intact forest landscape, utilizing alternative mitigation measures for the structure types and conductors such as Natina Steel and non-specular conductors (all of which are discussed in Section 4.4 of the T. J. Boyle Visual Impact Analysis Report).

From the Moose Path Scenic Byway, mitigation as proposed by NPT would be incomplete and would not represent use of best practical measures.

5. Discussion of Unreasonable Adverse Effect on Aesthetics

The most effective form of mitigation for transmission line projects is the proper siting and alignment of the corridor. In general, siting a new aerial transmission line at elevated locations does not follow generally accepted professional standards in avoidance of visual impacts. We found impacts to this resource unreasonable because of the elevated location of the corridor and because additional mitigation measures, which would be considered best practical measures, could have been proposed. Although the Applicant notes that the route selected prevents structures from being seen against the sky, this is not always the case, and the alignment is still proposed at an elevated location that creates visibility from open areas of this sensitive scenic resource. A route that does not elevate the Project near this scenic resource would be preferable. Alternative colors and treatments to structures and conductors also need to be considered. Landscape mitigation at the road crossing was not proposed. Since additional reasonable mitigation was not pursued, the impact to this resource is found to be unreasonable.

Scenic Resource Name: Bear Brook State Park**Potential Visual Impact:** Medium**Would the Project Result in Unreasonable Impacts:** Yes**Simulation:** DeWan & Associates Attachment 9 Photosimulations of leaf-off conditions (Revised) page 9-191 to 9-194**Town:** Allenstown, New Hampshire**Field Documentation Notes from the Catamount Trail Overlooks**Observation Notes: Interpretive Kiosk Behind Bench at Upper overlook on Catamount TrailScenic Attractiveness: NoteworthyNumber of Visible Residences: 2 from Different overlooks on Catamount TrailNumber of Visible Existing Transmission Structures: 3 from Different overlooks on Catamount TrailScenery Interest: Moderate-High**1. Narrative**

Bear Brook State Park (“Park”) is located in the towns of Allenstown, Deerfield, Hooksett, and Candia, NH. “Bear Brook State Park, with over 10,000 acres, is the largest developed state park in New Hampshire. Located in the southeast region of the state, there is plenty to do and see for everyone. Forty miles of trails through the heavily forested park lead to seldom visited marshes, bogs, summits, and ponds. The park offers a variety of options for hikers, mountain bikers and equestrians.”⁴ The Park is open year-round, though typically only staffed from June 11 to October 30.

The DeWan & Associates simulation location is near the top of Catamount Hill on the Catamount Trail. “Catamount provides access to one of the best open lookouts in the entire park.”⁵ There are two overlooks on Catamount Hill, one that looks towards the Suncook River valley to the northwest, and one of the Allentown landscape to the east and northeast. These generally consist of the surrounding rolling forested hillsides and limited associated development. T.J. Boyle selected this site because it is within a State Park with only limited existing visibility of transmission infrastructure. The proposed 345 kV structures would be visible from these two lookouts atop Catamount Hill. The State of New Hampshire does not record annual visitation numbers, but the Park is noted as being the largest developed State Park in the State that includes one of the last remaining Civilian Conservation Corps (“CCC”) camps in the country. Additionally, the overlooks are special locations and not common within the Park or in the area in general. Based on field observations, the Park receives regular use and is located near a major population center, and the Catamount Trail overlooks are in close proximity the day-use area, which includes Parking, a pond and beach. The NPT VIA indicates that the Park “receives approximately 50,000 annual visitors for hiking, camping” (NPT VIA, p. 6-10). Bear Brook State Park is a significant NH resource that is visited throughout the year, and the Catamount Trail overlooks are a significant resource within the Park, and therefore have special scenic concern.

2. Site 301.05(b)(6) Criteria used to characterize potential visual impacts**a. Expectations of typical viewer**

The typical viewer at the Catamount Trail overlooks is a hiker exploring the trails within Bear Brook State Park. Visitors travel specifically to engage with the various resources within the Park, including the 40

⁴ <http://www.nhstateParks.org/visit/state-Parks/bear-brook-state-Park.aspx>

⁵ http://www.nhstateParks.org/uploads/pdf/Bear-Brook_Trail-Info.pdf

miles of trails. As Catamount Hill is mostly wooded, views from the trail typically consist of the forest and vegetation growing on the hillside, with the exception of the overlooks. Although mostly wooded, the trail and associated overlooks are an integral part of the Bear Brook State Park designated scenic resource, and the expectations for the typical viewer are considered medium. Use expectation for the trail is also informed by the Section 4.2 of the T. J. Boyle Visual Impact Analysis Report and results from the Community Workshops, which indicates that scenery is an important factor for this type of location.

b. Effect on future use and enjoyment

The Project would introduce a tall man-made component within a landscape that has visibility of much smaller structures. Although limited development and a communications tower (east overlook) are visible in the background, the forested areas in the middleground appear otherwise intact. The Project would have a negative effect on the future use and enjoyment of both overlooks on the Catamount Trail.

c. Extent of proposed facility, including all structure and disturbed areas, visible from the scenic resource

DeWan & Associates' Catamount Trail Scenic Viewpoint simulation (northwest view) illustrates portions of three (3) new monopole transmission structures that would be visible. The Terrain Viewshed indicates there would be potential visibility from almost all of the Park without the benefit of the surrounding forest screening. The Vegetated Viewshed does not indicate visibility from most of the heavily forested Park, including the two overlooks that would have Project visibility.

d. The distance of the proposed facility from the scenic resource

DeWan & Associates identifies the distances between the Project and the northwest overlook as ranging from approximately 1.17 miles to 1.21 miles, and the distances between the Project and the east overlook as ranging from approximately 1.4 miles to 3.4 miles (NPT VIA, p. 6-11).

e. The horizontal breadth or visual arc of the visible elements of the proposed facility

For the northwest overlook, the visual arc or visual angle is approximately 16 degrees of the view illustrated in the DeWan & Associates simulation. For the east overlook, the visual arc appears to be as large as 40 degrees.

f. The scale, elevation and nature of the proposed facility relative to surrounding topography and existing structures

Three of the visible structures would be located in the valley when looking northwest from the simulation location. It is unknown how many structures would be visible from the east overlook, though the Terrain Viewshed indicates as many as 90 are potentially visible. More visibility would be possible if vegetation is cleared around the overlooks, which based on field observations has occurred in the past. The height of the proposed structures (110' to 145') relative to the existing structures (44.5' to 87.5') would be out of character with the existing conditions through the areas visible from the overlooks, and multiple types of proposed structures would be visible from the two locations (monopole and galvanized lattice). The simulation indicates that where visible, more than half of the height of the structures could be viewed from the scenic resource. The structures would not be skylined above the tops of the surrounding forest canopy. The size of the structures above the surrounding forest would make visibility of the proposed structures prominent, and the contrast of the structures and conductors with the vegetated backdrop would likely vary based on structure type and material, as well as seasonal and weather conditions.

g. The duration and direction of the typical view of elements of the proposed facility

Duration of the visibility of the Project would likely vary depending on the length of stay, but due to the overlooks' location at the top of the hill would likely be for several minutes as hikers rest and enjoy the view. Views of the NPT would be persistent for the duration of the stay at these overlooks.

h. The presence of intervening topography between the scenic resource and elements of the proposed facility

Landform would screen additional structures to both the west and east of structures that would be visible. Additionally, surrounding forest also helps to screen additional structures to the north of the overlooks, as well as lower portions of the structures that are visible.

Potential Visual Impact Based on Analysis of Factors Under Site 301.05(b)(6)

In summary, at the overlooks on Catamount Hill in Bear Brook State Park, the Project would introduce much taller and more visible structures with industrial character into parts of a landscape that appear natural with limited visible development. Although the proposed structures are not skylined, the Project would be relatively prominent due to the height of the structures and potentially result in a high level of contrast with the existing forested landscape depending on structure type and seasonal and weather conditions. Though not regularly visible, there would be a negative degradation to the scenic quality of the landscape, which would result in a negative effect to the future use and enjoyment of users of trails within Bear Brook State Park. We therefore would rate the potential visual impact as medium.

3. Mitigation - Site 301.05(b)(10)

The NPT VIA cites mitigation as follows:

- Using weathering steel structures to minimize contrast in color and form.
- Maintaining similar spacing and alignment with existing transmission structures to avoid pattern contrasts.

(NPT VIA, p. 6-11)

4. Site 301.14(a) Criteria Relative to Findings of Unreasonable Adverse Effect on Aesthetics

(1) Existing character of the area of potential visual impact

The Catamount Hill overlooks are located on a hill in Bear Brook State Park that is near the main day-use and parking areas. Development within the Park is generally limited to the CCC camps and other Park infrastructure, and some of the heavily forested landscape within the Park appears to be managed for timber. The Catamount Trail is a fairly steep trail with a few benches near the top of the hill, including at or near the overlooks. Views from the overlooks include a predominantly forested rolling landscape with some visible development and a communications tower. During field investigation that T. J. Boyle performed as part of the DOE VIA, we gave a rating of Noteworthy to the Scenic Attractiveness at the simulation location.

(2) The significance of affected scenic resources and their distance from the proposed facility

As referenced above, the Catamount Hill overlooks are considered among the best open lookouts within Bear Brook State Park, which itself is a scenic resource with state designation and supported with public funds. The Park is visited throughout the year, and the Catamount Trail overlooks are a significant resource within the Park, providing access to one of the best views in the Park. The NPT VIA identifies the distances between the Project and the northwest overlook as ranging from approximately 1.17 miles to 1.21 miles, and distances between the Project and the east overlook as ranging from approximately 1.4 miles to 3.4 miles (NPT VIA, p. 6-11).

(3) The extent, nature, and duration of public uses of affected scenic resources

Public uses along the trail include walking, hiking, resting on the benches, and review of the interpretive sign near the northwest overlook. The duration of use would vary, but would typically be at least a few minutes at one or both of the overlooks, and roughly an hour or more on the trail itself.

(4) The scope and scale of the change in the landscape visible from affected scenic resources;

The scope and scale of change is considered medium. Although existing views include a limited amount of existing transmission and communications facilities, the particular design, character and height of the various proposed structures would result in a significant change to the existing visual landscape visible from the overlooks. Changes to the landscape would be prominent and would contrast with the existing character.

(5) The evaluation of the overall daytime and nighttime visual impacts of the facility as described in the visual impacts assessment and other relevant evidence

The above review of visual impacts per 301.05(b)(6) criteria found the Project to result in medium visual impacts. The NPT VIA found the overall visual impact to Bear Brook State Park to be low, and the impact to the Catamount Hill Trail to be medium.

(6) The extent to which the proposed facility would be a dominant and prominent feature within a natural or cultural landscape of high scenic quality or as viewed from scenic resources of high value or sensitivity

The Project would result in portions of three (3) new electrical transmission structures being visible from the northwest overlook, and an unknown number of new structures would be visible from the east overlook. The structures visible from one overlook would not match the structures visible from the other overlook, and these structures would rise well above the surrounding tree line. As a result, the Project would be clearly noticeable in views from both overlooks, and would be considered a prominent feature within the visual landscape.

(7) The effectiveness of the measures proposed by the applicant to avoid, minimize, or mitigate unreasonable adverse effects on aesthetics, and the extent to which such measures represent best practical measures

NPT has proposed mitigation as described above. However, it is our contention that for this particular resource, not all of the proposed measures are accurate or adequate. For instance, using weathering steel structures to minimize contrast in color and form would only apply to the northwest overlook. And while maintaining similar spacing and alignment with existing transmission structures to avoid pattern contrasts may have been a design feature, the existing structures are not readily visible from these overlooks.

Because the proposed structures and corridor clearing would be prominently located in the views, visibility of the Project would result in contrast of the galvanized structures and untreated conductors with the background forested landscape, particularly on days with low cloud cover and high visibility. Other forms of mitigation that need to be considered are undergrounding the line through this area, choosing or designing a corridor that does not require such tall and clearly visible structures, as well as utilizing alternative and consistent mitigation measures for the visible structure types and conductors such as Natina Steel, weathering steel, and non-specular conductors (discussed in Section 4.4 of the T. J. Boyle Visual Impact Analysis Report). From the Catamount Trail Overlooks in Bear Brook State Park, mitigation as proposed by NPT would be inadequate or incomplete, and would not represent use of all best practical measures.

5. Discussion of Unreasonable Adverse Effect on Aesthetics

Through this area, the choice in corridor and design has resulted in very tall structures that rise well above the surrounding tree line, exacerbating visibility of the Project elements. Structures west of Cross Country Road utilized lower H-frame construction, and at a minimum this configuration needs to be used elsewhere

in this area. We found impacts to this resource unreasonable because the above additional mitigation measures could have been taken, and would help to further reduce adverse impacts. Additionally, the combination of both weathering steel monopole and galvanized steel lattice structures would be visible from overlooks within Bear Brook State Park, which only partially reduces the contrast of the Project with the surrounding landscape, and creates an inconsistency in the way in which the corridor is perceived by visitors to this scenic resource. The most effective mitigation measure would be to reduce the structure heights through redesign or rerouting the Project within a corridor that would not require such tall structures. Horizontal configuration of the transmission structures (i.e. H-frame) through this area would significantly help reduce the visibility and prominence of proposed structures and would be more typical for 345 kV construction.

Scenic Resource Name: Big Dummer Pond**Potential Visual Impact:** High**Would the Project Result in Unreasonable Impacts:** Yes**Simulation:** DeWan & Associates Attachment 9: Photosimulations of leaf-off conditions (Revised) page 9-57 to 9-66**Town:** Dummer, New Hampshire**Field Documentation Notes from a Location Near the Simulation**Scenic Attractiveness: DistinctiveNumber of Visible Residences: 0Number of Visible Existing Transmission Structures: 8 / 10Scenery Interest: High**1. Narrative**

Big Dummer Pond, in Dummer, NH, is a 114-acre public great pond that is surrounded by lands owned and operated by Wagner Forest Management. Views from the lake consist of generally undeveloped shorelines and surrounding forested hills. The view illustrated in DeWan & Associates Attachment 9 is from the southern end of the pond, near a forest / recreational access road. Views do include visibility of an existing transmission line, forest harvesting activities and a wind generation facility. Stands in different stages of forest management are apparent on the hillside to the west. The transmission line from Granite Reliable Wind is only just visible at the bottom of the hill; the proposal is to locate the NPT in a new ROW two-thirds of the way up the hill to the west. There are three small camps constructed on Big Dummer Pond, including one that is noted as the Dummer Pond Sporting Club. The area is generally accessible to the public for recreation, and there is an informal hand-carry boat launch near the southern end of the pond closest to the access road. Several boats are chained to trees at this location. It is a designated trout pond and is managed by NH Fish & Game. The area is noted for the quality of its moose hunting. Despite some visibility of surrounding development, views from Big Dummer Pond contain a relatively high scenic quality.

2. Site 301.05(b)(6) Criteria used to characterize potential visual impacts**a. Expectations of typical viewer**

Based on observations during field investigation, we would expect the typical viewer to engage in water based activities including non-motorized boating, fishing, swimming, and hiking along the shoreline. Views from the lake consist of the lake, with minimally developed shorelines and surrounding forested hills. Use expectation for the lake is informed by the New Hampshire Lakes Association's Survey, which indicates typical viewers have a high expectation of scenery at New Hampshire water features.

b. Effect on future use and enjoyment

The Project would introduce a new man-made component with an industrial character into a natural landscape, which would be out of character with the existing conditions in views from Big Dummer Pond. The Project would have a negative effect on the future use and enjoyment of the Pond.

c. Extent of proposed facility, including all structure and disturbed areas, visible from the scenic resource

The extent of the Project that would be visible from Big Dummer Pond would vary based on the location from within the resource. It is likely that up to 16 galvanized steel lattice towers would be visible from different locations on the pond. Simulations provided by DeWan & Associates show at least 8 visible structures from a single location. Additional structures would likely be visible from this location beyond

the extents of the simulations. Clearing for the corridor would also be visible from Big Dummer Pond, with parts of the ROW floor being visible from certain locations.

d. The distance of the proposed facility from the scenic resource

The distances between the Project and locations within the scenic resource that would have visibility range from approximately .25 miles to over 1 mile.

e. The horizontal breadth or visual arc of the visible elements of the proposed facility

The visual arc or visual angle would vary and at locations would be more than 90 degrees. This accounts for structures that would likely be visible for an approximately 1.5-mile-long stretch of corridor.

f. The scale, elevation and nature of the proposed facility relative to surrounding topography and existing structures

The Project would be located towards that upper portion of the hillside to the west of Big Dummer Pond. The positioning of the new corridor at this location would accentuate the Project from this location. The new corridor is also proposed within an area of forest management and would commonly not have the benefit of surrounding vegetation to screen the corridor and proposed structures.

g. The duration and direction of the typical view of elements of the proposed facility

Visibility of the Project would be to the north, west, and south depending on the view location from Big Dummer Pond. Activities include fishing, paddling, and other passive recreational uses. Duration of views vary, but can last for the length of the activity.

h. The presence of intervening topography between the scenic resource and elements of the proposed facility

The open views across the open waters of Big Dummer Pond, backgrounded by the surrounding hillsides would elevate that prominence and visibility of the NPT. Landform would screen additional structures to both the north and south of structures that would be visible. Additionally, surrounding forest also helps to screen additional structures, portions of the structures that are visible, and views of the cleared ROW. The 16 visible structures are based on screened views, including the effect of surrounding vegetation. Overall, topography would elevate the appearance of the Project

Potential Visual Impact Based on Analysis of Factors Under Site 301.05(b)(6)

In summary, at Big Dummer Pond, we determined that there is a high expectation for scenery. The Project would introduce a built element into the landscape with an overwhelming industrial character. The Project would be prominent and result in a high level of contrast from a large portion of this scenic resource. There would be a negative degradation to the scenic quality, which would result in a negative effect to the future use and enjoyment of users for Big Dummer Pond. We therefore would rate the potential visual impact as high.

3. Mitigation - Site 301.05(b)(10)

The NPT VIA notes that mitigation at Big Dummer Pond includes that, “(m)ost 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 would be seen against a wooded backdrop.” (NPT VIA at 1-71)

4. Site 301.14(a) Criteria Relative to Findings of Unreasonable Adverse Effect on Aesthetics

(1) Existing character of the area of potential visual impact

While the landscape surrounding Big Dummer Pond includes disruptions to the natural landscape, including an existing transmission line, forest harvesting activities and a wind generation facility, the overall character

retains a relatively high scenic quality. The pond has minimal development along the shorelines and the existing transmission line is located in a manner in which it is mostly screened and otherwise subordinate within views. The surrounding landscape includes a high level of diversity, including varying shorelines and surrounding landform. During separate field investigation visits, T.J. Boyle gave a rating of Distinctive & Noteworthy to the Scenic Attractiveness at the simulation location.

(2) The significance of affected scenic resources and their distance from the proposed facility

Big Dummer Pond is a publicly owned body of water. Water resources are valued for their scenic quality in the State of New Hampshire, and there are a limited number of ponds and lakes with little or no development along the shorelines. The closest visible portions of the Project are approximately .25 miles from locations on Big Dummer Pond.

(3) The extent, nature, and duration of public uses of affected scenic resources

Public uses at Little Diamond Pond include shore fishing, non-motorized boat fishing, non-motorized boating, swimming, and hiking. These are all generally considered passive recreational uses. The duration of use varies, but would typically be longer than a few minutes and up to a full day.

(4) The scope and scale of the change in the landscape visible from affected scenic resources

The scope and scale of change is high. Although existing views include other surrounding electrical transmission and generation facilities, the particular siting of the new NPT corridor, design and character of proposed structures, and extent of visibility would result in a significant change to the existing visual landscape. Changes to the landscape are both dominant and prominent.

(5) The evaluation of the overall daytime and nighttime visual impacts of the facility as described in the visual impacts assessment and other relevant evidence

This review of visual impacts per 301.05(b)(6) criteria found the Project to result in high visual impacts. The NPT VIA found the visual impact from Big Dummer Pond to be medium.

(6) The extent to which the proposed facility would be a dominant and prominent feature within a natural or cultural landscape of high scenic quality or as viewed from scenic resources of high value or sensitivity

The Project would result in visibility of portions of up to 16 new electrical transmission structures and changes to the forest canopy as a result of ROW clearing. A significant portion of several of these structures would be visible at elevated locations along the surrounding hillsides, with some structures being skylined above the hill tops. As a result, inevitably the Project would be noticeable from a large portion of views from the Big Dummer Pond and would be considered a very prominent feature within the landscape. Existing views to the north, west, and south retain the character of a predominantly natural landscape. The elevated position and high level of contrast with surrounding features would result in the NPT also becoming a dominant feature of the landscape in views from the pond.

(7) The effectiveness of the measures proposed by the applicant to avoid, minimize, or mitigate unreasonable adverse effects on aesthetics, and the extent to which such measures represent best practical measures

Mitigation at Big Dummer Pond is limited to not siting the proposed corridor along the top of the opposing hill and locating the corridor near another transmission line. The differences between location of the NPT and existing line are clearly illustrated in the simulation. While the existing line is well screened, the location and design of the NPT is highly visible and poorly sited. The effectiveness of the proposed measures do little to avoid, minimize or mitigate unreasonable adverse effects and do not represent best practical measures.

5. Discussion of Unreasonable Adverse Effect on Aesthetics

The most effective form of mitigation for transmission line projects is the proper siting and alignment of the corridor. In general, siting an aerial transmission line at elevated locations does not follow generally accepted professional standards in avoidance of visual impacts. Our review of the Project found that it introduces a manufactured element, with industrial characteristics into a scenic and natural appearing landscape. It also found that the Project would result in a high contrast to the existing conditions and would be both a prominent and dominant element in the visual landscape. Degradation to the scenic setting would negatively affect the future use and enjoyment of Big Dummer Pond according to results from the New Hampshire Lakes Association's Survey and based on responses collected during the Counsel for the Public's Community Workshops. The NPT application does not provide justification for the location of the corridor at this location or discuss whether alternative locations or configurations were evaluated. Proposed mitigation is not effective and does not represent best practical measures. To avoid unreasonable adverse impacts to the aesthetics at Big Dummer Pond, NPT needs to evaluate an alternative corridor alignment that significantly reduces visibility or underground the Project at this location.

Scenic Resource Name: Coleman State Park / Entrance**Potential Visual Impact:** Medium**Would the Project Result in Unreasonable Impacts:** Yes**Simulation:** DeWan & Associates Attachment 9: Photosimulations of leaf-off conditions (Revised) page 9-19 to 9-22**Town:** Stewartstown, New Hampshire**Field Documentation Notes from a Location Near the Simulation**Scenic Attractiveness: NoteworthyNumber of Visible Residences: 0Number of Visible Existing Transmission Structures: 0Scenery Interest: Moderate to High**1. Narrative**

Coleman State Park Entrance is in Stewartstown, NH, located in New Hampshire's Great North Woods region. This area serves as the center of activities at Coleman State Park and includes the visitor center, recreational building, boat ramp, picnic area, parking and entrance to the campground. The image used in DeWan & Associates Attachment 9 is taken from Diamond Pond Road. The Visitors Center is the building to the left in panorama shown on the cover page and the recreational building is to the right. There are a mix of views from this general area. In foreground and middle ground, Little Diamond Pond, a cottage along Diamond Pond Road, the Visitors Center, recreational building, and campground are all visible. These elements are interspersed with a mix of mature deciduous and evergreen vegetation, and back-dropped with distant views of surrounding hills and ridges. The Project would be located on top of one of the surrounding ridges to the southeast and proposed HVDC structures would be visible from portions of this area. The State of New Hampshire does not record annual visitation numbers, but the park is noted as a medium sized state park. Coleman State Park is a significant state resource that is visited throughout the year, and therefore has special scenic concern.

2. Site 301.05(b)(6) Criteria used to characterize potential visual impacts**a. Expectations of typical viewer**

The typical viewer is a visitor to Coleman State Park. A mix of campers and day-use visitors would converge for activities near the entrance. Cars traveling Diamond Pond Road would also be exposed to Project visibility at this location. Generally, people are at this resource to recreate. They have chosen to visit a remote section of New Hampshire's Great North Woods and the expectations of scenic quality for the typical view are considered high. Viewer expectation is also informed by responses collected during Community Workshops and results, which are discussed in Section 4.2 of the T. J. Boyle Visual Impact Analysis Report. Responses noted that user expectation for recreation parks/areas, and tourism destinations were high.

b. Effect on future use and enjoyment

The Project would introduce a new man-made component with an industrial character into a remote and natural landscape, which would be out of character with the existing conditions in views from Coleman State Park / Entrance. The Project would have a negative effect on the future use and enjoyment of activities near this resource.

c. Extent of proposed facility, including all structure and disturbed areas, visible from the scenic resource

The DeWan & Associates simulation from the Coleman State Park Entrance illustrates at least four (4) HVDC structures that would be visible from locations near this resource. Changes to the forest canopy because of ROW clearing would also be visible. Visibility, however would be intermittent and vary depending on viewer location. Visibility would be greatest along Diamond Pond Road and near the recreation building. Screening by existing vegetation would be more effective during 'leaf-on' conditions.

d. The distance of the proposed facility from the scenic resource

DeWan & Associates identifies the distances between the Project and locations within the scenic resource that would have visibility range from approximately 1.42 miles up to 1.75 miles.

e. The horizontal breadth or visual arc of the visible elements of the proposed facility

Within the DeWan & Associates simulations, proposed HVDC structures and ROW clearing are visible from approximately 18 to 19 degrees. However, the breadth of visible elements would vary, based on position with the entrance area.

f. The scale, elevation and nature of the proposed facility relative to surrounding topography and existing structures

At least four (4) HVDC structures located along the top of a surrounding ridge would be visible when looking southeast from areas near the entrance to Coleman State Park. A significant portion of these structures would be visible above the top of the ridge and surrounding vegetation. These structures would be skylined and would be unlike other structures in this area. This condition would elevate the presence of the Project from the entrance to Coleman State Park and make the Project a prominent element of the landscape.

g. The duration and direction of the typical view of elements of the proposed facility

For users in the Park, duration would vary, but could last several minutes or longer depending on activity and location. For example, when viewed from the porch of the recreation building visibility would be persistent. Visibility for vehicles on Diamond Pond Road would be very brief. Views of the Project would be to the southeast.

h. The presence of intervening topography between the scenic resource and elements of the proposed facility

The viewer is at a location without a dominant focal point, but includes several visual elements in the foreground, middle ground and background. Surrounding vegetation helps to reduce prominence of the Project.

Potential Visual Impact Based on Analysis of Factors Under Site 301.05(b)(6)

In summary, at the Coleman State Park / Entrance, viewers expect to find a remote and rustic setting, with limited development of park infrastructure in an otherwise natural setting. The Project would introduce an industrial-appearing element at the top of a surrounding ridge. The location of the proposed corridor would emphasize the presence of the Project, but the extent of visibility would be limited to certain locations within the area near the entrance. We therefore would rate the potential visual impact as medium.

3. Mitigation - Site 301.05(b)(10)

The NPT VIA notes that mitigation at Coleman State Park includes the use of tubular “weathering steel transmission structures to reduce contrasts in color and form.” (NPT VIA at 1-33)

4. Site 301.14(a) Criteria Relative to Findings of Unreasonable Adverse Effect on Aesthetics

(1) Existing character of the area of potential visual impact

The area near the Coleman State Park / Entrance displays a rustic character, and includes development associated with the park set within a natural landscape. Buildings in the area include the Visitors Center, recreation building, and a cottage along Diamond Pond Road. All structures include a similar rustic architecture. Openings in the surrounding vegetation allow views to Little Diamond Pond and to surrounding hills and ridgelines. Surrounding hills and ridgelines are wooded and without development. During field investigation that T.J. Boyle performed as part of the DOE VIA, it gave a rating of **Distinctive** to the Scenic Attractiveness at this location.

(2) The significance of affected scenic resources and their distance from the proposed facility

Coleman State Park, is a state park and is therefore a designated scenic resource and is supported with public funds. This resource could also be considered a tourism destination, conservation lands, and is immediately adjacent to Little Diamond Pond. The closest visible portions of the Project are approximately 1.42 miles up to 1.75 miles from the Coleman State Park Entrance, according to the NPT VIA.

(3) The extent, nature, and duration of public uses of affected scenic resources

The nature of public uses at the Entrance to Coleman State Park vary from simply passing through, to arrival, picnicking and using the surrounding facilities, such as the recreation building. Generally, most users are here to recreate within the remote setting of Coleman State Park. Duration would also vary. For vehicles passing through on Diamond Pond Road, duration would be brief, but for visitors enjoying views from the porch of the recreation building, duration would be for several minutes to possibly hours.

(4) The scope and scale of the change in the landscape visible from affected scenic resources

Although visible components of the Project are distant and to some extent partially screened, the change occurs within a surrounding visual landscape that is in an almost entirely natural state. The Project will include structures along an undeveloped ridgeline that are skylined above the ridgeline and surrounding vegetation.

(5) The evaluation of the overall daytime and nighttime visual impacts of the facility as described in the visual impacts assessment and other relevant evidence

This review of visual impacts per 301.05(b)(6) criteria found the Project to result in medium visual impacts. The NPT VIA found the overall visual impact from Coleman State Park to be medium.

(6) The extent to which the proposed facility would be a dominant and prominent feature within a natural or cultural landscape of high scenic quality or as viewed from scenic resources of high value or sensitivity

The location and skylining of proposed HVDC transmission structures on a surrounding ridgeline would result in Project components being prominent. However, visibility would be limited to certain locations within this resource and surrounding vegetation within the entrance area would screen many views. Views would generally not focus on the Project, which would reduce the extent the Project would be considered dominant.

(7) The effectiveness of the measures proposed by the applicant to avoid, minimize, or mitigate unreasonable adverse effects on aesthetics, and the extent to which such measures represent best practical measures

NPT has proposed the use of tubular “weathering steel transmission structures to reduce contrasts in color and form” (NPT VIA at 1-33). For this particular location, this mitigation measure would result in greater contrast as opposed to lattice towers. The most prominent visibility of the Project from Coleman State Park / Entrance would be the transmission structures skylined above the background ridgeline. The dark color and concentrated bulk of the weathering steel structures would result in more contrast with the background sky, particularly on days with low cloud cover and high visibility. From the Coleman State Park / Entrance, mitigation as proposed by NPT is ineffective.

5. Discussion of Unreasonable Adverse Effect on Aesthetics

The most effective form of mitigation for transmission line projects is the proper siting and alignment of the corridor. In general, siting an aerial transmission line along a ridgeline does not follow best practices in avoidance of visual impacts. Our review of the Project found that it introduces a manufactured element with industrial characteristics into a scenic and natural landscape. It also found that the Project would result in a high contrast to the existing conditions and would be a prominent element in the visual landscape. Users of Coleman State Park are in part drawn to the rustic and scenic attractiveness of the setting. Degradation to the scenic setting would negatively affect the future use and enjoyment of the park based on responses collected during the Counsel for the Public’s Community Workshop’s. The NPT application does not provide justification for the location of the corridor at this location or discuss whether alternative locations or configurations were evaluated. The proposed mitigation is not effective. Given the expectation of scenic quality for viewers from Coleman State Park, even though adverse impacts were determined to be medium, without additional justification for the location of a new transmission corridor at this location, the Project would result in an unreasonable adverse impact to the aesthetics at the Coleman State Park / Entrance. NPT needs to relocate the corridor so Project components are not visible from this scenic resource or underground portions of the Project visible from this area.

Scenic Resource Name: Diamond Pond Road**Potential Visual Impact:** High**Will the Project Result in Unreasonable Impacts:** Yes**Simulation:** DeWan & Associates Attachment 9: Photosimulations of leaf-off conditions (Revised) page 9-31 to 9-38**Town:** Colebrook, New Hampshire**Field Documentation Notes from a Location Near the Simulation**Observation Notes: About a mile away--it will cross along the ridge.Scenic Attractiveness: NoteworthyNumber of Visible Residences: 2Number of Visible Existing Transmission Structures: 0Scenery Interest: Moderate**1. Narrative**

Diamond Pond Road is located in the towns of Colebrook and Stewartstown, NH. In the vicinity of the crossing, Diamond Pond Road runs roughly north-south, and passes under the corridor in the town of Stewartstown. This road is within New Hampshire's Great North Woods region, the proposed NPT corridor can be seen to the west as it passes through the area, as well as at the road crossing. The road is accessible year-round, and provides access to low-density residential uses as well as Coleman State Park and Little Diamond Pond to the north. In the area where the proposed Project is visible, the landscape is characterized by the rolling forested hillsides to the west, agricultural fields and low-density residential uses. This location is a roadway with a scenic quality that is supported with public funds (Site 102.45(c) and (d)). The proposed HVDC structures and new right-of-way clearing would be visible in the area around the corridor crossing, as well as from other parts of the road. The forested lands of Coleman State Park are also visible from the road within the same context as the proposed NPT project. There is no AADT information collected for Diamond Pond Road. The DeWan & Associates viewpoint location is approximately 0.75 miles south of the proposed corridor crossing over the road. The simulation from Diamond Pond Road is representative of other views along the road and within an area that possesses a scenic quality as well as supported by public funds.

2. Site 301.05(b)(6) Criteria used to characterize potential visual impacts**a. Expectations of typical viewer**

The typical viewer along Diamond Pond Road is a motorist traveling by vehicle or motorcycle, a pedestrian or bicyclist, or potentially on farm equipment. Motorists utilize the road for various reasons, including specifically appreciating scenery along the road as well as simply utilizing the road to travel from one location to another. Most users are likely visitors to Coleman State Park to the north. Views from this portion of the road include low-density residential and agricultural uses as well as the surrounding forested hills and mountains to the west. This road is not part of a designated scenic byway, but because it is the main access to Coleman State Park and affords scenic views to the western hills and mountains, the expectations for the typical viewer at this location are considered high.

b. Effect on future use and enjoyment

The Project would introduce a new transmission line and large weathering steel and galvanized steel lattice structures in an area that currently does not contain a transmission line. The existing view is of relatively high quality, and the proposed Project would be out of character with the existing conditions through this

area. Because the proposed transmission infrastructure would be visible traversing the landscape and crosses the road, including locating a ____ feet tall galvanized steel lattice structure approximately 65' from the roadway, the Project would have a negative effect on the future use and enjoyment of this roadway.

c. Extent of proposed facility, including all structure and disturbed areas, visible from the scenic resource

The DeWan & Associates Diamond Pond Road simulation illustrates new proposed weathering steel structures that would be visible crossing the field and ridge as it approaches from the west, and this view is within the context of a nearby residence and the Coleman State Park immediately beyond the proposed ROW. As the NPT Project approaches the road further north, galvanized steel lattice structures and associated ROW clearing would be visible from the road. The Terrain Viewshed indicates there would be visibility from almost all of the roadway through this area of Colebrook and Stewartstown without the benefit of the surrounding forest screening. The Vegetated Viewshed indicates intermittent visibility through this area where vegetation is cleared along the roadway, including a relatively large unobstructed segment of roadway south of the simulation location.

d. The distance of the proposed facility from the scenic resource

DeWan & Associates identifies the distance between the Project and the simulation location as approximately 0.91 to 1.15 miles. However, the Project would cross immediately over the road, and other visibility is expected elsewhere along the road.

e. The horizontal breadth or visual arc of the visible elements of the proposed facility

The visual arc or visual angle is approximately 18.5 degrees of the view illustrated in the DeWan & Associates simulation, and would potentially be larger at other locations, including the road crossing itself.

f. The scale, elevation and nature of the proposed facility relative to surrounding topography and existing structures

The proposed structures would be visible in the distance to the west from the simulation location, and at other locations other proposed structures would be visible approaching the roadway from the west. Other structures would be visible east of the crossing, though these would likely be screened by surrounding vegetation unless viewing from the road crossing. The height of the visible proposed structures ranges from 80' to 90', and the proposed structure material and design would be out of character with the existing conditions due to a lack of existing transmission infrastructure. Most of the structures visible from the roadway are not skylined above the top of the surrounding forest canopy, though there will be some skylining, especially at the crossing. Due to the siting of the new corridor and structures crossing the ridge and roadway, visibility of the proposed structures would be prominent, and due to variability in structure material and design the contrast of the structure and conductors with the vegetated backdrop and skyline would likely vary based on seasonal and weather conditions.

g. The duration and direction of the typical view of elements of the proposed facility

Visibility of the Project would be to the west and east from the portions of the road that have visibility of the transmission line as it traverses this area. Because varying forms of transportation may be used (e.g. walking, running, biking, driving and/or motorcycling), duration of views would vary, but would be possible while traveling through cleared areas where views of the surrounding landscape is expected along a ____ miles segment of the road.

h. The presence of intervening topography between the scenic resource and elements of the proposed facility

Landform is expected to screen additional structures to the west beyond the ridgeline visible in the simulation. With the exception of the road crossing, the surrounding forest would help to screen additional structures and views of the cleared ROW to the east. The areas of visibility and associated structures described above are based on screened views, including the effect of surrounding vegetation. Overall, the location of the proposed corridor traversing the ridgeline to the west, as well as the proximity of proposed structures to the road would elevate the appearance of the Project.

Potential Visual Impact Based on Analysis of Factors Under Site 301.05(b)(6)

In summary, at Diamond Pond Road, we determined that there is a high expectation for scenery. The Project would introduce various structures with an industrial character into parts of a landscape that are primarily natural and agricultural with a view of the Coleman State Park, and that does not currently contain transmission infrastructure. Because of the elevation of the Project as it traverses the ridge to the west, the proposed structure heights and varied materials, as well as locating a ____ foot tall galvanized steel lattice structure approximately 65' from the road, the structures would be relatively prominent and potentially result in a high level of contrast with the existing character of the area. There would be a negative degradation to the scenic quality of the landscape, which would result in a negative effect to the future use and enjoyment for users of Diamond Pond Road. We therefore would rate the potential visual impact as high.

3. Mitigation - Site 301.05(b)(10)

The NPT VIA cites mitigation for Diamond Pond Road as follows:

- 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.

(NPT VIA, p. 1-27)

4. Site 301.14(a) Criteria Relative to Findings of Unreasonable Adverse Effect on Aesthetics

(1) Existing character of the area of potential visual impact

Diamond Pond Road is in the Great North Woods region of New Hampshire and has limited development along the roadside. The surrounding landscape is generally characterized by rolling hills with forest and fields, mountains in the background to the west, more heavily forested areas to the east, and low-density residential development. Forested areas within the Coleman State Park are visible just north of the corridor as it traverses a ridgeline west of the road. During field investigation that was performed as part of the DOE VIA, a rating of Noteworthy was given to the Scenic Attractiveness near the DeWan & Associates simulation location.

(2) The significance of affected scenic resources and their distance from the proposed facility

Diamond Pond Road is a roadway with a scenic quality that is supported with public funds (Site 102.45(c) and (d)). The visible portions of the Project are to the west as the proposed corridor traverses a hill, as well as immediately adjacent to the road at the crossing, and visibility is expected from several locations along the road.

(3) The extent, nature, and duration of public uses of affected scenic resources

Public uses along Diamond Pond Road include walking, biking, and driving/motorcycling. The duration of use of the scenic resource would vary based on mode of travel, but would cumulatively be in the tens of seconds along the length of the road where visibility is expected.

(4) The scope and scale of the change in the landscape visible from affected scenic resources

The scope and scale of change is considered medium-high. The number, design and character of proposed structures and associated corridor, as well as the proximity and extent of visibility would result in a significant change to the landscape, especially for regular users of the road. Changes to the landscape would be prominent and in contrast to the existing character of the area.

(5) The evaluation of the overall daytime and nighttime visual impacts of the facility as described in the visual impacts assessment and other relevant evidence

This review of visual impacts per 301.05(b)(6) criteria found the Project to result in high visual impacts. The NPT VIA found the overall visual impact to Diamond Pond Road to be low-medium.

(6) The extent to which the proposed facility would be a dominant and prominent feature within a natural or cultural landscape of high scenic quality or as viewed from scenic resources of high value or sensitivity

The Project would result in new electrical transmission structures being visible from the simulation location as well as from other portions of Diamond Pond Road, which currently offers high-quality views of the landscape. These structures would be visible along the ridgeline west of the road, and also would be visible as they approach and cross Diamond Pond Road north of the simulation location. The Project would be inevitably noticeable in landscape to the west as well as in the vicinity of the corridor crossing over the road, and would be considered a prominent feature within the visual landscape. Structures to the west would be visible traversing the ridgeline and would interfere with visibility of forested areas within Coleman State Park. At the road crossing, the proposed adjacent weathering steel structure east of the road would be dominant and prominent, and structures near the road would not match other structures further west. The proposed Project would significantly contrast with the existing conditions through this area.

(7) The effectiveness of the measures proposed by the applicant to avoid, minimize, or mitigate unreasonable adverse effects on aesthetics, and the extent to which such measures represent best practical measures

NPT has proposed mitigation as described above. However, for this particular resource, not all of the proposed measures are accurate or adequate. For instance, not all of the structures that would be visible from this resource are proposed as weathering steel monopoles, which leads to a sense of discontinuity of structure types and materials in the proposed corridor. Siting the Project along the boundary of the Coleman State Park would interfere with visibility of forested areas of the Park and regardless of the existing vegetation pattern could not be considered a mitigating factor due to the sensitivity of the Park as a scenic resource. While the siting of the corridor east of the road is in forestland and prevents most visibility of this area from Diamond Pond Road, this is not the case for areas west of the road that are more open in nature and allow for visibility of the Project.

Because the proposed structures and corridor clearing would be prominently located on the hillside west of Diamond Pond Road, visibility of the Project would be in an elevated location that would result in contrast of the proposed structures and untreated conductors with the existing conditions, particularly on days with low cloud cover and high visibility. The variation in structure types and materials adds to a sense of discontinuity within the proposed corridor. Other forms of mitigation that need to be considered are choosing a corridor that does not place the Project at an elevated location within an otherwise intact forest landscape, particularly directly adjacent to a sensitive scenic resource; and utilizing alternative mitigation measures for the structure types and conductors such as Natina Steel and non-specular conductors

(discussed in Section 4.4 of the T. J. Boyle Visual Impact Analysis Report). From Diamond Pond Road, mitigation as proposed by NPT would be incomplete and would not represent use of all best practical measures.

5. Discussion of Unreasonable Adverse Effect on Aesthetics

The most effective form of mitigation for transmission line projects is the proper siting and alignment of the corridor. In general, siting an aerial transmission line at elevated locations does not follow generally accepted professional standards in avoidance of visual impacts. T.J. Boyle considers impacts to this resource unreasonable because of the selection of the corridor alignment directly adjacent and visually in front of Coleman State Park, multiple structure types that would be visible from the road, and the location of a galvanized lattice structure located approximately 65 feet from the edge of the road crossing. Evaluation of this resource includes middle ground views (simulation) and immediate views of the existing conditions at the corridor crossing. Additional mitigation measures are warranted at this location, including possible relocation or continued burial from the nearby transition station.

Scenic Resource Name: Mountain View Grand Hotel**Potential Visual Impact:** High**Will the Project Result in Unreasonable Impacts:** Yes**Simulation:** DeWan & Associates Attachment 9 Photosimulations of leaf-off conditions (Revised) page 9-117 to 9-126**Town:** Whitefield, New Hampshire**Field Documentation Notes from a Location Near the Simulation**Observation Notes: National Register SiteScenic Attractiveness: DistinctiveNumber of Visible Residences: 6Number of Visible Existing Transmission Structures: 0Scenery Interest: High**1. Narrative**

Located in Whitefield, NH, off of U.S. Route 3, the Mountain View Grand began as a simple inn in 1865, and grew by the end of the century into one of New Hampshire's "grand hotels." As a destination resort, its location was selected primarily for the exceptional beauty of its White Mountain views. In 2002, it was extensively restored and renovated with 145 guest rooms, an elegant dining room, ballroom, spa in a tower offering panoramic views, picturesque golf course, conference hall, and other amenities. Today it is one of only four surviving grand hotels in New Hampshire, and an important part of the North County's economy.

The Mountain View Grand is listed on the National Register of Historic Places and is a scenic resource under Site 102.45(e). It is also a scenic resource under Site 102.45(c) because it is a widely recognized tourism destination.

The existing corridor currently has two 115 kV transmission lines using wooden H-frame structures that are 43 to 50 feet high. The viewpoint is from the front steps of the hotel, and the existing structures are not visible. The Project will move one of the existing 115 kV transmission lines to delta-configured steel poles that range from 79 to 90 feet high; the new 345 kV structures are 80 to 90-foot monopoles. DeWan & Associates determined that 6 new transmission structures will be visible in the photosimulation from 1.37 to 1.52 miles from the viewer. Other locations may have views where the Project is much more visible, for instance from the Spa Tower.

2. Site 301.05(b)(6) Criteria used to characterize potential visual impacts**a. Expectations of typical viewer**

A primary reason for coming to the Mountain View Grand Hotel is the extraordinary views of the White Mountains and surrounding landscape.

b. Effect on future use and enjoyment

The Mountain View Grand Hotel is a high-quality destination resort. There are many outdoor activities where scenic appreciation is an expected part of the experience; the indoor facilities also benefit from exceptional views. The Project will introduce an industrial-appearing feature into one of New Hampshire's most marketed views. This intrusion is out of character with the existing conditions visible from Mountain View Grand Hotel, which is highly dependent on the quality of its views. The Project is incompatible with the Mountain View Grand Hotel branding and will have a negative effect on guests' enjoyment. Choosing

to vacation at the Mountain View Grand Hotel is highly discretionary, and the scenic degradation will likely be sufficient to discourage some guests from returning.

c. Extent of proposed facility, including all structure and disturbed areas, visible from the scenic resource

DeWan & Associates determined that 6 new transmission structures and their conductors will be visible in the photosimulation. Other locations may have views where the Project is much more visible, for instance from the Spa Tower and guest rooms “with view” on the upper floors.

d. The distance of the proposed facility from the scenic resource

DeWan & Associates identifies the distances between the Project and locations within the scenic resource that will have visibility range from approximately 1.37 miles up to 1.52 miles.

e. The horizontal breadth or visual arc of the visible elements of the proposed facility

The horizontal arc in the photosimulation is approximately 30°, however more elevated viewpoints will increase the degree of visibility.

f. The scale, elevation and nature of the proposed facility relative to surrounding topography and existing structures

The existing structures are scaled to be hidden behind the trees, but the new structures will rise well above the canopy and also expose the conductors to viewers.

g. The duration and direction of the typical view of elements of the proposed facility

The Project is located to the south, toward the most magnificent views of the White Mountains. Views could be relatively short, to most of a day depending on the type of activities guests choose to engage.

h. The presence of intervening topography between the scenic resource and elements of the proposed facility

The terrain falls gently away from the viewer and the land is mostly forested. The Project is located so that it will become part of the iconic views to the White Mountains.

Potential Visual Impact Based on Analysis of Factors Under Site 301.05(b)(6)

In summary, the Mountain View Grand Hotel is a destination resort that is branded in large measure around the quality of its views to the White Mountains, i.e. “Mountain View.” As proposed, the Project will become an unavoidable intrusion into the mountain view. We therefore would rate the potential visual impact as high.

3. Mitigation - Site 301.05(b)(10)

The NPT VIA notes that mitigation at the Mountain View Grand Hotel is to use similar spacing for the 115 kV and 345 kV structures, and to use weathering steel structures (NPT VIA, page 2-35).

4. Site 301.14(a) Criteria Relative to Findings of Unreasonable Adverse Effect on Aesthetics

(1) Existing character of the area of potential visual impact

The Mountain View Grand Hotel is located to take advantage of expansive views over a natural-appearing landscape to the White Mountains.

(2) The significance of affected scenic resources and their distance from the proposed facility

The Mountain View Grand Hotel is listed on the National Register of Historic Places and is one of only four “grand hotels” remaining in New Hampshire. The Mountain View Grand Hotel makes a major contribution to the North Country’s economy, and its branding is largely built around this view.

(3) The extent, nature, and duration of public uses of affected scenic resources

Guests can engage in a number of outdoor activities with views toward the White Mountains that will include the Project. Many indoor areas will also have views that include the Project. The duration of view can range from fleeting glances to regular exposure throughout the day.

(4) The scope and scale of the change in the landscape visible from affected scenic resources

The existing transmission structures are not visible; the new structures are nearly twice as tall. This increase in scale makes these new industrial-appearing structures and conductors a part of this iconic view.

(5) The evaluation of the overall daytime and nighttime visual impacts of the facility as described in the visual impacts assessment and other relevant evidence

The above review of visual impacts per 301.05(b)(6) criteria found the Project to result in high visual impacts. The NPT VIA found the visual impact from Mountain View Grand Hotel to be low.

(6) The extent to which the proposed facility would be a dominant and prominent feature within a natural or cultural landscape of high scenic quality or as viewed from scenic resources of high value or sensitivity

The Project will introduce a prominent industrial-appearing feature into the landscape. While it does not dominate the view towards the White Mountains, it does degrade the scenic quality of the view.

(7) The effectiveness of the measures proposed by the applicant to avoid, minimize, or mitigate unreasonable adverse effects on aesthetics, and the extent to which such measures represent best practical measures

Simply using weathered steel structures is not an effective mitigation measure. The best practical measure is to bury the transmission line. As an overhead project, the height of the structures must be significantly reduced and non-specular conductors and insulators must be used.

5. Discussion of Unreasonable Adverse Effect on Aesthetics

Impacts to this resource were found to be unreasonable because additional mitigation measures would help reduce adverse aesthetic impacts. Specifically, the overall height of the structures must be significantly lowered and non-specular conductors used to lessen Project visibility. Evaluation of this resource considers visibility from the front porch, hotel rooms, cupola, and decks.

Scenic Resource Name: Slim Baker Recreation Area and Inspiration Point**Potential Visual Impact:** High**Would the Project Result in Unreasonable Impacts:** Yes**Simulation:** DeWan & Associates Attachment 9: Photosimulations of leaf-off conditions (Revised) page 9-143 to 9-158**Town:** Bristol, New Hampshire**Field Documentation Notes - Not Available****1. Narrative**

The Slim Baker Area occupies 135 mostly forested acres surrounding Round Top Mountain in Bristol, NH. It is maintained by the Slim Baker Foundation, and open year-round for hiking, snowshoeing, and camping. Snowmobilers may use the old logging road to the summit, as well.⁶ The greater Bristol community actively uses the area for group as well as individual activities. The Preservation Company evaluated the rustic Slim Baker Lodge as a historic site, but concluded that it did not have visibility.⁷

Inspiration Point is located at the summit of Little Roundtop, and is accessed from the Worton and Stephens trails. It was developed as a memorial area, and offers a spectacular panoramic view of the Pemigewasset Valley and much of eastern New Hampshire beyond.

2. Site 301.05(b)(6) Criteria used to characterize potential visual impacts**a. Expectations of typical viewer**

The Slim Baker Area was developed by a community not-for-profit group to be enjoyed “by the whole community as a kind of school of outdoor living.” In particular, it appears to be used for youth programs, but also by individuals. The expectations would be for a scenic wooded natural area with some rustic amenities.

Inspiration Point was developed as a memorial and open air chapel; a contemplative location. It is the primary destination within the Slim Baker Area, and affords a magnificent 180-degree panoramic view over the Pemigewasset Valley. Expectations for the view’s scenic quality would be high, even inspirational.

b. Effect on future use and enjoyment

The Project would introduce industrial-appearing galvanized steel lattice towers into a natural landscape, which would be out of character with the existing conditions viewed from Inspiration Point. The Project would occupy a prominent position in the view, and have a negative effect on its enjoyment. There may be some who are attracted to Inspiration Point’s more contemplative qualities that decide their needs are no longer met.

c. Extent of proposed facility, including all structure and disturbed areas, visible from the scenic resource

From Inspiration Point, the existing cleared corridor is clearly visible at a couple of locations 0.97 to 2.27 miles from the viewer, but the structures are very inconspicuous because they are wooden and in scale with the surrounding forest (i.e., 43 to 62 feet high). This situation changes with the introduction of 60 to

⁶ <http://slimbaker.org/facilities>

⁷ Preservation Company. 2015. Northern Pass Transmission Project Assessment of historic Properties. Property BRIS64.

110-foot galvanized steel lattice towers, which are highly visible on hillside approximately a mile from the viewer.

d. The distance of the proposed facility from the scenic resource

DeWan & Associates identifies the distances between the Project and locations within the scenic resource that would have visibility range from approximately .97 miles up to 1.20 miles.

e. The horizontal breadth or visual arc of the visible elements of the proposed facility

The NPT VIA indicates that the Project would be visible over a horizontal arc of approximately 100°

f. The scale, elevation and nature of the proposed facility relative to surrounding topography and existing structures

The existing corridor is routed high on the hillside and through a saddle; it is also visible climbing a hillside in the distance. It is prominent, but the impact is low because the structures are not apparent. The existing structures are of a scale and material that “fits” within the context of forested mountains. The new structures are approximately twice as high, and the galvanized steel lattice towers have an industrial appearance that conflicts with the surrounding landscape’s character.

g. The duration and direction of the typical view of elements of the proposed facility

The Project would occupy a prominent position in a magnificent panoramic view from Inspiration Point. Currently, users may stop to enjoy the view for a few minutes, or stay and contemplate it for an hour or more. The effect of the visual change could make it a less desirable place for contemplation.

h. The presence of intervening topography between the scenic resource and elements of the proposed facility

The primary impact is a view across a forested valley to the Project crossing a hillside on the other side, so there is little intervening topography.

Potential Visual Impact Based on Analysis of Factors Under Site 301.05(b)(6)

The Project is prominent when seen from Inspiration Point, which is a primary destination within the Slim Baker Area, and the potential visual impact from this location is considered high.

3. Mitigation - Site 301.05(b)(10)

No mitigation measures are identified in the NPT VIA for Slim Baker (e.g., NPT VIA, p. 4-5, 4-23, and B-1).

4. Site 301.14(a) Criteria Relative to Findings of Unreasonable Adverse Effect on Aesthetics

(1) Existing character of the area of potential visual impact

The Slim Baker Area is a natural area established for the greater Bristol community’s enjoyment of the outdoors. It is a maintained natural recreation with some rustic amenities. Inspiration Point is a memorial and open air chapel with a panoramic view of the surrounding landscape and a contemplative sense of place.

(2) The significance of affected scenic resources and their distance from the proposed facility

The Slim Baker Area is managed as a recreation/conservation area by a not-for-profit organization (Site 102.45(b)) that includes a historic site (Site 102.45(e)). The area appears to play an important role in the culture of the greater Bristol community.

DeWan & Associates determined that the distance to structures visible from Inspiration Point is 0.97 to 2.27 miles.

(3) The extent, nature, and duration of public uses of affected scenic resources

The Slim Baker Area is regularly used for outdoor programs for area youth, such as Scouts, school groups, and summer camps. Activities would include picnicking, camping, hiking, snowshoeing, and learning about “outdoor living.” The area is also used by individuals for these same activities. These activities may last for an hour, the greater part of a day, or even several days; they may be regularly repeated.

Inspiration Point is a primary destination within the Slim Baker Area that affords a magnificent panoramic view and a contemplative sense of place.

(4) The scope and scale of the change in the landscape visible from affected scenic resources

The scope and scale of change is considered high. The existing corridor is visible but appears to more or less “fit” within its landscape context, and the structures are inconspicuous. This changes with the introduction of very large industrial appearing galvanized steel lattice structures, which are out of scale with the corridor and conflict with the surrounding forest character. Changes to the landscape are both dominant and prominent.

(5) The evaluation of the overall daytime and nighttime visual impacts of the facility as described in the visual impacts assessment and other relevant evidence

The above review of visual impacts per 301.05(b)(6) criteria found the Project to result in high visual impacts. The NPT VIA found the visual impact at Inspiration Point to be medium, and the overall visual impact to the Slim Baker Recreation Area to be low.

(6) The extent to which the proposed facility would be a dominant and prominent feature within a natural or cultural landscape of high scenic quality or as viewed from scenic resources of high value or sensitivity

Inspiration Point has high scenic quality and its use as a memorial and open air chapel make it a sensitive scenic resource. The Project would be both a dominant and prominent feature when viewed from Inspiration point.

(7) The effectiveness of the measures proposed by the applicant to avoid, minimize, or mitigate unreasonable adverse effects on aesthetics, and the extent to which such measures represent best practical measures

No mitigation measures are proposed to mitigate these visual impacts.

5. Discussion of Unreasonable Adverse Effect on Aesthetics

The most effective form of mitigation for transmission line projects is the proper siting and alignment of the corridor. In general, siting an aerial transmission line at elevated locations does not follow generally accepted professional standards in avoidance of visual impacts. In this particular case, the existing ROW does not appear wide enough to accommodate a new 345 kV transmission line without using structures that are excessively tall in order to keep the conductors out of the danger zone. The corridor needs to be reconfigured or widened in order to lower the height of the new structures. In addition, the structures need to be of a form and material that does not contrast with the existing structures; non-specular conductors and insulators need to be used. If such mitigation is not possible, then the Project needs to be buried.

Scenic Resource Name: Woodland Heritage Scenic Byway (Route 110)**Potential Visual Impact:** High**Would the Project Result in Unreasonable Impacts:** Yes**Simulation:** DeWan & Associates Attachment 9: Photosimulations of leaf-off conditions (Revised) page 9-81 to 9-92**Town:** Stark, New Hampshire**Field Documentation Notes from a Location Near the Simulation**Observation Notes: NH Scenic and Cultural BywayScenic Attractiveness: NoteworthyNumber of Visible Residences: 0Number of Visible Existing Transmission Structures: 2Scenery Interest: Moderate to High**1. Narrative**

Woodland Heritage Scenic Byway (Route 110) is part of New Hampshire's Scenic and Cultural Byways, and traverses approximately 65 miles of landscape through the State's Great North Woods region. According to the New Hampshire DOT Scenic and Cultural Byways website, "the route circles the northernmost section of the White Mountain National Forest known as the Kilkenny District, and celebrates the wood products heritage of northern New Hampshire."⁸ The Woodland Heritage Scenic Byway is accessible year-round, and in the area where the proposed corridor is visible the landscape is characterized by the rolling forested hillsides and mountains to the north that are part of the Lamphere Tract, Damiani Tract, and the Percy State Forest, as well as the Nash Stream Forest and the Percy Peaks in the background to the north. This site was selected because it is a designated scenic Byway with existing visibility of transmission infrastructure. The proposed HVDC structures and new right-of-way clearing would be visible from this location. The AADT for this portion of Route 110 is 1400. The DeWan & Associates viewpoint location is approximately 0.46 miles south of the existing corridor. The Woodland Heritage Scenic Byway is a significant state resource that is visited throughout the year, and therefore has special scenic concern.

2. Site 301.05(b)(6) Criteria used to characterize potential visual impacts**a. Expectations of typical viewer**

The typical viewer along Route 110 is a motorist traveling by vehicle or motorcycle. Motorists utilize the Byway for various reasons, including specifically appreciating scenery along the scenic Byway as well as simply utilizing the road to travel from one location to another, including those traveling from Colebrook or Groveton to Berlin. Views from this portion of the Byway include low-density residential and agricultural uses as well as the surrounding forested hills and mountains. Because this road is part of a designated scenic Byway, the expectations for the typical viewer are considered high. Use expectation for the Byway is also informed by the Section 4.2 of the T. J. Boyle Visual Impact Analysis Report and results from the Community Workshops, which indicates that scenery is an important factor for this location.

b. Effect on future use and enjoyment

The Project would remove existing transmission structures and introduce new transmission structures of a different type. Though the existing transmission corridor and some structures are visible, the forested hillsides in the middleground and background appear otherwise intact, and any forest management is not

⁸ <https://www.nh.gov/dot/programs/scbp/tours/documents/woodland.pdf>

readily recognizable. The proposed structures would be taller and more visible than the existing structures, and therefore the Project would have a negative effect on the future use and enjoyment of the Woodland Heritage Scenic Byway.

c. Extent of proposed facility, including all structure and disturbed areas, visible from the scenic resource

DeWan & Associates' Woodland Heritage Scenic Byway (Route 110) simulation illustrates portions of fourteen (14)⁹ new electrical transmission structures and minor changes to the forest canopy because of ROW clearing. The Terrain Viewshed indicates there would be visibility from almost all of the roadway as it traverses through this area of Stark without the benefit of the surrounding forest screening. The Vegetated Viewshed indicates visibility from several areas where vegetation is cleared along the roadway.

d. The distance of the proposed facility from the scenic resource

DeWan & Associates identifies the distance between the Project and the simulation location to range from approximately 0.47 to 0.48 miles. The Project would also cross immediately over the Byway, and other visibility is expected around this crossing, as well as at other locations along the Byway.

e. The horizontal breadth or visual arc of the visible elements of the proposed facility

The visual arc or visual angle is approximately 160 degrees of the view illustrated in the DeWan & Associates simulations, which is most readily apparent in the panoramic photosimulation.

f. The scale, elevation and nature of the proposed facility relative to surrounding topography and existing structures

All of the visible structures would be located midway up the middleground ridge when looking north from the simulation location. The height of the existing structures (43' to 56.5') relative to the proposed structures (70' to 100') would be out of character with the existing conditions through the areas where the transmission corridor is visible. The simulation indicates that where visible, up to about half of the height of the structures could be viewed from the scenic Byway. With the exception of several weathering steel monopole structures to the northwest of the simulation location, most of the structures would not be skylined above the tops of the surrounding forest canopy; the structures that are not skylined are proposed as galvanized steel lattice structures. The siting of the corridor in an elevated location along the ridge make visibility of the proposed structures prominent, and contrast of the structure types and conductors with the vegetated or sky backdrop would likely vary based on seasonal and weather conditions.

g. The duration and direction of the typical view of elements of the proposed facility

Visibility of the Project would be to the north from the portions of the Woodland Heritage Scenic Byway that would have visibility of the NPT corridor, though this would change to south in the western part of Stark where the Project crosses the road and heads southwest into the White Mountain National Forest. Because varying forms of transportation may be used (e.g. walking, running, biking, driving and/or motorcycling or snowmobiling), duration of views would vary, but would be intermittently possible while traveling alongside cleared areas where views of the surrounding landscape is expected.

h. The presence of intervening topography between the scenic resource and elements of the proposed facility

⁹ The DeWan & Associates simulation technical information states that 13 structures are visible during leaf-off conditions.

Landform is expected to screen some of the proposed structures through the area. Surrounding forest also helps to screen additional structures, lower portions of the structures that are visible, and views of the cleared ROW (other than when immediately under the road crossing). The visibility of structures described above is based on screened views, including the effect of surrounding vegetation. Overall, although most of the visible structures are not skylined, topography would elevate the appearance of the Project.

Potential Visual Impact Based on Analysis of Factors Under Site 301.05(b)(6)

In summary, at the Woodland Heritage Scenic Byway (Route 110) we determined that there is a high expectation for scenery. The Project would introduce an element with industrial character into parts of a landscape that are primarily natural with only limited visibility of existing wooden transmission structures. Although the proposed structures are generally not skylined, the Project would be relatively prominent and potentially result in a high level of contrast with the existing forested hillside depending on seasonal and weather conditions. There would be a negative degradation to the scenic quality of the landscape, which would result in a negative effect to the future use and enjoyment of users of the Byway. We therefore would rate the potential visual impact as high.

3. Mitigation - Site 301.05(b)(10)

The NPT VIA cites mitigation as follows:

- Using an existing transmission corridor to minimize the amount of clearing required for the transmission line.
- Using weathering steel monopole structures to minimize contrast in color, form, and line. (NPT VIA, p. 1-85)

4. Site 301.14(a) Criteria Relative to Findings of Unreasonable Adverse Effect on Aesthetics

(1) Existing character of the area of potential visual impact

This portion of the Woodland Heritage Scenic Byway is in the Great North Woods region of New Hampshire and has limited development along the roadside, and the surrounding landscape is generally characterized by forested hills and mountains, including the White Mountain National Forest on the south side of the road. Views from the roadway are of a predominantly natural landscape in the middleground and background with minimal evidence of forest management. During field investigation that T. J. Boyle performed as part of the DOE VIA, a rating of Noteworthy was given to the Scenic Attractiveness near the DeWan & Associates simulation location.

(2) The significance of affected scenic resources and their distance from the proposed facility

Woodland Heritage Scenic Byway is a designated scenic Byway, which is a scenic resource with state designation and is supported with public funds. Scenic Byways are specifically valued for their scenic quality in the State of New Hampshire. The closest visible portions of the Project are approximately 0.47 miles from the simulation location, and the Project directly crosses the Byway further west.

(3) The extent, nature, and duration of public uses of affected scenic resources

Public uses along the Woodland Heritage Scenic Byway include walking, biking, and driving/motorcycling/snowmobiling, and potentially include bus tours and other similar recreational uses. The duration of use of the scenic resource through this area would vary based on mode of travel, but would typically be longer than a few seconds of traveling along this scenic roadway. The duration of visibility would vary based on mode of travel, but would potentially be a significant portion of the total length of the Byway as it traverses the town of Stark.

(4) The scope and scale of the change in the landscape visible from affected scenic resources;

The scope and scale of change is considered medium-high. Although existing views include the existing transmission corridor and structures, the varying design and character of proposed structures and extent of visibility would result in a moderately significant change to the existing landscape. Due to this height and variation of proposed structures, changes to the landscape would be prominent and in contrast to the existing character.

(5) The evaluation of the overall daytime and nighttime visual impacts of the facility as described in the visual impacts assessment and other relevant evidence

The above review of visual impacts per 301.05(b)(6) criteria finds the Project to result in high visual impacts. The NPT VIA found the visual impact to Moose Path Scenic Byway to be low-medium.

(6) The extent to which the proposed facility would be a dominant and prominent feature within a natural or cultural landscape of high scenic quality or as viewed from scenic resources of high value or sensitivity

The Project would result in portions of approximately thirteen (13) new electrical transmission structures and changes to the forest canopy as a result of ROW clearing being visible from the simulation location, and additional structures would be visible from other locations along the scenic Byway. A significant portion of these weathering steel and galvanized steel lattice structures would be visible along the ridgeline on which they are located, some of which would be skylined. As a result, the Project would be inevitably noticeable in views to the north (and south in the vicinity of the corridor crossing), and would be considered a prominent feature within the visual landscape. Visibility of the surrounding hillsides are typically of a uniform forest cover, and only minor visibility of the existing transmission corridor and wooden structures. The elevated position and contrast of the structures with the surrounding landscape would result in the transmission structures being somewhat dominant and prominent as seen from the scenic Byway.

(7) The effectiveness of the measures proposed by the applicant to avoid, minimize, or mitigate unreasonable adverse effects on aesthetics, and the extent to which such measures represent best practical measures

NPT has proposed mitigation as described above. However, for this particular resource, not all of the proposed measures are accurate or adequate. In particular, the NPT VIA proposes using weathering steel monopole structures to minimize contrast in color, form, and line only where the structures are skylined, which causes unwarranted variation in proposed structure type and material.

Because the proposed structures and corridor clearing would be prominently located on the hillsides around Route 110, visibility of the Project would be in an elevated location that would result in contrast of the galvanized structures and untreated conductors with the background forest, particularly on days with low cloud cover and high visibility. Other forms of mitigation that need to be considered are utilizing alternative mitigation measures for the structure types and conductors such as Natina Steel and non-specular conductors (discussed in Section 4.4 of the T. J. Boyle Visual Impact Analysis Report). From the Woodland Heritage Scenic Byway, mitigation as proposed by NPT would be incomplete and would not represent use of all best practical measures.

5. Discussion of Unreasonable Adverse Effect on Aesthetics

T. J. Boyle found that impacts to this resource were unreasonable because additional mitigation measures would help reduce adverse aesthetic impacts. Additional mitigation which would help reduce impacts include switching to all monopole structures or a material treatment such as Natina Steel in order to maintain continuity of materials within the corridor and to better blend with the surrounding landscape. Non-specular conductors need to be used to reduce visibility of the Project.

Scenic Resource Name: Deerfield Road / Middle Road**Potential Visual Impact:** Medium**Will the Project Result in Unreasonable Impacts:** Yes**Simulation:** DeWan & Associates Attachment 8: Private Property Photosimulations (Revised) page 8-79 to 8-81**Town:** Allenstown / Deerfield, New Hampshire**Field Documentation Notes from a Location Near the Simulation**Observation Notes: Town line (Allenstown/Deerfield)Scenic Attractiveness: OrdinaryNumber of Visible Residences: 1Number of Visible Existing Transmission Structures: 0Scenery Interest: Moderate**1. Narrative**

This KOP is located in Allenstown near the Deerfield town line on Deerfield Road (aka Middle Road), a paved minor collector road with an AADT of 850 vehicles, near the border between Allenstown and Deerfield. Bear Brook State Park is across the street to the south and the view is to the north across a private 24-acre residential property toward a forested ridge. The private residence is a 1949 Ranch-style house with an enclosed front porch, identified by Preservation Company as a property “with views that are so isolated, limited, or minimal that no effect is possible.”¹⁰ DeWan’s photosimulation demonstrates that the Preservation Company was mistaken in this assessment. The surrounding landscape is largely forested with low density residential development. Photography indicates that the area possesses a scenic quality common to rural New Hampshire; it is expected that travelers will experience scenic pleasure from this drive (Site 102.45(c) and (d)).

The corridor of the existing 115 kV transmission line is 150 feet wide. The proposed 345 kV structure visible in the photosimulation is 140 feet high; the existing structures on either side of it are 66 and 75 feet high and are not visible. The structures are just over half a mile from the views, or in the near side of middle-distance.

2. Site 301.05(b)(6) Criteria used to characterize potential visual impacts**a. Expectations of typical viewer**

The typical viewer is traveling on Deerfield Road, which is mostly bordered by tall conifers right up to the road’s shoulder on both sides through this area. This KOP location offers a break from this sense of enclosure, and it would seem unusual for a traveler not to take advantage of this opportunity for a distant view. The expectation would be to see the natural-appearing landscape common in New Hampshire; the tall industrial-appearing transmission towers are out of character with this expectation.

b. Effect on future use and enjoyment

The Project will introduce industrial towers skylined above a forested ridge, which will be out of character with the existing conditions in views from Deerfield Road. In most cases, travelers will continue to use Deerfield Road, but the Project will have a negative effect on the future enjoyment of the drive.

c. Extent of proposed facility, including all structure and disturbed areas, visible from the scenic resource

¹⁰ Preservation Company. 2015. Northern Pass Transmission Project Assessment of historic Properties. Property ALLE64.

Two very tall transmission structures are visible approximately 0.6 miles from the viewer. Their visual impact is heightened because they are skylined above the ridgeline.

d. The distance of the proposed facility from the scenic resource

DeWan & Associates identifies the distances between the Project and locations within the scenic resource that will have visibility from approximately .60 miles.

e. The horizontal breadth or visual arc of the visible elements of the proposed facility

The horizontal arc between the two transmission structures is approximately 15°.

f. The scale, elevation and nature of the proposed facility relative to surrounding topography and existing structures

The ROW runs along a ridgeline that is approximately 250 feet above the viewer. The existing structures are screened by the forest canopy, however, the two proposed transmission structures are twice as high and rise far above the canopy. The two structures and three conductors have an industrial character that contrasts with the natural character of the forested ridgeline. That the structures are skylined significantly increases their visual prominence.

g. The duration and direction of the typical view of elements of the proposed facility

The duration of the view will be brief, though many local travelers will have frequently repeated exposure.

h. The presence of intervening topography between the scenic resource and elements of the proposed facility

The ridge on which the Project is sited is the most prominent topographic feature in the scene, which increases the visual prominence of the structures that rise above it.

Potential Visual Impact Based on Analysis of Factors Under Site 301.05(b)(6)

In summary, at Deerfield Road / Middle Road, two structures will be prominently visible for a relatively brief duration at a distance of 0.6 miles. Their visual impact is heightened because they are skylined and the visual contrast with their forested surroundings. We therefore would rate the potential visual impact as medium.

3. Mitigation - Site 301.05(b)(10)

Though the NPT VIA does not discuss the Deerfield Road location specifically, the mitigation would be similar to that discussed for Bear Brook State Park:

- Using weathering steel structures to minimize contrast in color and form.
- Maintaining similar spacing and alignment with existing transmission structures to avoid pattern contrasts.

4. Site 301.14(a) Criteria Relative to Findings of Unreasonable Adverse Effect on Aesthetics

(1) Existing character of the area of potential visual impact

The area is forested with scattered low density residential; Deerfield Road is bordered by tall trees along its shoulders for most of its length in this area. This landscape character is common in New Hampshire, and is considered to possess a scenic quality.

(2) The significance of affected scenic resources and their distance from the proposed facility

The location is a scenic resource by virtue of its being a public road that possesses a scenic quality and may be used for scenic drives and other recreation (Site 102.45(c) and (d)), and is looking across a property that may be eligible for listing on the National Register of Historic Places (Site 102.45(e)).

(3) The extent, nature, and duration of public uses of affected scenic resources

Deerfield Road is a minor collector, and the primary public use is local travel but it also provides access into Bear Brook State Park. It is to be expected that most are repeat users and will be familiar with the route. However, it is also reasonable to expect that they will appreciate the brief relief from the sense of enclosure and look through the break in the forest toward the distant ridge and Project. Though most of the expected use is by people who are going about their everyday activities, they will still take this opportunity to appreciate New Hampshire natural scenic character.

In addition, Deerfield Road is precisely the type of “blue road” or backroad that many people seek when looking for a scenic drive. For instance, it would be ideal for a motorcycle ride on a sunny spring day.

(4) The scope and scale of the change in the landscape visible from affected scenic resources

The scope and scale of change is considered high. The Project introduces two large industrial structures skylined above a forested ridge.

(5) The evaluation of the overall daytime and nighttime visual impacts of the facility as described in the visual impacts assessment and other relevant evidence

The above review of visual impacts per 301.05(b)(6) criteria found the Project to result in medium visual impacts.

DeWan and Associates considered this photosimulation to represent one from “a sample of private property observation points” (Site 301.05(b)(7)), and did not evaluate the potential visual impact.

(6) The extent to which the proposed facility would be a dominant and prominent feature within a natural or cultural landscape of high scenic quality or as viewed from scenic resources of high value or sensitivity

The Project will be prominently skylined above a forested ridge.

(7) The effectiveness of the measures proposed by the applicant to avoid, minimize, or mitigate unreasonable adverse effects on aesthetics, and the extent to which such measures represent best practical measures

The proposed mitigation is to use weathered steel structures. However, other mitigation measures need to be considered, including alternate structure design, color, and/or materials, and the use of non-specular conductors and insulators.

However, the proposed mitigation is ineffective because it does not address the source of visual impact—the project is skylined. The problem is that the existing ROW is not wide enough to accommodate a new 345 kV transmission line without excessively tall structures. It may be possible to co-locate the two 115 kV lines on a single structure, making sufficient space in the corridor to lower the height of the 345 kV structures. If the corridor cannot be rearranged to lower all the structures so they are screened, the only solution is to bury the 345 kV line.

5. Discussion of Unreasonable Adverse Effect on Aesthetics

The most effective form of mitigation for transmission line projects is the proper siting and alignment of the corridor. In general, siting an aerial transmission line at elevated locations does not follow generally accepted professional standards in avoidance of visual impacts. As proposed, the Project creates an unreasonable adverse effect on aesthetics.

To correct this situation, additional mitigation needs to be evaluated. For instance, co-location of the 115 kV lines on a single structure and the use of horizontal structures configuration would significantly reduce the visibility and overall prominence of the Project from this location. Non-specular conductors need to be

used to reduce visibility of the Project. West of Cross Country Road, lower H-frame structures were utilized that more appropriately matched the surrounding forest height. If lower H-frames or co-location on a single structure is not possible, then it is necessary to widen the corridor so that the height of all structures will be screened by the forest. If widening the corridor is not possible, then the only solution is to bury or reroute the 345 kV line.

Scenic Resource Name: Halls Stream Road**Potential Visual Impact:** High**Would the Project Result in Unreasonable Impacts:** Yes**Simulation:** DeWan & Associates Attachment 8: Private Property Photosimulations (Revised) page 8-3 to 8-5**Town:** Pittsburg, New Hampshire**Field Documentation Notes from a Location Near the Simulation**

Observation Notes: Existing distribution line corridor on NW side of crossing. There is a gas pipeline.

Scenic Attractiveness: Ordinary

Number of Visible Residences: 2

Number of Visible Existing Transmission Structures: 0

Scenery Interest: Low to Moderate

1. Narrative

Halls Stream Road is in Pittsburg, NH, and runs roughly north-south along the southern portion of New Hampshire's border with Canada. This road is within the Great North Woods region, and is also directly adjacent to a Ride the Wilds recreational vehicle trail. The road is accessible year-round, and provides access to farms and residential uses. In the area where the proposed Project is visible, the landscape is characterized by the rolling forested hillsides and mountains to the east of the road, a buried gas line corridor, as well as the Halls Stream valley and Canadian hillsides and mountains to the west. The area is also the western boundary of the Indian Stream Republic,¹¹ which is an historic unrecognized constitutional republic that existed in the 19th century that resonates with New Hampshire's values of independence, and therefore has cultural significance. This location is a roadway with a scenic quality that is supported with public funds (Site 102.45(c) and (d)). The proposed HVDC structures and new right-of-way clearing would be visible from the southern end of the road, near the border with Vermont. There is no AADT information collected for Halls Stream Road. The DeWan & Associates viewpoint location is approximately 641 feet north of the proposed corridor crossing. Halls Stream Road is representative of many road crossings which are within an area that possesses a scenic quality as well as supported by public funds.

2. Site 301.05(b)(6) Criteria used to characterize potential visual impacts**a. Expectations of typical viewer**

The typical viewer along Halls Stream Road is a motorist traveling by vehicle or motorcycle, or potentially on a recreational vehicle on the Ride the Wilds trail. Motorists utilize the road for various reasons, including specifically appreciating scenery along the road as well as simply utilizing the road to travel from one location to another. Views from this portion of the road include low-density residential and agricultural uses as well as the surrounding forested hills, mountains and river valley. Because this road is not part of a designated scenic byway and is adjacent to a gas corridor and nearby factory in Vermont, the expectations for the typical viewer at this location are considered low-medium.

b. Effect on future use and enjoyment

The Project would introduce a new transmission line corridor and large structures in an area that does not currently include above-ground transmission structures. This would be out of character with the existing

¹¹ https://en.wikipedia.org/wiki/Republic_of_Indian_Stream

conditions through this area. Although the valley is mostly farm fields and the gas corridor extends through the forest near the road, the forested hillside in the middleground appears otherwise intact, and any forest management is not readily recognizable. Because the proposed transmission infrastructure crosses the road, including locating a structure less than 60 feet from the road, the Project would have a negative effect on the future use and enjoyment of this roadway.

c. Extent of proposed facility, including all structure and disturbed areas, visible from the scenic resource

DeWan & Associates' Halls Stream Road simulation illustrates a new electrical transmission structure that would be visible in close proximity to a road and within the context of a nearby residence. The Terrain Viewshed indicates there would be visibility from almost half of the roadway through this area of Pittsburg without the benefit of the surrounding forest screening. The Vegetated Viewshed indicates intermittent visibility through this area where vegetation is cleared along the roadway.

d. The distance of the proposed facility from the scenic resource

DeWan & Associates identifies the distance between the Project and the simulation location as approximately 641 feet. The Project would cross immediately over the road, and other intermittent visibility is expected north of the crossing.

e. The horizontal breadth or visual arc of the visible elements of the proposed facility

The visual arc or visual angle is approximately 22 degrees of the view illustrated in the DeWan & Associates simulation, but may be larger as the line extends out of the view to the west across a clearing.

f. The scale, elevation and nature of the proposed facility relative to surrounding topography and existing structures

The visible structure would be located adjacent to the roadway when viewing from the road. Another structure would likely be visible west of the crossing, and structures on the hill to the east of the crossing may be visible from areas of the road further north. The proposed structures in this area range from 70 to 100 feet in height. The simulation indicates that the entire structure adjacent to the roadway on the east side would be visible. It is unknown how much of other structures would be visible from other areas along the road. The structure next to the road would be skylined above the top of the surrounding forest canopy. The siting of the new corridor and structure in close proximity to the road make visibility of the proposed structure prominent, and contrast of the structure and conductors with the vegetated backdrop and skyline would likely vary based on seasonal and weather conditions. Other structures that ascend the hill may be skylined when viewing the Project from locations further north.

g. The duration and direction of the typical view of elements of the proposed facility

Visibility of the Project would be to the east and west from the portion of the road that has visibility of the crossing. Visibility would be to the southeast from portions of the road that are north of the NPT corridor. Because varying forms of transportation may be used (e.g. walking, running, biking, driving and/or motorcycling, and recreational vehicle), duration of views would vary, but would be possible while traveling through cleared areas where views of the surrounding landscape is expected.

h. The presence of intervening topography between the scenic resource and elements of the proposed facility

Landform is expected to screen additional structures to the east beyond the hill. The surrounding forest would help to screen additional structures, lower portions of the structures that are visible, and views of the cleared ROW (other than when immediately under the road crossing). The areas of visibility and

associated structures described above are based on screened views, including the effect of surrounding vegetation. Overall, topography and proximity to the road would elevate the appearance of the Project.

Potential Visual Impact Based on Analysis of Factors Under Site 301.05(b)(6)

In summary, at Halls Stream Road we determined that there is a medium-low expectation for scenery. The Project would introduce an element with industrial character into parts of a landscape that are primarily natural and only lightly developed. Because of the proximity to the road and elevated nature of the Project as it proceeds east, the structures would be relatively prominent and potentially result in a high level of contrast with the existing forested hillside, depending on seasonal and weather conditions. There would be a negative degradation to the scenic quality of the landscape, which would result in a negative effect to the future use and enjoyment of users of Halls Stream Road. Additionally, this area is the southeastern boundary of the former Indian Stream Republic, a culturally significant area. We therefore would rate the potential visual impact as high.

3. Mitigation - Site 301.05(b)(10)

The NPT VIA does not specifically cite mitigation for the area around Halls Stream Road, though general statements about mitigation in the Subarea I Impact summary (NPT VIA, p. 1-5) note that the clearing area was redesigned to minimize the required area, and that the corridor avoids major mountains and prominent hills.

4. Site 301.14(a) Criteria Relative to Findings of Unreasonable Adverse Effect on Aesthetics

(1) Existing character of the area of potential visual impact

This portion of Halls Stream Road is in the Great North Woods region of New Hampshire and has limited residential and agricultural development along the roadside. The surrounding landscape is generally characterized by forested hills and mountains. Views from the roadway are a mix of the low-density development and the surrounding natural hillsides with minimal evidence of forest management. During field investigation that T. J. Boyle performed as part of the DOE VIA, we gave a rating of Ordinary to the Scenic Attractiveness near the DeWan & Associates simulation location.

(2) The significance of affected scenic resources and their distance from the proposed facility

The area is also the western boundary of the Indian Stream Republic,¹² which is an historic unrecognized constitutional republic that existed in the 19th century that resonates with New Hampshire's values of independence, and therefore has cultural significance. This location is a roadway with a scenic quality that is supported with public funds (Site 102.45(c) and (d)). The visible portions of the Project are immediately adjacent to the road at the crossing, and visibility is expected from locations along the road up to 2.25 miles to the north of the crossing.

(3) The extent, nature, and duration of public uses of affected scenic resources

Public uses along Halls Stream Road include walking, biking, recreational vehicles, and driving/motorcycling. The duration of use of the scenic resource would vary based on mode of travel, but would typically be a few minutes. The duration of visibility would vary based on mode of travel, but would potentially be a significant portion of the total length of the road as it traverses the southwest corner of town of Pittsburg.

(4) The scope and scale of the change in the landscape visible from affected scenic resources

The scope and scale of change is considered high. Although existing views include other surrounding transmission facilities (gas line), the particular siting of the new NPT corridor, design and character of

¹² https://en.wikipedia.org/wiki/Republic_of_Indian_Stream

proposed structures, the proximity and extent of visibility would result in a significant change to the existing landscape, especially for regular users of the road. Changes to the landscape would be prominent and in contrast to the existing character of the roadway.

(5) The evaluation of the overall daytime and nighttime visual impacts of the facility as described in the visual impacts assessment and other relevant evidence

The above review of visual impacts per 301.05(b)(6) criteria finds the Project to result in high visual impacts. The NPT VIA did not assess this resource.

(6) The extent to which the proposed facility would be a dominant and prominent feature within a natural or cultural landscape of high scenic quality or as viewed from scenic resources of high value or sensitivity

The Project would result in portions of new electrical transmission structures being visible from the simulation location. Additional structures would be visible from other locations further north along Halls Stream Road. These structures would be visible at or near the road crossing or along the ridgeline east of the road. As a result, the Project would be inevitably noticeable in the vicinity of the corridor crossing, and would be considered a prominent feature within the visual landscape. At the crossing, the adjacent galvanized steel lattice structures would be dominant and prominent, and would contrast from the existing conditions. When looking south from locations further north, visibility of the surrounding hillsides are typically of a uniform forest cover, and the elevated position and contrast of the structures with the surrounding natural landscape would result in the transmission structures being somewhat dominant and prominent as seen from the road.

(7) The effectiveness of the measures proposed by the applicant to avoid, minimize, or mitigate unreasonable adverse effects on aesthetics, and the extent to which such measures represent best practical measures

NPT has not specifically proposed mitigation, although general statements about mitigation in the Subarea I Impact summary (NPT VIA, p. 1-5) note that the clearing area was redesigned to minimize the required area, and that the corridor avoids major mountains and prominent hills.

For this particular resource, not all of these general measures are accurate or adequate. For instance, views of skyline structures may be possible for travelers north of the crossing headed south along Halls Stream Road, and the hill that is east of the road could certainly be considered prominent.

At the corridor crossing, an 85' tall structure is proposed within 60 feet of the road, and would not be well screened by existing or proposed vegetation. Additionally, the proposed structures and corridor clearing would be prominently located on the hillside east of Halls Stream Road, and the Project would be in an elevated location that would result in contrast of the galvanized structures and untreated conductors with the background forest, particularly on days with low cloud cover and high visibility. Other forms of mitigation need to be considered at this location, including choosing a corridor that does not place the Project at an elevated location within an otherwise intact forest landscape, utilizing alternative mitigation measures for the structure types and conductors such as Natina Steel and non-specular conductors (all of which are discussed in Section 4.4 of the T. J. Boyle Visual Impact Analysis Report), and setting proposed structures significantly back from the roadway. From Halls Stream Road, mitigation as proposed by NPT would be inadequate and would not represent use of all best practical mitigation measures or corridor routing.

5. Discussion of Unreasonable Adverse Effect on Aesthetics

The most effective form of mitigation for transmission line projects is the proper siting and alignment of the corridor. In general, siting an aerial transmission line at elevated locations does not follow generally accepted professional standards in avoidance of visual impacts. T. J. Boyle found impacts to this resource

unreasonable due to the proximity of the structure to the roadway, which is setback approximately 50 feet from the edge of road, and the lack of an existing corridor in existing conditions. Simply relocating the structure further from the road would significantly reduce impacts, or undergrounding the line around or through the prominent hillside that lies east of the road.

Scenic Resource Name: Connecticut River Scenic Byway (Route 3 near Howland Road)**Potential Visual Impact:** High**Would the Project Result in Unreasonable Impacts:** Yes**Simulation:** DeWan & Associates Attachment 8: Private Property Photosimulations (Revised) page 8-6 to 8-8**Town:** Clarksville, New Hampshire**Field Documentation Notes from a Location Near the Simulation**Observation Notes: (No notes were recorded)Scenic Attractiveness: OrdinaryNumber of Visible Residences: 16Number of Visible Existing Transmission Structures: 0Scenery Interest: Low to Moderate**1. Narrative**

Connecticut River Scenic Byway (Route 3 near Howland Road) is a National Scenic Byway that includes over 500 miles of roads in New Hampshire and Vermont, including this area of Clarksville, NH, which is part of the state's Great North Woods region. The Byway and associated programs was and are funded by a mix of federal, state and local funds.¹³ The Byway is accessible year-round, and in the area where the proposed corridor is visible the landscape is characterized by rolling forested hillsides and mountains and the developed valley.

In the area where the proposed Project is visible, the landscape is characterized by the rolling forested hillsides and mountains to the east of the road, a buried gas line corridor, as well as the Halls Stream valley and Canadian hillsides and mountains to the west. The area that the Project traverses is also near the southwestern boundary of the Indian Stream Republic,¹⁴ which is an historic unrecognized constitutional republic that existed in the 19th century that resonates with New Hampshire's values of independence, and therefore has cultural significance. T. J Boyle selected this site because it is a State designated scenic Byway with no existing visibility of transmission infrastructure. The proposed HVDC structures and new right-of-way clearing would be visible from this location, and would traverse a prominent hillside visible from the roadway. The AADT for this portion of Route 3 is 1700. The DeWan & Associates viewpoint location is approximately 1.03 miles south of the NPT corridor. The Connecticut River Scenic Byway is a significant state and national resource that is visited throughout the year, and therefore has special scenic concern.

2. Site 301.05(b)(6) Criteria used to characterize potential visual impacts**a. Expectations of typical viewer**

The typical viewer along Route 3 is a motorist traveling by vehicle or motorcycle. Motorists utilize the Byway for various reasons, including specifically appreciating scenery along the scenic Byway as well as simply utilizing the road to travel from one location to another, such as Pittsburg and Colebrook. Views from this portion of the Byway include low- and medium-density residential, commercial and agricultural uses as well as the surrounding forested hills and mountains. Even though the DOE VIA observation notes indicate a low to moderate scenery interest, because this road is part of a designated scenic Byway, the expectations for the typical viewer are considered high. Use expectation for the Byway is also

¹³ <http://www.crjc.org/pdf/files/Nat'l%20scenic%20Byway.pdf>

¹⁴ https://en.wikipedia.org/wiki/Republic_of_Indian_Stream

informed by the Section 4.2 of the T. J. Boyle Visual Impact Analysis Report and results from the Community Workshops, which indicates that scenery is an important factor for this location.

b. Effect on future use and enjoyment

The Project would introduce a new man-made component on the hillside, which is a relatively intact natural landscape. The proposed structures and corridor would be out of character with the existing conditions through this area of the Byway. Although the valley is developed, the forested hillsides in the middleground appear otherwise intact, and any forest management is not readily recognizable. The Project would have a negative effect on the future use and enjoyment of the Connecticut River Scenic Byway in this location.

c. Extent of proposed facility, including all structure and disturbed areas, visible from the scenic resource

DeWan & Associates' simulation in this location illustrates portions of three (3) new electrical transmission structures and changes to the forest canopy because of ROW clearing that would be visible. The Terrain Viewshed indicates there would be visibility from almost all of the roadway through this area of Clarksville without the benefit of the surrounding forest screening. The Vegetated Viewshed indicates intermittent visibility from most areas where vegetation is cleared along the roadway.

d. The distance of the proposed facility from the scenic resource

DeWan & Associates identifies the distances between the Project and the simulation location as being 1.0 mile. Other visibility is expected west and northeast of the simulation location.

e. The horizontal breadth or visual arc of the visible elements of the proposed facility

The visual arc or visual angle is approximately 18.5 degrees of the view illustrated in the DeWan & Associates simulation.

f. The scale, elevation and nature of the proposed facility relative to surrounding topography and existing structures

The visible structures would descend the hillside when looking north from the simulation location. These structures range from 65 to 100 feet in height. The simulation indicates that where visible, more than half of the height of the structures could be viewed from the Byway. The structure near the top of the hill would be skylined above the tops of the surrounding forest canopy, and the other two would be backgrounded by the existing hillside. The siting of the corridor in an elevated location along the hillside makes visibility of the proposed structures prominent, and contrast of the structures and conductors with the vegetated backdrop and skyline would likely vary based on seasonal and weather conditions.

g. The duration and direction of the typical view of elements of the proposed facility

Visibility of the Project would be to the north from the portion of the Connecticut River Scenic Byway that lies south of the NPT corridor. Visibility would be to the northeast and west from the portion of the Byway that lies west and northeast of the simulation location, respectively. Because varying forms of transportation may be used (e.g. walking, running, biking, driving and/or motorcycling), duration of views would vary, but would be possible while traveling through cleared areas where views of the surrounding landscape is expected.

h. The presence of intervening topography between the scenic resource and elements of the proposed facility

Landform is expected to screen additional structures to the northwest, but other structures further northeast would be visible from other locations along the Byway. Additionally, forest that surrounds the roadway and proposed corridor would help to screen additional structures. The visible structures described above are based on screened views, including the effect of the surrounding vegetation. Overall, the underlying topography would elevate the appearance of the Project.

Potential Visual Impact Based on Analysis of Factors Under Site 301.05(b)(6)

In summary, along the Connecticut River Scenic Byway we determined that there is a high expectation for scenery. Although the simulation location is a developed area, the Project would introduce an element with industrial character into parts of a landscape that are primarily natural, and other locations along the Byway with visibility of the Project are less developed. Because of the elevated nature of the Project as it proceeds east over the hill, the structures would be relatively prominent and potentially result in a high level of contrast with the existing forested hillside and skyline, depending on seasonal and weather conditions. There would be a negative degradation to the scenic quality of the landscape, which would result in a negative effect to the future use and enjoyment of users of the Connecticut River Scenic Byway. Additionally, the area that the Project traverses is near the southwestern boundary of the former Indian Stream Republic, a culturally significant area. We therefore would rate the potential visual impact as high.

3. Mitigation - Site 301.05(b)(10)

The NPT VIA does not specifically cite mitigation for this area of the Project, though general statements about mitigation in the Subarea I Impact summary (NPT VIA, p. 1-5) note that the clearing area was redesigned to minimize the required area, and that the corridor avoids major mountains and prominent hills.

4. Site 301.14(a) Criteria Relative to Findings of Unreasonable Adverse Effect on Aesthetics

(1) Existing character of the area of potential visual impact

This portion of the Connecticut River Scenic Byway is in the Great North Woods region of New Hampshire and has only minor development along the roadside, and the surrounding landscape is generally characterized by forested hills and mountains. Although the simulation location is in a developed area, views from the roadway are of a predominantly natural landscape with minimal obvious evidence of forest management. During field investigation that T. J. Boyle performed as part of the DOE VIA, we gave a rating of Ordinary to the Scenic Attractiveness near the DeWan & Associates simulation location, mostly due to the adjacent development. Other nearby areas that would have visibility of the proposed Project as it proceeds east were considered Noteworthy.

(2) The significance of affected scenic resources and their distance from the proposed facility

The Connecticut River Scenic Byway is a designated scenic Byway, which is a scenic resource with state and national designation and is supported with public funds. Scenic Byways are specifically valued for their scenic quality in the State of New Hampshire. The visible portions of the Project are approximately 1.00 miles from the simulation location, and other locations along the Byway would have visibility of the Project as it traverses this area.

(3) The extent, nature, and duration of public uses of affected scenic resources

Public uses along the Byway include walking, biking, and driving/motorcycling, and potentially include bus tours and other similar recreational uses. The duration of use of the scenic resource would vary based on mode of travel, but would typically be longer than a few minutes and potentially several hours of driving along this scenic roadway. The duration of visibility would vary based on mode of travel, but would potentially be a significant portion of the total length of the Byway as it traverses the town of Clarksville.

(4) The scope and scale of the change in the landscape visible from affected scenic resources

The scope and scale of change is considered medium-high. Although existing views include other surrounding development, the particular siting of the new NPT corridor, design and character of proposed galvanized lattice structures, and extent of visibility would result in a moderately significant change to the existing landscape. Changes to the landscape would be prominent and in direct contrast to the existing character.

(5) The evaluation of the overall daytime and nighttime visual impacts of the facility as described in the visual impacts assessment and other relevant evidence

The above review of visual impacts per 301.05(b)(6) criteria finds the Project to result in high visual impacts. The NPT VIA did not assess this resource from the simulation location, but the NPT VIA gave the Connecticut River Scenic Byway an overall impact of medium.

(6) The extent to which the proposed facility would be a dominant and prominent feature within a natural or cultural landscape of high scenic quality or as viewed from scenic resources of high value or sensitivity

The Project would result in portions of new electrical transmission structures being visible from the simulation location, and additional structures would be visible from other locations along the Byway. These structures would be visible at or near the road crossing or along the ridgeline east of the road. As a result, the Project would be inevitably noticeable from the simulation location and other areas along the Byway, and would be considered a prominent feature within the visual landscape. The galvanized steel lattice structures would be dominant and prominent, and would contrast from the existing conditions.

(7) The effectiveness of the measures proposed by the applicant to avoid, minimize, or mitigate unreasonable adverse effects on aesthetics, and the extent to which such measures represent best practical measures

NPT has not specifically proposed mitigation for the Project as it traverses the hillside, although general statements about mitigation in the Subarea I Impact summary (NPT VIA, p. 1-5) note that the clearing area was redesigned to minimize the required area, and that the corridor avoids major mountains and prominent hills.

For this particular resource, not all of these general measures are accurate or adequate. The hillside where the Project is proposed is considered prominent, and was not avoided in the siting of the proposed corridor. The Project would be in an elevated location that would result in contrast of the galvanized structures and untreated conductors with the background forest and skyline, particularly on days with low cloud cover and high visibility. Other forms of mitigation need to be considered at this location, including choosing a corridor that does not place the Project at an elevated location within an otherwise intact forest landscape, and utilizing alternative mitigation measures for the structure types and conductors such as Natina Steel and non-specular conductors (discussed in Section 4.4 of the T. J. Boyle Visual Impact Analysis Report). From the Connecticut River Scenic Byway, mitigation as proposed by NPT would be inadequate and would not represent use of all best practical mitigation measures or corridor routing.

5. Discussion of Unreasonable Adverse Effect on Aesthetics

The most effective form of mitigation for transmission line projects is the proper siting and alignment of the corridor. In general, siting an aerial transmission line at elevated locations does not follow generally accepted professional standards in avoidance of visual impacts. Impacts to this resource were found to be unreasonable because of the proposed elevated location of the corridor, and the lack of an existing corridor or other transmission infrastructure on the hillside. No attempts appear to have been made at this location to mitigate adverse effects from the Byway. Alternative corridor alignment, alternative structures, alternative materials, and non-specular conductors and/or colors need to be considered.

Scenic Resource Name: North Road**Potential Visual Impact:** High**Will the Project Result in Unreasonable Impacts:** Yes**Simulation:** DeWan & Associates Attachment 8: Private Property Photosimulations (Revised) page 8-21 to 8-23**Town:** Lancaster, New Hampshire**Field Documentation Notes from a Location Near the Simulation**Scenic Attractiveness: NoteworthyNumber of Visible Residences: 9Number of Visible Existing Transmission Structures: 2Scenery Interest: Moderate to High**1. Narrative**

North Road is a paved two-lane rural collector road in Lancaster, NH with an AADT of 1600 vehicles. There are scattered residences and farm buildings along the road, and the viewpoint is approximately a mile from the village of Lancaster. The foreground is composed of pasture and cropland providing an open view to woods in the middleground and dramatic view of the White Mountains in the background. The winter conditions with low clouds in the photosimulation do not do justice to the scenic quality of these distant views. Approximately 360 feet south of where the transmission line crosses the road, there is a 78-acre conservation area that is part of the NRCS Grassland Preserve Program.

The existing 115 kV transmission line uses wooden H-frame structures that are 43 to 52 feet high, which is in scale with the scattered trees in the area. The proposal is to remove these wooden structures and replace them with vertically configured weathered steel monopole structures that range between 80 and 102 feet high. The NPT HVDC structures range between 85 and 115 feet high. To the south of North Road, they are weathered steel monopoles; the first structure is only 75 feet from the edge of the pavement. To the north of the road, the first structure is also a weather steel monopole, but then they change to galvanized steel lattice towers.

North Road is a scenic resource because it provides an opportunity for scenic drives (Site 102.45(c)), which is one of the most common forms of recreation in New Hampshire (Site 102.45(d)).

2. Site 301.05(b)(6) Criteria used to characterize potential visual impacts**a. Expectations of typical viewer**

The typical viewer will be a traveler on North Road and most viewers will be using it for utilitarian purposes. Nonetheless, the roads alignment provides a very pleasing kinetic experience and the distant views to the White Mountains provide scenic character. The area is typical of the rural New Hampshire countryside, and users will expect it to possess a scenic quality.

b. Effect on future use and enjoyment

The Project will decrease the existing scenic quality, and its industrial character will appear incongruous in the context of a traditional Northern New England rural landscape. The Project will have a negative effect on the enjoyment of viewers out for a scenic drive, as well as for people going about their daily business. Tourists and recreationist may well be less likely to choose this route for their enjoyment, though there may not be suitable alternatives for those who must use North Road as a route for transportation.

c. Extent of proposed facility, including all structure and disturbed areas, visible from the scenic resource

The increased height and industrial-appearing character of the new structures will make them more visible and intrusive than the much shorter wooden structures. Visibility of the existing structures effects a stretch of road approximately a third of a mile long; the new structures will be visible along a two-mile stretch.

d. The distance of the proposed facility from the scenic resource

DeWan & Associates identifies the distances between the viewer and the nearest structure visible in the photosimulation to be between 626 and 680 feet. However, a 90-foot high structure is proposed just 50 feet from the road's southern edge and an 85-foot structure is 75 feet from the road; both structures will loom up over travelers as they approach the transmission line crossing.

e. The horizontal breadth or visual arc of the visible elements of the proposed facility

The two structures visible in the photosimulation only occupy a horizontal arc of 2 or 3 degrees. However, from this viewpoint it is more likely that the Project will be seen over a horizontal arc of 120° or more.

f. The scale, elevation and nature of the proposed facility relative to surrounding topography and existing structures

The Applicant proposes to replace the existing wooden structures with steel structures that are twice as high, and to add a second, HVDC transmission line that also uses these very tall structures. As can be seen in DeWan & Associates' photosimulation, the structures will loom over the existing residences, and their industrial-appearing character is not in keeping with this rural landscape.

g. The duration and direction of the typical view of elements of the proposed facility

The existing structures may be visible for perhaps 15 seconds, though they may go largely unnoticed because of their low prominence. The Project will be visible for over a minute, and the more prominent structures are more likely to draw attention because of their incongruous industrial-appearance.

h. The presence of intervening topography between the scenic resource and elements of the proposed facility

The foreground is relatively flat, but there are scattered trees and rural buildings in the area that will provide intermittent screening as one travels on North Road. The contrast between existing buildings and trees compared to the proposed structures will demonstrate to significant scale difference between features.

Potential Visual Impact Based on Analysis of Factors Under Site 301.05(b)(6)

In summary, as North Road, the Project will replace wooden H-frame structures that fit well in this rural farm landscape with two transmission lines that have prominent industrial-appearing steel structures that are twice as tall as the existing structures. We therefore rate the potential visual impact as high.

3. Mitigation - Site 301.05(b)(10)

The NPT VIA does not discuss mitigation for this location, or even for Lancaster in general. However, the Applicant has generally considered the use of weathered steel monopoles, such as used to the south of North Road, as a mitigation. It is unexplained why this mitigation stops after the first structure to the north of the road—galvanized steel lattice towers are used for the HVDC line and monopoles are used for the 115 kV line going north.

4. Site 301.14(a) Criteria Relative to Findings of Unreasonable Adverse Effect on Aesthetics

(8) Existing character of the area of potential visual impact

The landscape character of the foreground is rural-agricultural open space; the midground is mostly forested and there are distant views to the Green Mountains.

(9) The significance of affected scenic resources and their distance from the proposed facility

This is a public road that possesses a scenic quality. Going for a scenic drive is one of New Hampshire's most common recreation activities. For instance, this road is very suitable for a motorcycle ride on a clear spring day.

(10) The extent, nature, and duration of public uses of affected scenic resources

Most travelers on North Road are expected to be using it primarily for utilitarian purposes, but are expected to also enjoy the scenery; for others the scenic drive will be their primary purpose. The duration of exposure may be a minute or longer, which is more than enough time to register the impact of the Project to the scenic quality.

(11) The scope and scale of the change in the landscape visible from affected scenic resources

The scope and scale of change is high. Although existing views include wooden H-frame structures, they are in scale and character with the surroundings. The new structures would be much higher, looming over the adjacent residence and greatly extending the area of visibility. The changes to the landscape are both, dominant and prominent.

(12) The evaluation of the overall daytime and nighttime visual impacts of the facility as described in the visual impacts assessment and other relevant evidence

This review of visual impacts per 301.05(b)(6) criteria found the Project to result in high visual impacts. The NPT VIA did not evaluate the visual impact from North Road.

(13) The extent to which the proposed facility would be a dominant and prominent feature within a natural or cultural landscape of high scenic quality or as viewed from scenic resources of high value or sensitivity

The proposed facility will become the visually dominant and prominent feature from this location.

(14) The effectiveness of the measures proposed by the applicant to avoid, minimize, or mitigate unreasonable adverse effects on aesthetics, and the extent to which such measures represent best practical measures

The visual impact is caused by the excessive height of industrial-appearing structures in the context of an open rural landscape. Locating very large weathered steel monopoles 50-feet from the roadside is an ineffective mitigation. Burial of the Project would be the most effective mitigation in this area. Otherwise the structures must be located further from the roadway, structure height must be reduced, and non-specular insulators and conductors must be used. Alternative structure designs that allows the structure height to be reduced need to be evaluated.

5. Discussion of Unreasonable Adverse Effect on Aesthetics

T.J. Boyle finds impacts to this resource unreasonable due to the proximity and scale of proposed structures to the roadway and buildings, and because of the lack of proposed mitigation. Relocating structures further from the roadway, evaluating use of delta configuration for 115 kV structures, landscape mitigation, and non-specular conductors are all measures that could reduce impacts at this location.

Scenic Resource Name: Northside Road / Upper Ammonoosuc River Crossing (Northern Forest Canoe Trail)**Potential Visual Impact:** High**Would the Project Result in Unreasonable Impacts:** Yes**Simulation:** DeWan & Assocs Attachment 8: Private Property Photosimulations (Revised) page 8-15 to 8-17**Town:** Stark, New Hampshire**Field Documentation Notes from a Location Near the Simulation**Observation Notes: NoneScenic Attractiveness: NoteworthyNumber of Visible Residences: 2Number of Visible Existing Transmission Structures: 9Scenery Interest: Moderate**1. Narrative**

Northside Road / Upper Ammonoosuc River Crossing (Northern Forest Canoe Trail) is located in Stark, NH. In the vicinity of the crossing, Northside Road runs roughly northwest-southeast, and passes approximately 1,015 feet northeast of where the NPT crosses the Upper Ammonoosuc River. This road is within the Great North Woods region, and the river is the site of the Northern Forest Canoe Trail as it passes through the area. The road is accessible year-round, and provides access to farms and low-density residential uses. In the area where the proposed Project is visible, the landscape is characterized by the rolling forested hillsides and mountains around the road, agricultural fields in the river valley, and the existing transmission corridor and associated wooden 115 kV H-frame structures. The river has a long history as a trade route for the Abenaki Indians and European settlers, and therefore has cultural significance.¹⁵ This location is a roadway with a scenic quality that is supported with public funds (Site 102.45(c) and (d)). The proposed HVDC structures and limited new right-of-way clearing would be in the area around the corridor crossing, as well as from the river. There is no AADT information collected for Northside Road. The DeWan & Associates viewpoint location is approximately 128 feet southeast of the proposed corridor crossing over the road, and 915 feet northeast of the proposed corridor crossing over the river. Northside Road and the Upper Ammonoosuc River are representative of many road and river crossings which are within an area that possesses a scenic quality as well as supported by public funds.

2. Site 301.05(b)(6) Criteria used to characterize potential visual impacts**a. Expectations of typical viewer**

The typical viewer along Northside Road is a motorist traveling by vehicle or motorcycle, or potentially on farm equipment. Motorists utilize the road for various reasons, including specifically appreciating scenery along the road as well as simply utilizing the road to travel from one location to another. Views from this portion of the road include low-density residential and agricultural uses as well as the surrounding forested hills, mountains and river valley. Because this road is not part of a designated scenic byway but affords views to the surrounding hills and mountains, the expectations for the typical viewer at this location are considered medium. According to the VisitNH.gov information page about the Upper Ammonoosuc River, travelers on the river are interested in outdoor recreation, cultural heritage exploration, wildlife

¹⁵ <https://www.visitnh.gov/itineraries/ammonoosuc-cultural-heritage.pdf>

viewing, and the Percy Peaks and Kilkenney Mountains. Expectation of pabblers on the river would be high.

b. Effect on future use and enjoyment

The Project would introduce a new transmission line and large weathering steel structures in an area that currently only contains a single transmission line that uses shorter wooden H-frame structures. The use of taller steel structures would be out of character with the existing conditions through this area. Although the valley is mostly farm fields with the existing corridor clearing, the forested hillsides in the middleground and background appears otherwise intact, and any forest management is not readily recognizable. Because the proposed transmission infrastructure crosses the road, including locating a structure approximately 50 feet from the road and another structure approximately 55 feet from the river, the Project would have a negative effect on the future use and enjoyment of this roadway and river.

c. Extent of proposed facility, including all structure and disturbed areas, visible from the scenic resource

The DeWan & Associates Northside Road simulation illustrates the new electrical transmission structures that would be visible crossing the field and river, and this view is within the context of a nearby residence. Structures closer to the road would be visible to the right of the view shown in the simulation. The Terrain Viewshed indicates there would be visibility from almost all of the roadway through this area of Stark without the benefit of the surrounding forest screening. The Vegetated Viewshed indicates intermittent visibility through this area where vegetation is cleared along the roadway.

d. The distance of the proposed facility from the scenic resource

DeWan & Associates identifies the distance between the Project and the simulation location as approximately 653 to 2,766 feet. The Project would cross immediately over the road, and other intermittent visibility is expected northwest of the crossing. The Project would also cross immediately over the river.

e. The horizontal breadth or visual arc of the visible elements of the proposed facility

The visual arc or visual angle is approximately 26 degrees of the view illustrated in the DeWan & Associates simulation, and would actually be larger as the line extends to the right of the image and across the road to the northeast.

f. The scale, elevation and nature of the proposed facility relative to surrounding topography and existing structures

The visible structures would be located adjacent to the roadway when viewing from the road, as well as in the middleground as the corridor crosses the river and proceeds southwest. Other structures would be visible northeast of the crossing, though these would be mostly screened by surrounding vegetation. The height of the existing structures (43' to 52') relative to the proposed structures (83.5 to 120') would be out of character with the existing conditions through the area where the transmission corridor is visible. The simulation indicates that for most of the visible structures visible from the roadway, the entire structure would be visible (rather than only a portion). Other structures closer to the roadway that are not visible in the simulation would also be entirely visible from the roadway. Almost all of the structures visible from the roadway are skylined above the top of the surrounding forest canopy. The siting of the new corridor and structures in close proximity to the road make visibility of the proposed structures prominent, and contrast of the structure and conductors with the vegetated backdrop and skyline would likely vary based on seasonal and weather conditions.

g. The duration and direction of the typical view of elements of the proposed facility

Visibility of the Project would be to the southwest and northeast from the portion of the road and river that have visibility of the transmission line as it traverses this area. Because varying forms of transportation may be used (e.g. watercraft, walking, running, biking, driving and/or motorcycling), duration of views would vary, but would be possible while traveling through cleared areas where views of the surrounding landscape is expected.

h. The presence of intervening topography between the scenic resource and elements of the proposed facility

Landform is expected to screen additional structures to the northeast beyond the rise of land that is near the road, as well as structures that are further southwest beyond about 3,300 feet from the simulation viewpoint. Other structures further from the simulation location would potentially be visible from other portions of the road. The surrounding forest would help to screen additional structures and views of the cleared ROW from areas further afield. The areas of visibility and associated structures described above are based on screened views, including the effect of surrounding vegetation. Overall, the lack of existing vegetation and proximity of proposed structures to the road would elevate the appearance of the Project.

Potential Visual Impact Based on Analysis of Factors Under Site 301.05(b)(6)

In summary, at Northside Road and the Upper Ammonoosuc River we determined that there is a medium expectation for scenery. The Project would introduce structures with an industrial character into parts of a landscape that are primarily natural and agricultural, only lightly developed, and with shorter existing wooden H-frame structures. Because of the proposed structure heights and materials, as well as the proximity to the road and exposed nature of the Project as it proceeds southeast, the structures would be relatively prominent and potentially result in a high level of contrast with the existing field and forested hillside, depending on seasonal and weather conditions. There would be a negative degradation to the scenic quality of the landscape, which would result in a negative effect to the future use and enjoyment for users of Northside Road and the Upper Ammonoosuc River. We therefore would rate the potential visual impact as high.

3. Mitigation - Site 301.05(b)(10)

The NPT VIA does not specifically cite mitigation for Northside Road. The NPT VIA cites mitigation for the Upper Ammonoosuc River as follows:

- Using weathering steel monopole structures to minimize contrast in color and form at the river crossing.
- Maintaining riparian vegetation within the corridor.
- Matching the spacing of both the 115-kV and 320-kV DC transmission structures so they appear as pairs.
- Locating the more visible structures on the east side of the river much further back than the existing H-frame structure. (NPT VIA, p. 1-93)

4. Site 301.14(a) Criteria Relative to Findings of Unreasonable Adverse Effect on Aesthetics**(1) Existing character of the area of potential visual impact**

This portion of Northside Road and the nearby Upper Ammonoosuc River are in the Great North Woods region of New Hampshire and have limited development along the roadside and river. The surrounding landscape is generally characterized by forested hills and mountains, including the White Mountain National Forest to the south and the Nash Stream Forest to the north. Views from the roadway and river are of a predominantly natural landscape in the middleground and background with minimal evidence of forest management. During field investigation that T.J. Boyle performed as part of the DOE VIA, it gave a rating of Noteworthy to the Scenic Attractiveness near the DeWan & Associates simulation location.

(2) The significance of affected scenic resources and their distance from the proposed facility

Northside Road is a roadway with a scenic quality that is supported with public funds (Site 102.45(c) and (d)). The visible portions of the Project are immediately adjacent to the road at the crossing, and visibility is expected from locations along nearby portions of the road due to the agricultural use of the field. The Upper Ammonoosuc River is part of the designated Northern Forest Canoe Trail and associated cultural history of the river as a major transportation corridor.

(3) The extent, nature, and duration of public uses of affected scenic resources

Public uses along Northside Road include walking, biking, and driving/motorcycling. Travel on the river is typically by watercraft such as canoe or kayak. The duration of use of the scenic resource would vary based on mode of travel, but would likely range from several seconds along the road to several minutes along the river.

(4) The scope and scale of the change in the landscape visible from affected scenic resources

The scope and scale of change is considered high. Although existing views include the existing transmission facilities, the number, design and character of proposed structures, and the proximity and extent of visibility would result in a significant change to the existing landscape, especially for regular users of the road and river. Changes to the landscape would be prominent and in contrast to the existing character of the area.

(5) The evaluation of the overall daytime and nighttime visual impacts of the facility as described in the visual impacts assessment and other relevant evidence

This review of visual impacts per 301.05(b)(6) criteria found the Project to result in high visual impacts. The NPT VIA found the visual impact to the Upper Ammonoosuc River (Northern Forest Canoe Trail) to be medium, but did not rate the visual impact to Northside Road.

(6) The extent to which the proposed facility would be a dominant and prominent feature within a natural or cultural landscape of high scenic quality or as viewed from scenic resources of high value or sensitivity

The Project would result in new and much larger electrical transmission structures being visible from the simulation location as well as from the river. Additional structures would potentially be visible from other locations further northwest along Northside Road. These structures would be visible at or near the road crossing or along the ridgeline northeast of the road. The Project would be inevitably noticeable in the vicinity of the corridor crossing over the road and river, and would be considered a prominent feature within the visual landscape. At the road crossing, the proposed adjacent weathering steel structure southwest of the road would be dominant and prominent, and would contrast from the existing conditions. At the river crossing, the proposed adjacent weathering steel structure southwest of the river would be dominant and prominent, and due to the number and nature of new structures would contrast from the existing conditions. When looking southeast from locations further northwest, visibility of the surrounding hillsides are typically of a uniform forest cover, and any visibility of the taller proposed structures would contrast with the surrounding natural landscape.

(7) The effectiveness of the measures proposed by the applicant to avoid, minimize, or mitigate unreasonable adverse effects on aesthetics, and the extent to which such measures represent best practical measures

NPT has not specifically proposed mitigation for the road crossing, although general statements about mitigation in the Subarea I Impact summary (NPT VIA, p. 1-5) note that the clearing area was redesigned to minimize the required area, and that the corridor avoids major mountains and prominent hills. Additionally, NPT has proposed mitigation for the river crossing as described above. However, for these particular resources not all of the proposed measures are accurate or adequate.

In particular, no information has been provided about whether maintaining riparian vegetation within the corridor would mitigate views from the river. Additionally, although the proposed structure northeast of the river crossing would be moved further back from the river than the existing structure, the proposed structures southwest of the river are proposed much closer than the existing H-frame structures. This change would result in a 92.5' weathering steel 115 kV structure being located 55 feet southwest of the river, and a 100' weathering steel HVDC monopole structure being located 102 feet southwest of the river. For comparison, the existing H-frame structures on either side of the river are both 43' tall, and the closest one of these structures is 133' from the river.

Where the corridor crosses the road, a 100' tall 115 kV weathering steel structure is proposed 61' from the road, a 110' tall weathering steel HVDC monopole structure is proposed 55' from the road, and neither of these would be well screened by existing vegetation. These and other structures to the southwest would be clearly visible, and would result in contrast of the structures and untreated conductors with the background forest and skyline. Other forms of mitigation need to be considered at this location, including utilizing horizontal or other more compact configurations and setting proposed structures significantly back from the roadway and river. From Northside Road and the Upper Ammonoosuc River, mitigation as proposed by NPT would be inadequate and would not represent use of generally accepted professional standards for all best practical mitigation measures.

5. Discussion of Unreasonable Adverse Effect on Aesthetics

T.J. Boyle found impacts to this resource unreasonable because additional mitigation measures would help reduce adverse aesthetic impacts and because of the proximity of structures adjacent to the roadway. Ideally alternative structure designs in horizontal configurations would help reduce the height of the transmission lines and visual prominence. Relocating structures further from the edge of the roadway and river, utilizing non-specular conductors, and proposing vegetative mitigation at these crossing could also help reduce impacts.

Scenic Resource Name: Suncook Valley Highway (NH Route 28) / 105 North Pembroke Road**Potential Visual Impact:** High**Will the Project Result in Unreasonable Impacts:** Yes**Simulation:** DeWan & Associates Attachment 8: Private Property Photosimulations (Revised) page 8-76 to 8-78**Town:** Pembroke, New Hampshire**Field Documentation Notes from a Location Near the Simulation**Scenic Attractiveness: NoteworthyNumber of Visible Residences: 6Number of Visible Existing Transmission Structures: 1Scenery Interest: Moderate to High**1. Narrative**

The photosimulation is taken at the intersection of the Suncook Valley Highway (NH Route 28) and North Pembroke Road in Pembroke, NH. The AADT for Route 28 is 7,979 vehicles. The area is a mixture of open pasture and forested land with low density residential along the roads. The viewpoint is less than 1,000 feet from the Suncook River and Bear Brook State Park. The typical viewer would consider this area to possess a scenic quality that will be enjoyed by travelers. Going for a scenic drive is one of the most common forms of recreation in New Hampshire, therefore the Suncook Valley Highway is a scenic resource under Site 102.45(c) and (d).

The view is toward the Montminy Farm and Country Store, and is a scenic resource under Site 102.45(e). Preservation Company identifies as “National Register-eligible and potentially adversely affected by the Project.”¹⁶

The existing 115 kV transmission line uses delta-configured wooden poles that range from 66 to 88 feet in this area. These structures will be retained. The new 345 kV line uses weathered steel monopole structures that range in height from 110 to 130 feet high.

2. Site 301.05(b)(6) Criteria used to characterize potential visual impacts**a. Expectations of typical viewer**

The typical viewer will be a traveler on the Suncook Valley Highway—any of these will live in the area and be going about their daily business, some will be traveling through the area, and others will be out for a scenic drive. The area is typical of the rural New Hampshire countryside, and users will expect it to possess a scenic quality, which they will enjoy.

b. Effect on future use and enjoyment

The Project will decrease the existing scenic quality, and its industrial character will appear incongruous in the context of a traditional Northern New England rural landscape and the country store. The Project will have a negative effect on the enjoyment of viewers out for a scenic drive, as well as for people going about their daily business. Tourists and recreationist may well be less likely to choose this route for their

¹⁶ Preservation Company. 2015. Northern Pass Transmission Project Assessment of Historic Properties. See Pembroke Table of Historic Resources, and Historic Resource Assessment for property PEMB37.

enjoyment, though there may not be suitable alternatives for those who must use North Road as a route for transportation.

c. Extent of proposed facility, including all structure and disturbed areas, visible from the scenic resource

The increased height and industrial-appearing character of the new structures will make them more visible and intrusive than the much shorter wooden structures. Visibility of the existing structures effects a stretch of road approximately a third of a mile long; the new structures will be visible along a two-mile stretch.

d. The distance of the proposed facility from the scenic resource

DeWan & Associates identifies the distances between the viewpoint and the Project as 593 to 658 feet. However, a traveler going north on the Suncook Valley Highway passes under the overhead conductors and within 60 feet of a new 120-foot weathered steel structure, and 30 feet of an 88-foot wooden pole.

e. The horizontal breadth or visual arc of the visible elements of the proposed facility

The horizontal angle of view for the Project at this location will be 110°

f. The scale, elevation and nature of the proposed facility relative to surrounding topography and existing structures

The scale of the new structures is much greater than the existing landscape elements and its industrial-appearing character is not in keeping with the surrounding rural landscape.

g. The duration and direction of the typical view of elements of the proposed facility

The Project is visible to northbound travelers on the Suncook Valley Highway for a distance of approximately two-thirds of a mile, or for approximately a minute.

h. The presence of intervening topography between the scenic resource and elements of the proposed facility

The new structures are simply too tall to be screened by existing trees and buildings in the area of this viewpoint.

Potential Visual Impact Based on Analysis of Factors Under Site 301.05(b)(6)

In summary, as viewed from the Suncook Valley Highway (Route 28) at North Pembroke Road, the Project will introduce very large industrial-appearing structures that are out of scale and character with the surrounding rural landscape. We therefore would rate the potential visual impact as high.

3. Mitigation - Site 301.05(b)(10)

The NPT VIA does not discuss mitigation at this location.

4. Site 301.14(a) Criteria Relative to Findings of Unreasonable Adverse Effect on Aesthetics

(1) Existing character of the area of potential visual impact

The Suncook Valley Highway and surrounding area is typical of rural New Hampshire. The area is adjacent to the Suncook River and Bear Brook State Park. The viewpoint is looking toward a National Register-eligible historic site. The typical viewer would consider it to possess a scenic quality.

(2) The significance of affected scenic resources and their distance from the proposed facility

The Suncook Valley Highway is a scenic resource under Site 102.45(c) and (d). The simulated view is particularly sensitive because it is toward a historic site that is a scenic resource under Site 102.45(e).

(3) The extent, nature, and duration of public uses of affected scenic resources

Most travelers on the Suncook Valley Highway are expected to be using it primarily for utilitarian purposes, but are expected to also enjoy the scenery; for others the scenic drive will be their primary purpose. The duration of exposure may be a minute or longer, which is more than enough time to register the impact of the Project to the scenic quality.

(4) The scope and scale of the change in the landscape visible from affected scenic resources

The scale of the proposed weathered steel monopole structures overwhelms the small scale historic structures, and the much smaller wooden poles used for the existing 115 kV transmission line. The scope and scale of this change is high.

(5) The evaluation of the overall daytime and nighttime visual impacts of the facility as described in the visual impacts assessment and other relevant evidence

The above review of visual impacts per 301.05(b)(6) criteria found the Project to result in high visual impacts. The NPT VIA did not evaluate the visual impact from the Suncook Valley Highway (Route 28) at North Pembroke Road.

(6) The extent to which the proposed facility would be a dominant and prominent feature within a natural or cultural landscape of high scenic quality or as viewed from scenic resources of high value or sensitivity

The proposed facility will become the visually dominant and prominent feature from this location.

(7) The effectiveness of the measures proposed by the applicant to avoid, minimize, or mitigate unreasonable adverse effects on aesthetics, and the extent to which such measures represent best practical measures

No mitigation is proposed, other than the use of weathered steel monopole structures instead of galvanized lattice towers. This mitigation is not effective. The best practical measure is to bury the transmission line. If the decision is made to keep the Project overhead at this location, then the height of the structures must be lowered to match the existing 115 kV line, and non-specular conductors and insulators must be used. Wooden H-frame structures are one way to lower the height of the 345 kV structures, and must be considered.

5. Discussion of Unreasonable Adverse Effect on Aesthetics

T.J. Boyle considered impacts to this resource unreasonable because of the significant scale of proposed structures, which would be completely out of scale with the existing character of the area. Alternative structure configurations to significantly lower the Project height of the proposed 345 kV line must be considered. Additional mitigation measures that would also be considered best practical measures, include vegetation mitigation to help screen visibility from roadways and the use of non-specular conductors.

Scenic Resource Name: Presidential Range Trail Scenic Byway (US Route 302)**Potential Visual Impact:** High**Would the Project Result in Unreasonable Impacts:** Yes**Simulation:** T.J. Boyle NPT DOE VIA Simulations – BT-1 US Route 302 at Rocks Edge Road**Town:** Bethlehem, New Hampshire**Field Documentation Notes**Observation Notes: Tourism, CottagesScenic Attractiveness: NoteworthyNumber of Visible Residences: 10Number of Visible Existing Transmission Structures: 2Scenery Interest: Moderate**1. Narrative**

Presidential Range Trail Scenic Byway (US Route 302) is located on Route 302 at Rocks Edge Road in Bethlehem, NH. The viewpoint is located on both the Presidential Range Tour and River Heritage Tour, which are designated scenic resources under Site 102.45(a) (designated for scenic quality), Site 102.45(c) (scenic drives), and Site 102.45(d) (recreational areas established in whole or in part with public funds). It is also located near the shore of Baker Brook Pond, a public water that is a scenic resource (Site 102.45(c)).

The view is dominated by the highway, roadside trees and a small pond occupy the foreground, and forested hills are in the midground. The view does not extend to the background. Approximately 10 residences are visible from this location, and an existing abandoned building is visible behind the existing 57-foot wooden H-frame structure in the center of the view. At this location, the functional classification of Route 302 is a principal arterial road with an average annual daily trip (AADT) of 5,800 vehicles.

The existing PSNH transmission line makes a perpendicular crossing of the road a short distance ahead. There is also a distribution line within the PSNH right-of-way that runs parallel with the existing transmission line, and another distribution line that runs along the left side of the road.

The proposed Bethlehem transition station is visible just off the road, a 95-foot high galvanized tubular steel A-frame structure on the left side of the photosimulation; to the left and behind the viewer is a 105-foot monopole structure that is not visible in the photosimulation. This is not the most prominent view of the transition station, since the viewpoint was originally selected to represent an alternative alignment as part of the DOE DEIS. From the transition station, the NPT would be buried beneath US Route 302, heading west behind the viewer.

2. Site 301.05(b)(6) Criteria used to characterize potential visual impacts**a. Expectations of typical viewer**

US Route 302 is a major highway, which connects I-93 to Bethlehem, Mt. Washington, Crawford Notch and North Conway, and some viewers would be using it for utilitarian purposes, although probably most are tourist travelers. The road's alignment provides a very pleasing kinetic experience and the pond does provide some scenic character. However, the existing abandoned building and transmission line detract from this somewhat. The area is typical of the rural New Hampshire countryside, and users would expect it to possess a scenic quality.

b. Effect on future use and enjoyment

The Project would decrease the existing scenic quality, and its industrial character would appear incongruous next to the small lake and in the context of several residences. These structures would be visible to users anywhere on the lake. The New Hampshire Lakes Association's Survey, which is discussed in Section 4.2 of the T. J. Boyle Visual Impact Analysis Report, indicates typical viewers have a high expectation for scenery and that scenic degradation would have a negative effect on the future use and enjoyment.

The proposed structures also would be out of character with the existing conditions in views from Presidential Range and River Heritage Trails (US Route 302). The Project would have a negative effect on the enjoyment of viewers out for a scenic drive, as well as for people going about their daily business. Tourists and recreationist may well be less likely to choose this route for their enjoyment, though there may not be suitable alternatives to US Route 302 as a route for transportation.

c. Extent of proposed facility, including all structure and disturbed areas, visible from the scenic resource

The transition station and monopole structure are prominent from the scenic roads, and everywhere on the lake.

d. The distance of the proposed facility from the scenic resource

Distance to the nearest proposed structure is approximately 479 feet, but it is not in the photosimulation's field of view; the transition station is 710 feet from the viewer. The 105-foot monopole structure is set back approximately 125 feet from the road; the 95-foot transition station is less than 100 feet from the road and surrounded by an 8-foot fence that is 40 feet from the road.

e. The horizontal breadth or visual arc of the visible elements of the proposed facility

From the KOP BT-1 viewpoint, the horizontal arc is approximately 10° but this would change considerably as one moves forward between the monopole structure and transition station, or views these elements from the lake.

f. The scale, elevation and nature of the proposed facility relative to surrounding topography and existing structures

The Project would introduce very large industrial-appearing galvanized steel structures into a smaller scale landscape.

g. The duration and direction of the typical view of elements of the proposed facility

Users of the lake would be confronted with the Project structures for as long as they out—maybe hours. The view's duration for travelers on the scenic road may be half a minute.

h. The presence of intervening topography between the scenic resource and elements of the proposed facility

The structures are in the near-foreground, with little screening elements in their immediate area.

Potential Visual Impact Based on Analysis of Factors Under Site 301.05(b)(6)

In summary, at Presidential Range Trail and River Heritage Trail (US Route 302), the 95-foot high galvanized tubular steel A-frame transition station and 105-foot high galvanized steel monopole structure would be dominant visual features. We therefore would rate the potential visual impact as high.

3. Mitigation - Site 301.05(b)(10)

The NPT VIA states that unspecified “additional landscaping would be installed to screen the view from Route 302” (NPT VIA, p. 3-6). The Applicant must provide further information in order to evaluate whether it would be effective or not.

4. Site 301.14(a) Criteria Relative to Findings of Unreasonable Adverse Effect on Aesthetics

(1) Existing character of the area of potential visual impact

The view is dominated by the highway, roadside trees and a small pond in the foreground, and forested hills are in the middleground.

(2) The significance of affected scenic resources and their distance from the proposed facility

The scenic resources are the Presidential Range Trail and River Heritage Trail (US Route 302), and Baker Brook Pond, a public great pond.

(3) The extent, nature, and duration of public uses of affected scenic resources

Most travelers may use the scenic roads primarily for utilitarian purposes, but are expected to also enjoy the scenery; for others the scenic drive would be their primary purpose. The duration of exposure may be half a minute or longer, which is more than enough time to register the impact of the Project to the scenic quality.

Users of Baker Brook Pond would be boating, fishing, swimming or watching birds and other wildlife. When the lake freezes, there may also be winter activities such as ice skating, cross-country skiing, or snow shoeing. People, particularly residents, may also picnic or simply relax by the shore and enjoy the view. These activities typically have a longer duration, measured in hours. In most cases the same users would engage these activities repeated throughout the year.

(4) The scope and scale of the change in the landscape visible from affected scenic resources

T.J. Boyle considers the scope and scale of change as medium-high. Although the view includes an existing transmission line, the wooden H-frames are of a scale and material that better fits within this landscape context. The large scale and industrial character of the proposed structures, which are sited in a small, even small scaled landscape would result in significant negative changes. The new structures are highly visible from the scenic roads and lake, and are both dominant and prominent within the view.

(5) The evaluation of the overall daytime and nighttime visual impacts of the facility as described in the visual impacts assessment and other relevant evidence

The above review of visual impacts per 301.05(b)(6) criteria found the Project to result in high visual impacts. The NPT VIA found the visual impact from Presidential Range Trail Scenic Byway (US Route 302) to be medium.

(6) The extent to which the proposed facility would be a dominant and prominent feature within a natural or cultural landscape of high scenic quality or as viewed from scenic resources of high value or sensitivity

The proposed facility would be a visually dominant and prominent feature from this location.

(7) The effectiveness of the measures proposed by the applicant to avoid, minimize, or mitigate unreasonable adverse effects on aesthetics, and the extent to which such measures represent best practical measures

The NPT is buried south of this location, which is an effective mitigation. However, the transition station and monopole structure adjacent to the north side of U.S. Route 302 also require effective mitigation, which the Applicant has not presented. The best practical measure would relocate the transition station down the slope to the north of U.S. Route 302, which would significantly reduce the visual prominence of the Project.

5. Discussion of Unreasonable Adverse Effect on Aesthetics

T.J. Boyle considers impact at this location unreasonably adverse as a result of the proximity of the transition station to a scenic highway and lake. There is substantial benefit from undergrounding the proposed line as it continues south from this location. Relocating the transition station further north and away from the roadway would substantially reduce impacts. The efficacy of proposed landscape mitigation cannot be evaluated without detailed planting plans, though vegetation mitigation is warranted to screen the corridor from this resource.

Scenic Resource Name: Presidential Range Trail Scenic Byway (Route 116)**Potential Visual Impact:** High**Would the Project Result in Unreasonable Impacts:** Yes**Simulation:** T.J. Boyle NPT DOE VIA Simulations – BT-6 Route 116/Presidential Range Trail**Town:** Bethlehem, New Hampshire**Field Documentation Notes**Observation Notes: View of nearby biomass plant and plume. Adjacent Ammonoosuc River.Scenic Attractiveness: NoteworthyNumber of Visible Residences: 0Number of Visible Existing Transmission Structures: 28Scenery Interest: Moderate to High**1. Narrative**

Presidential Range Trail Scenic Byway (Route 116) is in Bethlehem, NH, and is also referred to as the Presidential Range Tour¹⁷. This Byway is part of New Hampshire's Scenic and Cultural Byways, and traverses approximately 115 miles of landscape through the state's White Mountains and Great North Woods regions. In the vicinity of the crossing, Route 116 runs roughly northwest-southeast, and passes approximately 185 feet northeast of where the NPT crosses the Ammonoosuc River, a designated river in the NH Rivers Management and Protection Program.¹⁸ Although the map appears not to include Route 116 in this area, according to the New Hampshire DOT Scenic and Cultural Byways website, "This 115 mile trail begins in Littleton and follows NH 116 north to Whitefield."¹⁹ The Woodland Heritage Scenic Byway is accessible year-round, and in the area where the proposed corridor is visible the landscape is characterized by the rolling forested hillsides and mountains to the southeast and the adjacent Ammonoosuc River. The river has a long history as a fishing and camping route for the Abenaki Indians, and therefore has cultural significance. Additionally, "the entire Ammonoosuc River offers a spectacular and varied scenic and cultural vista, which makes it highly valued by the surrounding communities, making local planning and protection efforts a priority." The proposed HVDC structures and limited new right-of-way clearing would be visible from the road and river crossing. The AADT for this portion of Route 116 is 4000. The T. J. Boyle viewpoint location is within the corridor crossing over Route 116 at this location. The Presidential Range Trail Scenic Byway and Ammonoosuc River are significant state resources that are visited throughout the year, and therefore have special scenic concern.

2. Site 301.05(b)(6) Criteria used to characterize potential visual impacts**a. Expectations of typical viewer**

The typical viewer along Route 116 is a motorist traveling by vehicle or motorcycle, and this can include tour buses. Motorists utilize the road for various reasons, including specifically appreciating scenery along the road as well as simply utilizing the road to travel from one location to another. Views from this portion of the road include low-density residential and commercial uses as well as the background forested hills, mountains and the river valley itself. Because this road is part of a designated scenic byway and adjacent to a designated river, and there are nearby residential and commercial uses as well as the existing corridor and associated transmission structures, the expectations for the typical viewer at this location are

¹⁷ <https://www.nh.gov/dot/programs/scbp/tours/president.htm>

¹⁸ <http://www.des.nh.gov/organization/commissioner/pip/factsheets/rl/documents/rl-20.pdf>

¹⁹ <https://www.nh.gov/dot/programs/scbp/tours/documents/president.pdf>

considered medium. Users of the river are interested in outdoor recreation activities such as canoeing, kayaking and fishing.²⁰

b. Effect on future use and enjoyment

The Project would introduce a new transmission line and large weathering steel monopole and galvanized steel lattice structures in an area that currently only contains a single transmission line that uses shorter wooden H-frame structures. A distribution line is also located within the corridor through this area. The use of taller steel structures would be out of character with the existing conditions. Although this portion of the river valley is mostly forested with scattered development and the existing corridor clearing, the forested hillsides in the middleground and background appear mostly intact, and any forest management is not readily recognizable. Because the proposed transmission infrastructure crosses the road, including locating a structure approximately 75 feet from the road and another structure approximately 85 feet from the river, the Project would have a negative effect on the future use and enjoyment of this roadway and river.

c. Extent of proposed facility, including all structure and disturbed areas, visible from the scenic resource

The T. J. Boyle Route 116/Presidential Range Trail simulation (Viewpoint BT-6) illustrates the new electrical transmission structures that would be visible approaching the north side of Route 116. Not pictured is the weathering steel monopole structure that would be to the left of the view, approximately 75 feet from the road. The Terrain Viewshed indicates there would be visibility from almost all of the roadway through this area of Bethlehem without the benefit of the surrounding forest screening. The Vegetated Viewshed indicates intermittent visibility through this area where vegetation is cleared along the roadway.

d. The distance of the proposed facility from the scenic resource

Distance to the nearest proposed structure is approximately 75 feet (not visible in simulation), and distance to the nearest existing 115 kV structure is 101 feet (visible at far right of simulation). The Project would cross immediately over the road, and other visibility is expected from further northwest and southeast. The Project would also cross immediately over the river.

e. The horizontal breadth or visual arc of the visible elements of the proposed facility

The visual arc or visual angle is approximately 18 degrees of the view illustrated in the T. J. Boyle simulation, and would actually be larger as the line extends to the left of the image and across the road to the southwest.

f. The scale, elevation and nature of the proposed facility relative to surrounding topography and existing structures

The visible structures would be located adjacent to the roadway when viewing from the road, as well as in the middleground to the southwest as the corridor crosses the river, and in the middleground to the northeast. The height of the existing structures (43' to 56.5') relative to the proposed structures (70 to 95') would be out of character with the existing conditions through the area where the transmission corridor is visible. The simulation indicates that for most of the visible structures visible from the roadway, the entire structure would be visible when viewed from the crossing (rather than only a portion). The structure that is closer to the roadway that is not visible in the simulation would also be entirely visible from the roadway. Almost all of the structures visible from the roadway are skylined above the top of the

²⁰ <http://www.des.nh.gov/organization/commissioner/pip/factsheets/rl/documents/rl-20.pdf>

surrounding forest canopy. Additionally, two types of structures are visible from this location, including weathering steel monopole structures and galvanized steel lattice structures. The siting of the new corridor and structures in close proximity to the road make visibility of the proposed structures prominent, and contrast of the structure and conductors with the vegetated backdrop and skyline would be high, but would likely vary based on seasonal and weather conditions.

g. The duration and direction of the typical view of elements of the proposed facility

Visibility of the Project would be to the southwest and northeast from the portion of the road and river that have visibility of the transmission line as it traverses this area. Because varying forms of transportation may be used (e.g. watercraft, walking, running, biking, driving and/or motorcycling), duration of views would vary, but would be possible while traveling through cleared areas where views of the surrounding landscape is expected. In particular, the proposed structure just north of the road would be visible at a distance in either direction due to the proximity of the structure to the road and the curved alignment of the road as it passes the structure.

h. The presence of intervening topography between the scenic resource and elements of the proposed facility

Landform is expected to screen additional structures to the northeast beyond the angle in the ROW, as well as structures that are further southwest that are beyond a rise of land. The surrounding forest would help to screen additional structures and views of the cleared ROW from areas further afield. The areas of visibility and associated structures described above are based on screened views, including the effect of surrounding vegetation. Overall, the lack of existing vegetation near the crossing and proximity of proposed structures to the road would elevate the appearance of the Project.

Potential Visual Impact Based on Analysis of Factors Under Site 301.05(b)(6)

In summary, at Route 116 and the Ammonoosuc River we determined that there is a medium expectation for scenery. The Project would introduce structures with an industrial character into parts of a landscape that are primarily natural and agricultural, only lightly developed, and with shorter existing wooden H-frame structures. Because of the proposed structure heights and variation of materials, as well as the proximity to the road and somewhat exposed nature of the Project as it proceeds southeast over the river, the structures would be relatively prominent and potentially result in a high level of contrast with the existing field and forested hillside, depending on seasonal and weather conditions. There would be a negative degradation to the scenic quality of the landscape, which would result in a negative effect to the future use and enjoyment for users of Route 116 and the Ammonoosuc River. We therefore would rate the potential visual impact as high.

3. Mitigation - Site 301.05(b)(10)

The NPT VIA does not specifically cite mitigation as being for Route 116. The NPT VIA cites mitigation for the Ammonoosuc River as follows:

- Using weathering steel transmission structures (from DC-661 south to DC-667) to reduce potential contrasts in color and form. These include all the structures visible within the foreground (within 0.5 mile) of the southwesterly view over the Ammonoosuc River from Route 116.
- With landowner permission, maintaining existing riparian vegetation where possible and restoring vegetation along the river that may be disturbed by the installation of the new transmission structure. The 2013 Corridor Management Plan calls for vegetated buffers to be restored between trails and the river. (NPT VIA, p. 2-61)

4. Site 301.14(a) Criteria Relative to Findings of Unreasonable Adverse Effect on Aesthetics

(1) Existing character of the area of potential visual impact

This portion of Route 116 and the nearby Ammonoosuc River are in the White Mountains region of New Hampshire and have scattered development along the roadside and river. The surrounding landscape is generally characterized by forested hills and background mountains, including the White Mountain National Forest to the southeast. During field investigation that T.J. Boyle performed as part of the DOE VIA, we gave a rating of Noteworthy to the Scenic Attractiveness at the simulation location.

(2) The significance of affected scenic resources and their distance from the proposed facility

Route 116 is a designated scenic Byway, which is a scenic resource with state designation and is supported with public funds. The visible portions of the Project are immediately adjacent to the road at the crossing, and visibility is expected from locations along nearby portions of the road due. Similarly, the Ammonoosuc River is a scenic resource with state designation.

(3) The extent, nature, and duration of public uses of affected scenic resources

Public uses along Route 116 include walking, biking, and driving/motorcycling, and potentially include bus tours and other similar recreational uses. Travel on the river is typically by watercraft such as canoe or kayak, and uses may include swimming or fishing. The duration of use of the scenic resource would vary based on mode of travel, but would likely range from several seconds along the road to several minutes along the river.

(4) The scope and scale of the change in the landscape visible from affected scenic resources

The scope and scale of change is considered high. Although existing views include the existing transmission facilities, the number, variable design and character of proposed structures, and the proximity and extent of visibility would result in a significant change to the existing landscape, especially for regular users of the road and river. Changes to the landscape would be prominent and in contrast to the existing character of the area.

(5) The evaluation of the overall daytime and nighttime visual impacts of the facility as described in the visual impacts assessment and other relevant evidence

This review of visual impacts per 301.05(b)(6) criteria found the Project to result in high visual impacts. The NPT VIA found the visual impact to the Ammonoosuc River to be low-medium, but did not rate the visual impact to Route 116.

(6) The extent to which the proposed facility would be a dominant and prominent feature within a natural or cultural landscape of high scenic quality or as viewed from scenic resources of high value or sensitivity

The Project would result in new and much larger electrical transmission structures being visible from the simulation location as well as from the river. Additional structures would potentially be visible from other locations further northwest and southeast along Route 116. These structures would be visible as drivers approach the road crossing due to the nature of the bend in the road. The Project inevitably would be noticeable in the vicinity of the corridor crossing over the road and river, and would be considered a prominent feature within the visual landscape. At the road crossing, the proposed adjacent weathering steel structure northeast of the road would be dominant and prominent, and this combined with the variation in structure types further north would contrast from the existing conditions. At the river crossing, the proposed adjacent weathering steel structure southwest of the river would be dominant and prominent, and due to the number and nature of new structures would contrast from the existing conditions.

(7) The effectiveness of the measures proposed by the applicant to avoid, minimize, or mitigate unreasonable adverse effects on aesthetics, and the extent to which such measures represent best practical measures

NPT has not specifically proposed mitigation for the road crossing, although general statements about mitigation in the Subarea 2 Impact summary (NPT VIA, p. 2-5) note that an existing transmission corridor is used, and redesigning and relocating existing 115 kV structures to accommodate the NPT project and minimize ROW clearing. Other mitigation measures are described in this section of the NPT VIA for other locations that do not include the river or Route 116. Additionally, NPT has proposed mitigation for the river crossing as described above. However, it is our contention that for these particular resources not all of the proposed measures are accurate or adequate.

In particular, no information has been provided about whether maintaining riparian vegetation within the corridor would mitigate views from the river. Additionally, although structures from DC-661 to DC-667 are proposed as weathering steel, other structures northeast of the road crossing are proposed as galvanized steel lattice, causing variability of structure types visible within the corridor.

Where the corridor crosses the road, an 85-foot tall weathering steel HVDC monopole structure is proposed 75 feet from the edge of the road in a location that is prominent and visible for travelers in both directions. These and other structures to the southwest and northeast would be clearly visible, and would result in contrast of the structures, structure types and untreated conductors with the background forest and skyline. Other forms of mitigation which would be considered best practical measures at this location, include setting proposed structures significantly back from the roadway and river. From Route 116 and the Ammonoosuc River, mitigation as proposed by NPT would be inadequate and would not represent use of all best practical mitigation measures.

5. Discussion of Unreasonable Adverse Effect on Aesthetics

T.J. Boyle found impacts to these resources unreasonable because additional mitigation measures would help reduce adverse aesthetic impacts and because of the proximity of the proposed HVDC structure to the edge of the scenic Byway (structure just outside of the view in the simulation). The variation of visible HVDC structures also contributes to discontinuity of structure type and materials within the corridor. Relocating the HVDC structure further from the edge of the roadway and river, changing all visible HVDC structures to monopoles and including specific vegetative mitigation would help reduce impacts to both resources.

Scenic Resource Name: Boyce Road**Potential Visual Impact:** High**Would the Project Result in Unreasonable Impacts:** Yes**Simulation:** T.J. Boyle NPT DOE VIA Simulations – CB-1 Boyce Road Looking North / CB-2 Boyce Road Looking South**Town:** Canterbury, New Hampshire**Field Documentation Notes**Scenic Attractiveness: OrdinaryNumber of Visible Residences: 4Number of Visible Existing Transmission Structures: 17Scenery Interest: Moderate**1. Narrative**

Boyce Road is in Canterbury, NH, and runs roughly east-west in the vicinity of the Project. This road is within the Merrimack Valley region. The road is accessible year-round, and provides access to residential uses on either side of the road. In the area where the proposed Project is visible, the landscape is characterized by forested roadsides, residential homes, small farms, and the existing transmission corridor crossing. The Canterbury Shaker Village Byway²¹ is approximately 1,250 feet to the east of the road crossing. This location is a roadway with a scenic quality that is supported with public funds (Site 102.45(c) and (d)). The proposed 345 kV structures, relocated 115 kV structures and new right-of-way clearing would be visible from the road as it crosses the corridor. There is no AADT information collected for Boyce Road. The T. J. Boyle viewpoint location is within the corridor crossing. Boyce Road is representative of many roads that are crossed by the NPT that are within an area that possess a scenic quality, include nearby residential uses, and is supported by public funds.

2. Site 301.05(b)(6) Criteria used to characterize potential visual impacts**a. Expectations of typical viewer**

The typical viewer along Boyce Road is a motorist traveling by vehicle or motorcycle, a pedestrian or a bicyclist. Travelers utilize the road for various reasons, including specifically appreciating scenery along the road as well as simply utilizing the road to travel from one location to another, including accessing Canterbury Shaker Village from points south. Views from this portion of the road include low-density residential and limited agricultural uses. Because this road is not part of a designated scenic byway and is adjacent to residential uses and the existing transmission corridor, the expectations for the typical viewer at this location are considered medium.

b. Effect on future use and enjoyment

The Project would introduce a new 345 kV transmission line with large structures into the corridor (simulation at center), as well as relocate and replace an existing 115 kV with larger structures within the corridor (simulation at left). The proposed structures would be weathering steel and the new 115 kV structure materials and configuration would not match an existing wooden delta-configuration 115 kV transmission line that would remain (simulation at right). The larger structures with different materials and configuration would be out of character with the existing conditions. Because the proposed transmission

²¹ <https://www.nh.gov/dot/programs/scbp/tours/documents/canterbury.pdf>

infrastructure crosses the road, including locating an 85' tall 345 kV structure 42' from the road, the Project would have a negative effect on the future use and enjoyment of this roadway.

c. Extent of proposed facility, including all structure and disturbed areas, visible from the scenic resource

The T. J. Boyle simulation illustrates new electrical transmission infrastructure that would be visible in close proximity to a road and within the context of nearby residences. The Terrain Viewshed indicates there would be visibility from all of the roadway through this area of Canterbury without the benefit of the surrounding forest screening. The Vegetated Viewshed indicates intermittent visibility through this area where vegetation is cleared along the roadway, in particular near the corridor.

d. The distance of the proposed facility from the scenic resource

Distance to the nearest proposed 345 kV structure is approximately 42' (looking north) and 325' (looking south). Distance to the nearest proposed 115 kV structure is approximately 35' (looking north) and 325' (looking south).

e. The horizontal breadth or visual arc of the visible elements of the proposed facility

The visual arc or visual angle is approximately 18.5 degrees of the view illustrated in the T. J. Boyle simulation, but may be considered larger as the line crosses the road and proceeds south.

f. The scale, elevation and nature of the proposed facility relative to surrounding topography and existing structures

The visible structures would be located adjacent to the roadway or along the length of the corridor when viewing from the road. Structures would be visible in both directions along the corridor, including approximately 13 new weathering steel structures to the north, and 10 new weathering steel structures to the south. The proposed structures in this area range from 70' to 110' in height, and would not match the materials or configuration of the existing structures in the corridor. The simulation indicates that several entire structures would be visible from the roadway. All of the structures visible from this area would be skylined above the top of the surrounding and background forest canopy. The structures closest to the road would be prominent, and would contrast with the skyline.

g. The duration and direction of the typical view of elements of the proposed facility

Visibility of the Project and proposed vegetative clearing would be to the north and south from the portion of the road that has visibility of the crossing. Because varying forms of transportation may be used (e.g. walking, running, biking, driving and/or motorcycling), duration of views would vary, but would typically be several seconds each time travelers pass under the crossing.

h. The presence of intervening topography between the scenic resource and elements of the proposed facility

Landform is expected to screen additional structures to the north and south beyond rises of land in each direction. The surrounding forest would help to screen structures and views of the cleared ROW from other locations along the road. The areas of visibility and associated structures described above are based on screened views, including the effect of surrounding vegetation. Overall, proximity of structures to the road and proposed structure heights would elevate the appearance of the Project.

Potential Visual Impact Based on Analysis of Factors Under Site 301.05(b)(6)

In summary, at Boyce Road we determined that there is a medium expectation for scenery. The Project would introduce an element with industrial character into parts of a landscape that are residential in nature,

and where the existing corridor does not currently include structures of the material, height, number and configuration that would result from the proposed Project. Because of the proximity to the road and design of the structures, the proposed structures would be prominent and potentially result in a high level of contrast with the existing conditions in the corridor and area. There would be a negative degradation to the scenic quality of the landscape, which would result in a negative effect to the future use and enjoyment of users of Boyce Road. We therefore would rate the potential visual impact as high.

3. Mitigation - Site 301.05(b)(10)

The NPT VIA does not specifically cite mitigation for the area around Boyce Road, though general statements about mitigation in the Subarea 5 Impact summary (NPT VIA, p. 5-3) note that the proposed transmission line follows an existing transmission corridor, the existing 115 kV transmission line has been redesigned and relocated to accommodate the NPT project and minimize clearing and eliminate acquiring additional ROW, and the use of shorter weathering steel H-frame structures rather than galvanized steel lattice structures.

4. Site 301.14(a) Criteria Relative to Findings of Unreasonable Adverse Effect on Aesthetics

(1) Existing character of the area of potential visual impact

Boyce Road is in the Merrimack Valley region of New Hampshire and accesses residential and limited agricultural uses along the roadside. The surrounding landscape is generally characterized by forest and residential uses with occasional minor agricultural fields. Interstate 93 is located approximately 2,000' to the southwest, and the Canterbury Shaker Village Byway is located approximately 1,250' to the northeast. During field investigation that T.J. Boyle performed as part of the DOE VIA, we gave a rating of Ordinary to the Scenic Attractiveness at the simulation location.

(2) The significance of affected scenic resources and their distance from the proposed facility

The area services residential uses and is near the Canterbury Shaker Village Byway. This location is a roadway with a scenic quality that is supported with public funds (Site 102.45(c) and (d)). The visible portions of the Project are immediately adjacent to the road at the crossing, and are visible along the corridor to the north and south.

(3) The extent, nature, and duration of public uses of affected scenic resources

Public uses along Boyce Road include walking, biking, and driving/motorcycling. The duration of use of the scenic resource would vary based on mode of travel, but would typically be a several seconds. Due to the residential nature of the area, views of the corridor would be a regular occurrence for those who live in the area.

(4) The scope and scale of the change in the landscape visible from affected scenic resources

The scope and scale of change is considered medium-high. Although existing views include transmission structures in the existing corridor, the different design, height and character of proposed structures and the proximity to the road would result in a significant change to the existing landscape, especially for regular users of the road. Changes to the landscape would be prominent and in contrast to the existing character of the view.

(5) The evaluation of the overall daytime and nighttime visual impacts of the facility as described in the visual impacts assessment and other relevant evidence

The above review of visual impacts per 301.05(b)(6) criteria finds the Project to result in high visual impacts. The NPT VIA did not assess this resource.

(6) The extent to which the proposed facility would be a dominant and prominent feature within a natural or cultural landscape of high scenic quality or as viewed from scenic resources of high value or sensitivity

The Project would result in new and taller electrical transmission structures being visible from the simulation location. These structures would be visible at or near the road crossing. As a result, the Project inevitably would be noticeable in the vicinity of the corridor crossing, and would be considered a prominent feature within the visual landscape. The proposed size, material, and number of new structures would be dominant and prominent within the view, and would contrast from the existing conditions.

(7) The effectiveness of the measures proposed by the applicant to avoid, minimize, or mitigate unreasonable adverse effects on aesthetics, and the extent to which such measures represent best practical measures

NPT has not specifically proposed mitigation, although general statements about mitigation in the Subarea 5 Impact summary (NPT VIA, p. 5-3) are noted above.

For this particular resource, not all of these general measures are accurate or adequate. For instance, although the Applicant is using the existing corridor and proposes to redesign the existing 115 kV transmission line to accommodate the NPT project, the result are much taller structures of a different material than currently exists in the corridor. The relocated 115 kV structures do not match the height, material, configuration or character of the existing 115 kV structures. While the weathering steel H-frame structures are shorter than galvanized steel lattice structures, they would still be very tall structures within the ROW, would be skylined, and the new structures are planned in close proximity to the road.

At the corridor crossing, a 106' tall 115 kV structure is proposed 35' from the road, and would not be screened by existing or proposed vegetation. An 85' tall 345 kV structure is proposed 42' from the road. The number and scale of structures visible from the road would significantly increase, and would not match the existing character of the corridor. Other forms of mitigation that would be considered best practical measures at this location, include utilizing alternative structure types and configuration for the relocated 115 kV structures to reduce height, and using non-specular conductors (discussed in Section 4.4 of the T. J. Boyle Visual Impact Analysis Report), setting proposed structures significantly back from the roadway, and incorporating vegetative mitigation. From Boyce Road, mitigation as proposed by NPT would be inadequate and would not represent use of all best practical mitigation measures.

5. Discussion of Unreasonable Adverse Effect on Aesthetics

T.J. Boyle found impacts to this resource unreasonable because additional mitigation measures would help reduce adverse aesthetic impacts and because of the proximity of the proposed new structures to edge of the roadway. Relocating new structures further from the edge of the roadway, reconfiguring the relocated 115kV structures in a delta configuration and wood material to match the existing 115kV structures to remain, utilizing non-specular conductors and including vegetative mitigation would reduce impacts and be considered best practical measures. It should be noted that the horizontal configuration of the proposed 345 kV structures does help to limit impacts at this location.

Scenic Resource Name: Loudon Road**Potential Visual Impact:** High**Will the Project Result in Unreasonable Impacts:** Yes**Simulation:** T.J. Boyle NPT DOE VIA Simulations – CO-1 Loudon Road / NH Route 9**Town:** Concord, New Hampshire**Field Documentation Notes****Observation Notes:** Cars. Shopping mall. Commuters.**Scenic Attractiveness:** Indistinctive**Number of Visible Residences:** 4**Number of Visible Existing Transmission Structures:** 6**Scenery Interest:** Low to Moderate**1. Narrative**

Loudon Road is a major artery in Concord, NH with an AADT of 11,000 vehicles. The view in simulation CO-1 is similar to what a traveler or pedestrian would see stopped at the traffic light, looking southwest toward Steeplegate Mall. This area, including the Project is located in the Gateway Performance District, which the City of Concord Code of Ordinances, Article 28-2 describes as: “the uses developed within this District are expected to adhere to high standards for appearance in order to ensure that the gateways to the City are attractive and functional.” At other gateway locations, Concord has invested public funds to bury existing overhead power lines, demonstrating a public concern for their adverse effect on aesthetics and a willingness to make improvements. The Gateway Performance District is a scenic resource under Site 102.45(a) because it is “designated pursuant to applicable statutory authority by national, state, or municipal authorities for their scenic quality.”

The area includes a large number of multi- and single family residences. Preservation Company identified several that potentially were eligible for listing on the National Register of Historic Places (e.g., CONC86 and CONC87), but most were not evaluated because the NPT VIA screened visibility analysis indicated there was no visibility—section 3.3 of this Review discusses the limitations of the visibility analysis. There are several large commercial developments in the area, including Steeplegate Mall. To the north is a large forested area.

The existing ROW is approximately 205 feet wide. There are two existing 115 kV transmission lines and one distribution line in the corridor. The existing 115 kV structures are wooden H-frame and single poles ranging in height from 43 to 84 feet; the distribution poles are generally 43 feet high. The new 345 kV and relocated 115 kV structures includes steel three-pole and monopoles that range in height from 70 to 125 feet high. The diversity of structure types and range in heights increases the visual confusion.

2. Site 301.05(b)(6) Criteria used to characterize potential visual impacts**a. Expectations of typical viewer**

Loudon Road is one of the major routes crossing the Merrimack River into Concord from the east. It could also be used to approach the Concord Municipal Airport. Most travelers will use it for utilitarian purposes. However, all users experience the visual quality of their surroundings and by designating the area a Gateway Performance District, Concord has indicated that the planned character for this location includes high scenic quality.

b. Effect on future use and enjoyment

The Project introduces several types of very large transmission structures into a utility corridor that already appears over congested. The Project will have a negative effect on future use and enjoyment at this location, for which Concord has designated for visual improvement.

c. Extent of proposed facility, including all structure and disturbed areas, visible from the scenic resource

The Project will be widely visible up and down Loudon Road, as well as from the many surrounding residences, open areas, and from the surrounding the commercial development.

d. The distance of the proposed facility from the scenic resource

Distance to the nearest proposed structure is approximately 749 feet, but just to the right of the simulated view is a new 125-foot 354 kV monopole structure is 306 feet from the viewer, and a 106-foot replacement 115 kV vertically configured steel pole is 360 feet from the viewer.

e. The horizontal breadth or visual arc of the visible elements of the proposed facility

A traveler stopped at the traffic light would see the Project extending across a horizontal visual arc of approximately 60°. However, the breadth of the Project or visual area will vary dependent on viewer location and at certain locations the visual arc will be more than 180°.

f. The scale, elevation and nature of the proposed facility relative to surrounding topography and existing structures

The existing transmission structures have a significant visual presence in the view. However, the proposed new and replacement structures are even taller making the corridor even more prominent and dominant in a view that Concord has designated as a Gateway, and is regulating to improve its aesthetic appearance.

g. The duration and direction of the typical view of elements of the proposed facility

KOP CO-1 is the view from a traffic light, so travelers and pedestrians could be stopped there waiting for one or two minutes; this is the view of westbound travelers. Viewer use in this overall area will vary will some uses resulting in extended duration of several minutes to hours.

h. The presence of intervening topography between the scenic resource and elements of the proposed facility

There is an unobstructed view of a significant portion of the Project, and addition structures are visible over the tops of buildings.

Potential Visual Impact Based on Analysis of Factors Under Site 301.05(b)(6)

In summary, Loudon Road has been designated part of the Gateway Performance District, and Concord has implemented regulations to improve its aesthetic appeal. The Project is highly visible to a large number of people on Loudon Road, living in the area and shopping at the retail businesses. The Project will further add to an industrial character, and emphasize the presence of transmission infrastructure to this area, which will be in direct opposition to the planned character for this location. We therefore rate the potential visual impact as high.

3. Mitigation - Site 301.05(b)(10)

The NPT VIA does not discuss mitigation at Loudon Road. However, for what the NPT VIA refers to a subarea 5, they note mitigation that would be applicable to this location, which includes use of an existing transmission corridor and use of weathering steel structures, in replacement of lattice towers

4. Site 301.14(a) Criteria Relative to Findings of Unreasonable Adverse Effect on Aesthetics

(1) Existing character of the area of potential visual impact

The area has an urban character that includes single and multi-family residences, shopping areas, and major roads. However, Concord has very specifically designated the area as a Gateway Performance District that is being regulated to improve its aesthetic appeal. “(U)ses developed within this District are expected to adhere to high standards for appearance in order to ensure that the gateways to the City are attractive and functional.”

(2) The significance of affected scenic resources and their distance from the proposed facility

Concord has identified the area as significant because it is a major gateway into the city. As such, they have passed regulations to improve its aesthetic appeal.

The nearest structure in the KOP CO-1 photosimulation is 749 feet from the viewer, but just to the right of the simulated view is a new 125-foot 354 kV monopole structure is 306 feet from the viewer, and a 106-foot replacement 115 kV vertically configured steel pole is 360 feet from the viewer. Loudon Road passes under the Project, and the nearest structure is a 125-foot steel monopole that is 30 feet from the road’s edge.

(3) The extent, nature, and duration of public uses of affected scenic resources

Loudon Road is a gateway into Concord and the city is attempting to improve the area’s aesthetic appeal. The annual average daily traffic is 11,000 vehicles. Many of these vehicles will be stopped at the traffic light looking at the view shown in KOP CO-1 for a minute or more. In addition, thousands of people in the surrounding residences and shopping areas will be exposed to the Project daily.

(4) The scope and scale of the change in the landscape visible from affected scenic resources

At Loudon Road, although existing views include other surrounding electrical distribution and transmission lines, the particular siting of the new NPT corridor, design and character of proposed structures, and extent of visibility will result in a significant change to the existing visual landscape. Changes to the landscape are both dominant and prominent.

(5) The evaluation of the overall daytime and nighttime visual impacts of the facility as described in the visual impacts assessment and other relevant evidence

The above review of visual impacts per 301.05(b)(6) criteria found the Project to result in high visual impacts. The NPT VIA did not evaluate visual impacts from Loudon Road.

(6) The extent to which the proposed facility would be a dominant and prominent feature within a natural or cultural landscape of high scenic quality or as viewed from scenic resources of high value or sensitivity

The Project introduces new, very large steel structures that will be visually dominant and prominent from Loudon Road and the surrounding area.

(7) The effectiveness of the measures proposed by the applicant to avoid, minimize, or mitigate unreasonable adverse effects on aesthetics, and the extent to which such measures represent best practical measures

Mitigation measures do provide some benefit. Single pole weathering steel structures will appear more organized and less industrial than galvanized lattice tower. However, the configuration of several transmission and distribution lines in the existing corridor is visually complex. The Project introduces new,

very large structures into this already congested setting. Given the particular attention given to this location in Concord planning documents and the specific 'gateway' designation, burial would be the best practical measure at this location. If the Project were to remain as an overhead project at this location, other mitigation that could be considered best practical measures would include burial of other transmission and distribution lines to reduce the overall presence of transmission infrastructure, lower structure heights, non-specular conductors, and a robust vegetative mitigation plan.

5. Discussion of Unreasonable Adverse Effect on Aesthetics

The Project is located in the Gateway Performance District, which includes the following description in the City of Concord Code of Ordinances, Article 28-2: "the uses developed within this District are expected to adhere to high standards for appearance in order to ensure that the gateways to the City are attractive and functional." In other words, Concord has very high expectations for improved scenic quality at this location. The Project is proposing an additional 345 kV transmission line, with structures that will be 125 feet tall, or 40 to 50 feet taller than the highest existing structure in this area. The Project will increase the prominence and dominance of electrical transmission infrastructure at Loudon Road. While there is a significant presence of existing electrical transmission infrastructure, given the planned character for the area, additional infrastructure with such significant increases in heights is considered unreasonable. To simply add any more above ground electrical transmission infrastructure at this location would be in contrast to the stated goals and desires of the city of Concord. The Project would not adhere to this standard and therefore would be considered unreasonable. The industrial character, prominence and proximity of the proposed structures to this resource cannot be mitigated without significant measures, such as undergrounding or rerouting at this area.

Scenic Resource Name: Pembroke Road**Potential Visual Impact:** High**Will the Project Result in Unreasonable Impacts:** Yes**Simulation:** T.J. Boyle NPT DOE VIA Simulations – CO-2 Pembroke Road**Town:** Concord, New Hampshire**Field Documentation Notes**Observation Notes: (No Notes Recorded)Scenic Attractiveness: OrdinaryNumber of Visible Residences: 7Number of Visible Existing Transmission Structures: 2 (19 at corridor crossing)Scenery Interest: Low**1. Narrative**

Pembroke Road is in Concord, NH, and runs roughly east-west in the vicinity of the Project. This road is within the Merrimack Valley region. The road is accessible year-round, and provides access to residential uses on either side of the road, as well as commercial, light industrial, government and institutional uses. In the area where the proposed Project is visible, the landscape is characterized by lightly forested roadsides, residential homes, other nearby buildings associated with the nearby commercial and light industrial uses, as well as the existing transmission corridor crossing. This location is a roadway with a scenic quality that is supported with public funds (Site 102.45(c) and (d)). The proposed 345 kV structures, relocated 115 kV structures (two separate circuits on either side of the 345 kV line) and new right-of-way clearing would be visible from the road as it is crossed by the corridor. The AADT for this portion of Pembroke Road is 5954. The T. J. Boyle viewpoint location is approximately 260' from the corridor crossing. Boyce Road is representative of many roads that are crossed by the NPT that are within an area that possess a scenic quality, include nearby residential, commercial, government and institutional uses, and is supported by public funds.

2. Site 301.05(b)(6) Criteria used to characterize potential visual impacts**a. Expectations of typical viewer**

The typical viewer along Pembroke Road is a motorist traveling by vehicle or motorcycle, a pedestrian or a bicyclist. Travelers utilize the road for various reasons, but would typically be utilizing the road to travel from one location to another, such as commuter use into and out of this area of Concord. Views from this portion of the road include residential, commercial, government and institutional buildings and properties. Because this road is not part of a designated scenic byway and is adjacent to these uses and the presence of the existing transmission corridor, the expectations for the typical viewer at this location are considered low-medium.

b. Effect on future use and enjoyment

The Project would introduce a new 345 kV transmission line with large structures into the corridor, as well as relocate and replace two existing 115 kV lines with larger structures within the corridor. The proposed structures would be weathering steel and the new 115 kV structure materials and configuration would not match the materials or configuration of the existing 115 kV transmission lines that would be replaced. The larger structures with different materials and configuration would be out of character with the existing conditions. Because the proposed transmission infrastructure crosses the road, including locating an 85' tall 345 kV structure 90' from the road, one 110' tall 115 kV structure 80' from the road,

and another 110' tall 115 kV structure 120' from the road, the Project would have a negative effect on the future use and enjoyment of this roadway.

c. Extent of proposed facility, including all structure and disturbed areas, visible from the scenic resource

The T. J. Boyle simulation illustrates new electrical transmission infrastructure that would be visible in close proximity to the road and within the context of nearby residences. The Terrain Viewshed indicates there would be visibility from all of the roadway through this area of Canterbury without the benefit of the surrounding forest screening. The Vegetated Viewshed indicates intermittent visibility through this area where vegetation is cleared along the roadway, in particular to the west along Pembroke Road.

d. The distance of the proposed facility from the scenic resource

Distance to the nearest proposed 345 kV structure is approximately 90' (looking north) and 287' (looking south). Distance to the nearest proposed 115 kV structure is approximately 80' (looking north) and 280' (looking south).

e. The horizontal breadth or visual arc of the visible elements of the proposed facility

The visual arc or visual angle is approximately 34 degrees of the view illustrated in the T. J. Boyle simulation, but may be considered larger when viewing from the crossing, where the line crosses the road and proceeds south.

f. The scale, elevation and nature of the proposed facility relative to surrounding topography and existing structures

The visible structures would be located near the roadway or along the length of the corridor when viewing from the road, depending on viewing location. Structures would be visible in both directions along the corridor, and all of the existing structures near the road crossing would be replaced and relocated. The proposed structures in this area range from 70' to 110' in height, and would not match the height, materials or configuration of the existing structures in the corridor. The simulation indicates that several structures would be visible from the roadway, including a 3-pole 345 kV structure. Where visible, most of the structures would be skylined above the top of the surrounding and background forest canopy. The structures closest to the road would be prominent, and would contrast with the skyline.

g. The duration and direction of the typical view of elements of the proposed facility

Visibility of the Project and proposed vegetative clearing would be to the north and south from the portion of the road that has visibility of the crossing. Because varying forms of transportation may be used (e.g. walking, running, biking, driving and/or motorcycling), duration of views would vary, but would typically be several seconds each time travelers pass under the crossing. Travelers headed east would potentially have greater exposure to the structures nearest the road.

h. The presence of intervening topography between the scenic resource and elements of the proposed facility

Landform is not expected to screen additional structures to the north and south of the roadway crossing. However, the surrounding vegetation and buildings would help to screen structures and views of the cleared ROW from other locations along the road. The areas of visibility and associated structures described above are based on screened views, including the effect of surrounding vegetation and buildings. Overall, proximity of structures to the road and proposed structure heights would elevate the appearance of the Project.

Potential Visual Impact Based on Analysis of Factors Under Site 301.05(b)(6)

In summary, at Pembroke Road we determined that there is a low-medium expectation for scenery. The Project would introduce an element with industrial character into parts of a landscape that are residential and commercial in nature (among other uses as described above), and where the existing corridor does not currently include structures of the material, height, number and configuration that would result from the proposed Project. Because of the proximity to the road and design of the structures, the proposed structures closest to the road would be prominent and potentially contrast with the existing conditions in the corridor and area. There would be a negative degradation to the scenic quality of the landscape, which would result in a negative effect to the future use and enjoyment of users of Pembroke Road. We therefore would rate the potential visual impact as high.

3. Mitigation - Site 301.05(b)(10)

The NPT VIA does not specifically cite mitigation for the area around Pembroke Road, though general statements about mitigation in the Subarea 5 Impact summary (NPT VIA, p. 5-3) note that the proposed transmission line follows an existing transmission corridor, the existing 115 kV transmission line has been redesigned and relocated to accommodate the NPT project and minimize clearing and eliminate acquiring additional ROW, and the use of shorter weathering steel H-frame structures rather than galvanized steel lattice structures.

4. Site 301.14(a) Criteria Relative to Findings of Unreasonable Adverse Effect on Aesthetics**(1) Existing character of the area of potential visual impact**

Pembroke Road is in the Merrimack Valley region of New Hampshire and accesses residential, commercial, light industrial and institutional uses along the road. The surrounding landscape is generally characterized by scattered mature vegetation, residential, commercial, government and institutional buildings and properties. During field investigation that T. J. Boyle performed as part of the DOE VIA, we gave a rating of Ordinary to the Scenic Attractiveness at the simulation location.

(2) The significance of affected scenic resources and their distance from the proposed facility

The road services the surrounding residential, commercial, light industrial and institutional uses, and is also a commuter corridor into and out of this area of Concord. This location is a roadway with a scenic quality that is supported with public funds (Site 102.45(c) and (d)). The visible portions of the Project are near to the road at the corridor crossing, and are visible along the corridor to the north and south.

(3) The extent, nature, and duration of public uses of affected scenic resources

Public uses along Pembroke Road include walking, biking, and driving/motorcycling. The duration of use of the scenic resource would vary based on mode of travel, but would typically be a several seconds, and potentially longer for eastbound travelers due to the height and location of the structures proposed immediately north of the road. Due to the nature of the area, views of the corridor would be a regular occurrence for those who live or work in the area or utilize the road to access other uses in this area of Concord.

(4) The scope and scale of the change in the landscape visible from affected scenic resources

The scope and scale of change is considered medium-high. Although existing views include transmission structures in the existing corridor, the different design, height and character of proposed structures and the proximity to the road would result in a significant change to the existing landscape, especially for regular users of the road. Changes to the landscape would be prominent and in contrast to the existing character of the view.

(5) The evaluation of the overall daytime and nighttime visual impacts of the facility as described in the visual impacts assessment and other relevant evidence

The above review of visual impacts per 301.05(b)(6) criteria finds the Project to result in high visual impacts. The NPT VIA did not assess this resource.

(6) The extent to which the proposed facility would be a dominant and prominent feature within a natural or cultural landscape of high scenic quality or as viewed from scenic resources of high value or sensitivity

The Project would result in all new and taller electrical transmission structures being visible from the simulation location, and there would be an increase in total number of structures. These structures would be visible at or near the road crossing. As a result, the Project would be inevitably noticeable in the vicinity of the corridor crossing, and would be considered a prominent feature within the visual landscape. The proposed size, material, and number of new structures would be dominant and prominent within the view, and would contrast from the existing conditions, which does not include structures of the same material, height or configuration as the proposed conditions.

(7) The effectiveness of the measures proposed by the applicant to avoid, minimize, or mitigate unreasonable adverse effects on aesthetics, and the extent to which such measures represent best practical measures

NPT has not specifically proposed mitigation at this location, although general statements about mitigation in the Subarea 5 Impact summary (NPT VIA, p. 5-3) are noted above.

For this particular resource, not all of these general measures are accurate or adequate. For instance, although the existing corridor is being used and the existing 115 kV transmission lines are being redesigned to accommodate the NPT Project, the result is much taller structures of a different material and configurations than currently exists in the corridor. The relocated 115 kV structures do not match the height, material, configuration or character of the existing 115 kV structures. While the weathering steel H-frame structures are shorter than galvanized steel lattice structures, they would still be very tall structures within the ROW, would be skylined, and the new structures are planned in relatively close proximity to the road.

At the corridor crossing, a 110' tall 115 kV structure is proposed 80' from the road, and would not be well screened by existing or proposed vegetation. An 85' tall 345 kV structure is proposed 90' from the road, and another 110' tall 115 kV structure is proposed 120' from the road. The number and scale of structures visible from the road would significantly increase, and would not match the existing character of the corridor. Other forms of mitigation that would be considered best practical measures at this location, include utilizing alternative structure types and configuration for the relocated 115 kV structures to reduce height, and using non-specular conductors (discussed in Section 4.4 of the T. J. Boyle Visual Impact Analysis Report), setting proposed structures significantly back from the roadway, and incorporating vegetative mitigation. From Pembroke Road, mitigation as proposed by NPT would be inadequate and would not represent use of all best practical mitigation measures.

5. Discussion of Unreasonable Adverse Effect on Aesthetics

T. J. Boyle found impacts to this resource unreasonable as a result of the visual change, mostly due to the height and configuration of the new 115 kV structures and location of the three-pole, dead-end 345 kV structure in close proximity to the roadway. Vegetative mitigation is not proposed at this location, which would help to reduce adverse impacts. Reconfiguration of structures needs to be considered to lower overall height of 115 kV structures.

Scenic Resource Name: Turtletown Pond (Turtle Pond)**Potential Visual Impact:** High**Will the Project Result in Unreasonable Impacts:** Yes**Simulation:** T.J. Boyle NPT DOE VIA Simulations – CO-4 Turtletown/Turtle Pond**Town:** Concord, New Hampshire**Field Documentation Notes**Observation Notes: Fishing/BoatingScenic Attractiveness: DistinctiveNumber of Visible Residences: 4Number of Visible Existing Transmission Structures: 10Scenery Interest: High**1. Narrative**

Turtletown Pond (Turtle Pond) is a 121-acre lake in Concord, NH. Within 3.5 miles of downtown, it offers a highly accessible nature-area refuge to the capitol area. The pond is adjacent to the NH F&G's Turtletown Pond Wildlife Management Area. It lays within the greater Broken Ground area which the Concord Master Plan describes as "about five square miles bounded on the north by Oak Hill, on the east by the Loudon town line, on the south by Route I-393, and on the west by the PSNH transmission line."²² Concord and others have actively acquired land and easement to protect this open space. It is a stated priority of the Concord Master Plan that: "Public acquisition is recommended for most of Broken Ground in recognition of its diverse environment, its value as a large unfragmented habitat for a wide range of wildlife, as well as the range of recreational uses it offers to the public." Turtletown Pond has a concrete boat ramp and universally designed fishing pier to good warm water fishing, but it also provides a convenient place for a short break at lunch or on the way home. Hunting, hiking, cross country skiing and snowmobiling are popular throughout the larger Broken Ground recreation area.

There are two existing 115 kV transmission and one distribution line in the ROW located in the western shallows of Turtletown Pond; they are the primary existing source of scenic degradation.

2. Site 301.05(b)(6) Criteria used to characterize potential visual impacts**a. Expectations of typical viewer**

Section 4.2 of the T. J. Boyle Visual Impact Analysis Report documents that typical viewers have an expectation of high scenic quality at New Hampshire water features. The field team considered the scenic value to be "distinctive," meaning that it is uncommonly high.

b. Effect on future use and enjoyment

Turtletown Pond provides a convenient opportunity for a brief respite from the city for Concord residents. The New Hampshire Lakes Association's Survey, which is discussed in Section 4.2 of the T. J. Boyle Visual Impact Analysis Report, indicates typical viewers have a high expectation for scenery and that scenic degradation will have a negative effect on the future use and enjoyment.

c. Extent of proposed facility, including all structure and disturbed areas, visible from the scenic resource

²² Concord Master Plan, p. VII-13.

From the boat launch and dock area, the existing 115 kV transmission lines disrupt an otherwise naturally-appearing open space. The addition of the 345 kV line exacerbates this situation, further undermining Concord's efforts to establish the greater Broken Ground as a recreation area.

d. The distance of the proposed facility from the scenic resource

Distance to the nearest structure is approximately 600 feet; the closest structure in the KOP CO-4 photosimulation is 1,058 feet. All structures are in the viewer's foreground.

e. The horizontal breadth or visual arc of the visible elements of the proposed facility

The Project will be visible across a 90° horizontal angle of view.

f. The scale, elevation and nature of the proposed facility relative to surrounding topography and existing structures

The structures are generally taller than the adjacent tree canopy and present an industrial-appearing element in a natural area.

g. The duration and direction of the typical view of elements of the proposed facility

People could spend an hour to most of the day boating or fishing on Turtletown Pond. The Project will be visible from anywhere on the lake.

h. The presence of intervening topography between the scenic resource and elements of the proposed facility

The view toward the Project is over water; there are no topographic obstructions.

Potential Visual Impact Based on Analysis of Factors Under Site 301.05(b)(6)

In summary, Concord has committed to making Turtletown Pond, and the greater Broken Ground area a conservation area that will serve as a refuge for the urban population. The addition of a 345 kV transmission line that will be visible from everywhere on the lake undermines this effort. We therefore rate the potential visual impact as **high**.

3. Mitigation - Site 301.05(b)(10)

The NPT VIA identifies three types of mitigation:

- Using weathering steel structures to reduce contrast in color and form.
- Using H-frame structures to minimize the height and scale of the structures.
- Maintaining similar spacing with existing transmission structures. (NPT VIA, p. 5-17).

4. Site 301.14(a) Criteria Relative to Findings of Unreasonable Adverse Effect on Aesthetics

(1) Existing character of the area of potential visual impact

The City of Concord is combining Turtletown Pond and the greater Broken Ground area as a natural area for passive recreation. The effectiveness of this effort requires that development be kept at bay.

(2) The significance of affected scenic resources and their distance from the proposed facility

Turtletown Pond qualifies as a scenic resource for several reasons. It is a public great pond (Site 102.45(c)), NH F&G installed a concrete boat ramp and universally designed fishing pier (Site 102.45(d)), it is part of the larger Broken Ground recreation area being acquired as part of Concord's Master Plan (102.45(d)), and it is adjacent to a NH F&G wildlife management area (Site 102.45b)). This nexus of high quality scenic

resources merits a greater significance because of its proximity to an urban population and the City's commitment to protect it.

(3) The extent, nature, and duration of public uses of affected scenic resources

Turtletown Pond has a concrete boat ramp and universally designed fishing pier for good warm water fishing. Hunting, hiking, cross country skiing and snowmobiling are popular throughout the larger Broken Ground recreation area. The Pond's convenient proximity to an urban population suggest that it receives relatively high use, though no specific visitation data are available. The Community Workshops indicated that this is a regularly used resource. It is expected that use ranges from a short break, to a full day; it is expected that repeated use is common.

(4) The scope and scale of the change in the landscape visible from affected scenic resources;

The scope and scale of change is considered medium-high. The Project is sited within the shallows at the edge of Turtletown Pond, which is a visually sensitive location. There are two 115 kV transmission lines in the corridor, and the addition of the larger 345 kV transmission line increases the electrical transmission lines visible from this resource.

(5) The evaluation of the overall daytime and nighttime visual impacts of the facility as described in the visual impacts assessment and other relevant evidence

The above review of visual impacts per 301.05(b)(6) criteria found the Project to result in high visual impacts. The NPT VIA found the visual impact from Turtletown Pond (Turtle Pond) to be low.

(6) The extent to which the proposed facility would be a dominant and prominent feature within a natural or cultural landscape of high scenic quality or as viewed from scenic resources of high value or sensitivity

The Project will be a dominant and prominent feature when viewed from anywhere on Turtletown Pond. Turtletown Pond has high scenic quality, it is identified as a high value resource in Concord's Master Plan, and the corridor is sited in the water, which is a visually sensitive location.

(7) The effectiveness of the measures proposed by the applicant to avoid, minimize, or mitigate unreasonable adverse effects on aesthetics, and the extent to which such measures represent best practical measures

The proposed mitigation is not effective; the Project further degrades a conservation and recreation resource that Concord has prioritized for protection. This is an ideal situation for burial of both the Project and the existing lines as a form of mitigation that compensates for visual impacts to other areas.

5. Discussion of Unreasonable Adverse Effect on Aesthetics

The most effective form of mitigation for transmission line projects is the proper siting and alignment of the corridor, and the existing ROW is improperly sited. Concord has prioritized Turtletown Pond and the greater Broken Ground area for protection. Adding a 345 kV line to the existing corridor undermines Concord's past efforts and future commitment to protecting the area. T. J Boyle found impacts to this resource unreasonable due to the lack of additional mitigation measures, including use of non-specular conductors, eliminating the 345kV three-pole structure, matching existing 115kV delta configuration to reduce the height of the relocated 115kV structures.

T. J Boyle recommends mitigation by undergrounding the Project at this location. Burial of the existing 115 kV transmission lines would significantly improve this area and would serve as compensatory mitigation.

Scenic Resource Name: Nottingham Road**Potential Visual Impact:** High**Will the Project Result in Unreasonable Impacts:** Yes**Simulation:** T.J. Boyle NPT DOE VIA Simulations – DE-1 Nottingham Road**Town:** Deerfield, New Hampshire**Field Documentation Notes****Observation Notes:** Pond and wetland visible to the east/south**Scenic Attractiveness:** Noteworthy**Number of Visible Residences:** 3**Number of Visible Existing Transmission Structures:** 17 (27 total in both directions)**Scenery Interest:** Moderate to High**1. Narrative**

Nottingham Road is in Deerfield, NH, and runs roughly northwest-southeast in the vicinity of the Project. This road is within the Merrimack Valley region of New Hampshire. The road is accessible year-round, and provides access to residential uses on either side of the road, as well as access to other parts of Deerfield to the northwest and the town of Nottingham to the southeast. In the area where the proposed Project is visible, the landscape is characterized by forested roadsides, low-density residential homes, the nearby pond and associated wetlands, and the existing transmission corridor crossing. This location is a roadway with a scenic quality that is supported with public funds (Site 102.45(c) and (d)). The proposed 345 kV structures, existing and relocated 115 kV structures (two separate circuits on the north side of the 345 kV line), and new right-of-way clearing would be visible from the road as it is crossed by the corridor. There is no AADT information collected for Nottingham Road. The T. J. Boyle viewpoint location is within the corridor crossing. Nottingham Road is representative of many roads that are crossed by the NPT that are within an area that possess a scenic quality, include nearby residential uses, and is supported by public funds.

2. Site 301.05(b)(6) Criteria used to characterize potential visual impacts**a. Expectations of typical viewer**

The typical viewer along Nottingham Road is a motorist traveling by vehicle or motorcycle, a pedestrian or a bicyclist. Travelers utilize the road for various reasons, but would typically be travelling from one location to another. Views from this portion of the road include residential, the adjacent forest, the existing transmission corridor and the nearby pond. Because this road is not part of a designated scenic byway and is adjacent to these uses and the presence of the existing transmission corridor, the expectations for the typical viewer at this location are considered medium.

b. Effect on future use and enjoyment

The Project would introduce a new 345 kV transmission line with large structures into the corridor, as well as relocate and replace one of the existing 115 kV lines with new larger structures near the center of the corridor. The existing 115 kV line on the north side of the corridor would remain. The proposed 345 kV structures would be galvanized steel lattice, and the new 115 kV structures would be galvanized monopoles. The materials and configuration of the relocated 115 kV structure would not match the existing wooden delta or H-frame configuration of the 115 kV transmission line that would remain. The larger structures with different materials and configuration would be out of character with the existing conditions. Because the proposed transmission infrastructure crosses the road, including locating a 130' tall 345 kV structure 115' from the road, an 88' tall 115 kV structure 70' from the road, and structures as

tall as 140' into the view of the pond, the Project would have a negative effect on the future use and enjoyment of this roadway.

c. Extent of proposed facility, including all structure and disturbed areas, visible from the scenic resource

The T. J. Boyle simulation illustrates new electrical transmission infrastructure that would be visible in close proximity to the road and within the context of the view over the pond. The Terrain Viewshed indicates there would be visibility from all of the roadway through this area of Deerfield without the benefit of the surrounding forest screening. The Vegetated Viewshed indicates visibility will be limited to the area where the corridor crosses Nottingham Road.

d. The distance of the proposed facility from the scenic resource

Distance to the nearest proposed 345 kV structure is approximately 115' (looking west) and 190' (looking east). Distance to the nearest proposed 115 kV structure is approximately 70' (looking west) and 190' (looking east).

e. The horizontal breadth or visual arc of the visible elements of the proposed facility

The visual arc or visual angle is approximately 18 degrees of the view illustrated in the T. J. Boyle simulation, but may be considered larger because the line crosses the road and proceeds in the other direction.

f. The scale, elevation and nature of the proposed facility relative to surrounding topography and existing structures

The visible structures would be located near the roadway or along the length of the corridor when viewing from the road. Structures would be visible in both directions along the corridor, and only the existing 115 kV structures on the north side of the ROW would remain. The proposed structures in this area range from 74.5' to 140' in height, and would not match the height, materials or configuration of the existing structures in the corridor. The simulation indicates that several structures would be visible from the roadway, including a 140' galvanized steel lattice 345 kV structure that extends above the photograph. Where visible, most of the structures would be skylined above the top of the surrounding and background forest canopy. All of the proposed structures would be prominent, of an industrial character, and would contrast with the existing conditions.

g. The duration and direction of the typical view of elements of the proposed facility

Visibility of the Project and proposed vegetative clearing would be to the east and west from the portion of the road that has visibility of the crossing. Because varying forms of transportation may be used (e.g. walking, running, biking, driving and/or motorcycling), duration of views would vary, but would typically be several seconds each time travelers pass under the crossing.

h. The presence of intervening topography between the scenic resource and elements of the proposed facility

Landform is not expected to screen additional structures to the north and south of the roadway crossing. However, the surrounding vegetation would help to screen structures and views of the cleared ROW from other locations along the road. The areas of visibility and associated structures described above are based on screened views, including the effect of surrounding vegetation. Overall, proximity of structures to the road and proposed structure heights would elevate the appearance of the Project.

Potential Visual Impact Based on Analysis of Factors Under Site 301.05(b)(6)

In summary, at Nottingham Road we determined that there is a medium expectation for scenery. The Project would introduce an element with industrial character into parts of a landscape that are residential in nature with views of the adjacent pond, and where the existing corridor does not currently include structures of the material, height, number and configuration that would result from the proposed Project. Because of the proximity to the road as well as height and design of the structures, all proposed structures would be prominent and contrast with the existing conditions in the corridor and area. There would be a negative degradation to the scenic quality of the landscape, which would result in a negative effect to the future use and enjoyment of users of Nottingham Road. We therefore would rate the potential visual impact as high.

3. Mitigation - Site 301.05(b)(10)

The NPT VIA does not specifically cite mitigation for the area around Nottingham Road, though general statements about mitigation in the Subarea 6 Impact summary (NPT VIA, p. 6-3) note that the proposed transmission line follows an existing transmission corridor, and an existing 115 kV transmission line has been redesigned and relocated to accommodate the NPT project and minimize clearing and eliminate acquiring additional ROW.

4. Site 301.14(a) Criteria Relative to Findings of Unreasonable Adverse Effect on Aesthetics

(1) Existing character of the area of potential visual impact

Nottingham Road is in the Merrimack Valley region of New Hampshire and accesses low-density residential uses along the road, as well as Deerfield to the northwest and Nottingham to the southeast. The surrounding landscape is generally characterized by mature roadside vegetation and residential properties. The view of the pond that is visible in the simulation is somewhat rare along the road. During field investigation that T. J. Boyle performed as part of the DOE VIA, we gave a rating of Noteworthy was given to the Scenic Attractiveness at the simulation location.

(2) The significance of affected scenic resources and their distance from the proposed facility

The road services the surrounding residential uses, and is also a commuter corridor into and out of this area. This location is a roadway with a scenic quality that is supported with public funds (Site 102.45(c) and (d)). The visible portions of the Project are near to the road at the corridor crossing, and are visible along the corridor to the north and south.

(3) The extent, nature, and duration of public uses of affected scenic resources

Public uses along Nottingham Road include walking, biking, and driving/motorcycling. The duration of use of the scenic resource would vary based on mode of travel, but would typically be several seconds. Due to the nature of the area, views of the corridor would be a regular occurrence for those who live or work in the area.

(4) The scope and scale of the change in the landscape visible from affected scenic resources

The scope and scale of change is considered medium-high. Although existing views include transmission structures in the existing corridor, the different materials, height and character of proposed structures and the proximity to the road would result in a significant change to the existing landscape, especially for regular users of the road. Changes to the landscape would be prominent and in contrast to the existing character of the view.

(5) The evaluation of the overall daytime and nighttime visual impacts of the facility as described in the visual impacts assessment and other relevant evidence

The above review of visual impacts per 301.05(b)(6) criteria finds the Project to result in high visual impacts. The NPT VIA did not assess this resource.

(6) The extent to which the proposed facility would be a dominant and prominent feature within a natural or cultural landscape of high scenic quality or as viewed from scenic resources of high value or sensitivity

The Project would result in new and taller electrical transmission structures being visible from the simulation location, and there would be an increase in total number of structures. These structures would be visible at or near the road crossing. As a result, the Project would be inevitably noticeable in the vicinity of the corridor crossing, and would be considered a prominent feature within the visual landscape, especially when looking toward the pond or passing the structures nearest the road. The proposed size, material, and number of new structures would be dominant and prominent within the view, and would contrast from the existing conditions, which does not include structures of the same material, height or configuration as the proposed conditions.

(7) The effectiveness of the measures proposed by the applicant to avoid, minimize, or mitigate unreasonable adverse effects on aesthetics, and the extent to which such measures represent best practical measures

NPT has not specifically proposed mitigation at this location, although general statements about mitigation in the Subarea 6 Impact summary (NPT VIA, p. 6-3) are noted above.

For this resource, not all of these general measures are accurate or adequate. For instance, although the existing corridor is being used and one of the existing 115 kV transmission line are being redesigned and relocated to accommodate the NPT project, the result is much taller structures of a different material and configurations than currently exists in the corridor. The relocated 115 kV structures do not match the height, material, configuration or character of the existing 115 kV structures.

At the corridor crossing, an 88' tall 115 kV structure is proposed 70' from the road, and a 130' tall 345 kV structure is proposed 115' from the road, and structures as tall as 140' that cross the pond to the east. These proposed structures would not be well screened by existing or proposed vegetation from the corridor crossing. The number and scale of structures visible from the road would significantly increase, and would not match the existing character of the corridor. Other forms of mitigation that would be considered best practical measures at this location, include utilizing alternative structure types and configuration for the relocated 115 kV structures to reduce height, alternate materials and structure types that more closely match the existing conditions, using non-specular conductors (discussed in Section 4.4 of the T. J. Boyle Visual Impact Analysis Report), setting proposed structures significantly back from the roadway, and potentially incorporating vegetative mitigation. From Nottingham Road, mitigation as proposed by NPT would be inadequate and would not represent use of all best practical mitigation measures.

5. Discussion of Unreasonable Adverse Effect on Aesthetics

The Impacts at this resource were found to be unreasonable because of the scale, height, and industrial character of the proposed structures when compared to the existing character of the area and corridor. A wider corridor would accommodate lower structures, and other structure materials and configurations should be considered. For instance, structures west of Cross Country Road utilize lower H-frame structures that more closely match the surrounding forest heights. Additional mitigation that would be considered best practical measures at this location, need to be proposed to reduce unreasonable adverse effects.

Scenic Resource Name: Deerfield Center Historic District**Potential Visual Impact:** Medium**Will the Project Result in Unreasonable Impacts:** Yes**Simulation:** T.J. Boyle NPT DOE VIA Simulations – DE-2 Church Street/Deerfield Center Historic District**Town:** Deerfield, New Hampshire**Field Documentation Notes**Observation Notes: Listed Historic SiteScenic Attractiveness: NoteworthyNumber of Visible Residences: 5Number of Visible Existing Transmission Structures: 0Scenery Interest: Moderate**1. Narrative**

Deerfield Center Historic District, Deerfield, NH is a 12.1-acre District listed on the National Register of Historic Places as “locally significant in the area of Community Planning and Development for its development in the 19th and early 20th century as the religious and governmental center of Deerfield, and in the area of Architecture for its fine collection of mid and late 19th century and early 20th century buildings”. It includes 14 major buildings and 3 outbuildings set on fairly spacious village lots fronting Old Center Road South (aka Church Street) in the village of Deerfield.”²³ It is part of the current village center, which is also identified as a scenic resource (Site 102.45(f)), and Old Center Road South is part of the state designated Upper Lamprey River Scenic Byway (Site 102.45(a)), which is a scenic drive (Site 102.45 (c)).

There is the potential for scattered visibility of the Project throughout the Historic District, but particularly along Church Street. The KOP used for the simulation is taken standing in front of the Deerfield Town Hall looking toward the Deerfield Community Church (originally the Congregational Church), which still looks much as it did in the 1880s when it was last renovated.

2. Site 301.05(b)(6) Criteria used to characterize potential visual impacts**a. Expectations of typical viewer**

Residents familiar with the Center will recognize it as the locus of their town’s heritage. The visual integrity of the architecture and surroundings contribute to their sense of place. Visitors, particularly those interested in New England quaintness, will also place very high value on historic visual integrity. The introduction of very tall steel monopole structures undermines this expectation.

b. Effect on future use and enjoyment

For residents, future patterns of use may not change—they will still drive Old Center Road South, go to church and use the facilities of the town center. However, the visual integrity of the Historic District will be eroded, which in turn will change the sense of place and diminish their enjoyment and pride. Future visitors can be expected to have a similar reaction to the erosion of visual integrity, and they may be somewhat less likely to come to the Deerfield Center Historic District.

c. Extent of proposed facility, including all structure and disturbed areas, visible from the scenic resource

²³ National Register of Historic Places Registration Form: Deerfield Center Historic District, page 120.

Within the Historic District most views from the most populated locations will be at least partially screened, see for instance the NPT VIA, page 6-29. However, there is a location as one leaves the Deerfield Town Hall with a clear view of one weathered steel pole structure in co-dominance with the Deerfield Community Church steeple (KOP DE-2). It is this contrast which degrades the visual integrity of the Historic district and its sense of place.

d. The distance of the proposed facility from the scenic resource

Distance to the nearest proposed structure is approximately 960 feet, which is within the viewer's foreground.

e. The horizontal breadth or visual arc of the visible elements of the proposed facility

The visual arc for one structure is narrow.

f. The scale, elevation and nature of the proposed facility relative to surrounding topography and existing structures

There currently are two existing 115 kV transmission lines in the existing 200-foot ROW, with a cleared width of approximately 175 feet. The six existing structures just to the north of the Historic District are not visible; their heights range between 61 and 88 feet. One 115 kV line will be moved and the replacement structures range from 84 to 97 feet; the three new 345 kV structures range from 115 to 130 feet high.

The existing ROW is not wide enough to accommodate three transmission lines without a significant increase in height to keep the conductors above the danger zone from trees that border the corridor. The visual integrity of the Historic District is deteriorated because of this significant increase in structure height.

g. The duration and direction of the typical view of elements of the proposed facility

The view in KOP DE-2 is seen as one leaves the Deerfield Town Hall, it juxtaposes an iconic New England white church steeple with a very tall dark-rust colored transmission structure. The duration of the view will be relatively short, but the dissonance of the view may be memorable and undermine the historic sense of place.

h. The presence of intervening topography between the scenic resource and elements of the proposed facility

The Historic District is relatively flat, but there are numerous historic buildings and trees that will screen or partially screen the Project from most viewpoints.

Potential Visual Impact Based on Analysis of Factors Under Site 301.05(b)(6)

In summary, the Project will be screened or partly screened from most locations in the Deerfield Center Historic District. However, there is a location in front of the Deerfield Town Hall where a new 130-foot rust-colored steel pole structure will appear as co-dominant with the white steeple of the Deerfield Community Church. We therefore would rate the potential visual impact as medium.

3. Mitigation - Site 301.05(b)(10)

The only mitigation identified in the NPT VIA for the Historic district is "using weathering steel monopole structures to minimize contrast in form and color within the existing corridor" (NPT VIA, p. 6-27).

4. Site 301.14(a) Criteria Relative to Findings of Unreasonable Adverse Effect on Aesthetics

(1) Existing character of the area of potential visual impact

Deerfield Center Historic District is listed on the National Register of Historic Places for its architecture and an example of community planning in 19th century New England. It is part of the Deerfield Village Center and is bisected by the Upper Lamprey Scenic Byway, both of which are also scenic resources. It is the integrity of this historic character that defines Deerfield Center Historic District's sense of place.

(2) The significance of affected scenic resources and their distance from the proposed facility

Deerfield Center Historic District has been the governmental and religious center of Deerfield since 1835. Its scenic quality derives in part from the visual integrity of its historic architecture. As such, it is culturally important and sensitive to visual intrusion or degradation from an industrial facility that is insensitive to the community's values and sense of place.

The District's significance is increased because it overlaps with other scenic resources. It is part of the modern village center (Site 102.45(f)), and Old Center Road South is part of the state designated Upper Lamprey River Scenic Byway (Site 102.45(a)), which is a scenic drive (Site 102.45 (c)).

The structure visible in KOP DE-2 is approximately 960 feet from the viewer.

(3) The extent, nature, and duration of public uses of affected scenic resources

Deerfield Center Historic District is the traditional civic and religious center of Deerfield, so it is a regular part of residents' lives as they attend church, use civic resources, and drive from here to there. Visitors come to experience a recognized historic New England village. Duration of uses ranges from a few minutes to hours, but can happen frequently throughout the week. The Project is clearly visible as one leaves the historic Deerfield Town Hall and looks toward the Deerfield Community Church; there are filtered views from other locations.

(4) The scope and scale of the change in the landscape visible from affected scenic resources;

The scope and scale of change is considered medium-high. From KOP DE-2, the Project is highly prominent and co-dominant with the white steeple of the Deerfield Community Church and in this context results in a high change in scope and scale. From other locations the effect will be less.

(5) The evaluation of the overall daytime and nighttime visual impacts of the facility as described in the visual impacts assessment and other relevant evidence

The above review of visual impacts per 301.05(b)(6) criteria found the Project to result in Medium visual impacts. The NPT VIA found the visual impact from Deerfield Center Historic District to be low-medium.

(6) The extent to which the proposed facility would be a dominant and prominent feature within a natural or cultural landscape of high scenic quality or as viewed from scenic resources of high value or sensitivity

The Project will be a dominant and prominent feature when viewed from KOP DE-2.

(7) The effectiveness of the measures proposed by the applicant to avoid, minimize, or mitigate unreasonable adverse effects on aesthetics, and the extent to which such measures represent best practical measures

The rust-color presents a high contrast with the white historic architecture, and is not effective as viewed from KOP DE-2. No other mitigation is proposed.

5. Discussion of Unreasonable Adverse Effect on Aesthetics

Impacts to Deerfield Center Historic District are considered unreasonable due to the height and industrial character of the proposed 345 kV structure when compared with the existing historic character and sense of

place. Although using a monopole steel structure helps to reduce adverse impacts, ultimately the height of the 345kV line needs to be lowered to avoid visibility from this resource. Structures proposed west of Cross Country Road utilize a lower H-frame configuration, and this needs to be considered for this area. Otherwise, the width of the existing ROW is inadequate to accommodate three overhead transmission lines. Without widening the ROW, the only solution is to bury the 345 kV line.

The Deerfield Center Historic District is the scenic resource being evaluated, though KOP DE-2 also represents the Upper Lamprey Scenic Byway and Deerfield village center. The aesthetics of both these additional scenic resources also are impacted at other locations, particularly where they are intersected by the Project.

Scenic Resource Name: Little Dummer Pond**Potential Visual Impact:** High**Will the Project Result in Unreasonable Impacts:** Yes**Simulation:** T.J. Boyle NPT DOE VIA Simulations – DU-1 Little Dummer Pond**Town:** Dummer, New Hampshire**Field Documentation Notes for the KOP**

Observation Notes: NP will be about midway up the ridge. The ridge appears to have been harvested about 15+/- years ago. No boat launch, but there is a canoe chained to a tree. Great camping spot, there is a fire ring.

Scenic Attractiveness: Distinctive

Number of Visible Residences: 0

Number of Visible Existing Transmission Structures: 3

Scenery Interest: Moderate

1. Narrative

Little Dummer Pond, in Dummer, NH is a 31-acre public great pond that is surrounded by lands owned and operated by Wagner Forest Management. Views from the lake consist of generally undeveloped shorelines and surrounding forested hills; there is only one small camp with less than 100 feet of cleared shoreline. The area is generally accessible to the public for recreation, and there is an informal hand-carry boat launch and a fire ring that indicated active camping and boating at this KOP. Several recreationists were using ATVs on the access road during our October site visit. It is managed by NH Fish & Game for trout. Stands in different stages of forest management are apparent on the hillside. The public would describe the landscape character as wild; there are no residential units visible from the viewpoint. The transmission line from Granite Reliable Wind is only just visible at the bottom of the hill; the proposal is to conspicuously route the NPT in a new ROW two-thirds of the way up the hill. The area is particularly scenic and provides a sense of remote and tranquil character.

2. Site 301.05(b)(6) Criteria used to characterize potential visual impacts**a. Expectations of typical viewer**

The attractions of this scenic resource observed during fieldwork are its remote and tranquil character, as well as its distinctive scenic quality. Users are anticipated to select Little Dummer Pond for these attributes, which will be significantly degraded by the proposed Project. Section 4.2 of the T. J. Boyle Visual Impact Analysis Report documents that typical viewers have an expectation of high scenic quality at New Hampshire water features.

b. Effect on future use and enjoyment

The sense of remoteness and tranquil character of Little Dummer Pond will be disrupted by a highly visible new ROW with industrial character lattice towers in an otherwise natural-appearing landscape. The New Hampshire Lakes Association's Survey, which is discussed in Section 4.2 of the T. J. Boyle Visual Impact Analysis Report, indicates typical viewers have a high expectation for scenery and that scenic degradation will have a negative effect on the future use and enjoyment.

c. Extent of proposed facility, including all structure and disturbed areas, visible from the scenic resource

The Project will be visible from virtually everywhere on Little Dummer Pond.

d. The distance of the proposed facility from the scenic resource

Distance to the nearest proposed structure is approximately 2,254 feet or 0.3 miles, well within the viewer's foreground.

e. The horizontal breadth or visual arc of the visible elements of the proposed facility

The Project structures will be clearly visible in a wide arc as it traverses the hillside—for approximately 120° as seen from the photosimulation viewpoint.

f. The scale, elevation and nature of the proposed facility relative to surrounding topography and existing structures

The ROW is located high on the slope, making it much more dominant than if it were located at the bottom of slope, adjacent to the Granite Reliable Wind project's generator lead line. The lattice towers range from 75 to 90 feet high, which is well above the surrounding canopy that borders the ROW, some of which appears to be only 20 feet high.

g. The duration and direction of the typical view of elements of the proposed facility

Since the Project is located on a prominent slope just west of the lake, and it is essentially visible from the whole lake, the typical viewer will see it throughout their day of fishing or boating.

h. The presence of intervening topography between the scenic resource and elements of the proposed facility

The viewer is looking over a scenic water resource toward the Project in the foreground high on a forested slope. This situation provides maximum visual exposure.

Potential Visual Impact Based on Analysis of Factors Under Site 301.05(b)(6)

In summary, users of Little Dummer Pond expect to find a remote, tranquil and scenic natural-appearing setting. The lake is stocked for fishing by NH F&G, which also helps attract users. The introduction of industrial-appearing galvanized steel lattice structures that rise far above the surrounding trees will dominate the view and have a high effect on future use and enjoyment. We therefore would rate the potential visual impact as high.

3. Mitigation - Site 301.05(b)(10)

The NPT VIA states that mitigation is to site the corridor so that “most of the lattice structures will be seen against a wooded backdrop” (NPT VIA, page 1-70).

4. Site 301.14(a) Criteria Relative to Findings of Unreasonable Adverse Effect on Aesthetics**(1) Existing character of the area of potential visual impact**

Little Dummer Pond is located in a large managed forested area. In the foreground, to the west is a forested ridge that rises approximately 550' above the lake; portions of it have been harvested. The overall experience is of a remote, tranquil and scenic natural-appearing setting.

(2) The significance of affected scenic resources and their distance from the proposed facility

Little Dummer Pond is a publicly accessible great pond. Water resources are valued for their scenic quality in the State of New Hampshire, and there are a limited number of ponds and lakes with little or no development along the shorelines.

The closest visible portions of the Project are in the viewer's foreground, approximately 0.3 miles from the KOP.

(3) The extent, nature, and duration of public uses of affected scenic resources

Field observation indicates that Little Dummer Pond is used for fishing, boating and camping. Because of the location and types of activities, it is expected that the duration of use ranges from half a day to overnight stays. The lake appears to receive low but regular use, but that is desirable for an area that is valued for a sense of remoteness and tranquility.

(4) The scope and scale of the change in the landscape visible from affected scenic resources

The existing Granite Reliable Wind generator lead line is marginally visible. However, the new NPT corridor, design and character of proposed structures, and extent of visibility will result in a significant change to the existing visual landscape. Changes to the landscape are both, dominant and prominent. The scope and scale of change is high.

(5) The evaluation of the overall daytime and nighttime visual impacts of the facility as described in the visual impacts assessment and other relevant evidence

The above review of visual impacts per 301.05(b)(6) criteria found the Project to result in high visual impacts. The NPT VIA found the visual impact from Little Dummer Pond to be low-medium.

(6) The extent to which the proposed facility would be a dominant and prominent feature within a natural or cultural landscape of high scenic quality or as viewed from scenic resources of high value or sensitivity

The Project will be a dominant and prominent feature when viewed from Little Dummer Pond.

(7) The effectiveness of the measures proposed by the applicant to avoid, minimize, or mitigate unreasonable adverse effects on aesthetics, and the extent to which such measures represent best practical measures

The mitigation identified in the NPT VIA is to site the corridor so that “most of the lattice structures will be seen against a wooded backdrop” (NPT VIA, p. 1-70). This mitigation does not avoid unreasonable adverse effects on aesthetics, and is ineffective. The new corridor must be located adjacent to the existing Granite Reliable Wind generator lead line at the bottom of the hillside, or on the other side of the ridge where it cannot be seen from the lake. If the structures are seen against a wooded background and not “skylined,” then use of weathered steel monopole structures and non-specular conductors are best practical measures.

5. Discussion of Unreasonable Adverse Effect on Aesthetics

The most effective form of mitigation for transmission line projects is the proper siting and alignment of the corridor. In general, siting an aerial transmission line at elevated locations does not follow generally accepted professional standards in avoidance of visual impacts. T. J Boyle found impacts to this resource unreasonable because the route chosen for the corridor causes the Project to be prominently visible on the hillside. The extent of contrast with the existing surroundings will be significant and result in unreasonable degradation to the scenic quality of this resource. Alternate corridor alignment needs to be investigated at this location to reduce the prominence of the Project from this resource. Other mitigation measures that would be considered best practical measures at this location, include alternate structure design, color, and/or materials.

Scenic Resource Name: Pontook Reservoir / Moose Path Trail Scenic Byway (Route 16)

Potential Visual Impact: Medium

Will the Project Result in Unreasonable Impacts: Yes

Simulation: T.J. Boyle NPT DOE VIA Simulations – DU-2 Pontook Reservoir Looking Northwest

Town: Dummer, New Hampshire

Field Documentation Notes

Observation Notes: Corridor is visible

Scenic Attractiveness: Distinctive

Number of Visible Residences: 0

Number of Visible Existing Transmission Structures: 0 (3 structures are visible to southwest)

Scenery Interest: Moderate to High

1. Narrative

Pontook Reservoir / Moose Path Scenic Byway (Route 16) is part of New Hampshire's Scenic and Cultural Byways, where the Byway traverses approximately 98 miles of landscape through the state's Great North Woods region. The New Hampshire DOT Scenic and Cultural Byways website indicates that "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 Pontook Reservoir also marks the beginning of the real moose country in northern New Hampshire."²⁴ The reservoir offers "pond-style fishing" and "ample parking and [a] boat launch," and is part of conservation land.^{25,26} The Pontook Reservoir and the Moose Path Scenic Byway are accessible year-round, and in the area where the proposed corridor is visible the landscape is characterized by rolling forested hillsides and background mountains, as well as the reservoir itself. This site was selected because it is a designated scenic Byway with only limited existing visibility of transmission infrastructure. The proposed HVDC structures and new right-of-way clearing would be visible from this location in two directions. The AADT for this portion of Route 16 is 1200. The T. J. Boyle viewpoint location is approximately 0.68 miles east of the NPT corridor in Dummer, NH. The Pontook Reservoir and Moose Path Scenic Byway are significant state resources that are visited throughout the year, and therefore have special scenic concern.

2. Site 301.05(b)(6) Criteria used to characterize potential visual impacts

a. Expectations of typical viewer

The typical viewer at the reservoir and along Route 16 is a fisher, boater, or motorist traveling by vehicle or motorcycle. Fishers and boaters utilize the reservoir for various reasons, including fishing along the road or in a boat, as well as boating to specifically appreciate the scenery within and around the reservoir. Motorists utilize the Byway for various reasons, including specifically appreciating scenery along the scenic Byway as well as simply utilizing the road to travel from one location to another. Views from this portion of the reservoir and Byway include the reservoir, associated dam, the roadway and surrounding forested hills and mountains. Because this road is part of a designated scenic Byway as it passes through the reservoir area, the expectations for the typical viewer are considered high.

²⁴ <https://www.nh.gov/dot/programs/scbp/tours/documents/moosepath.pdf>

²⁵ <http://www.wildlife.state.nh.us/fishing/documents/gnw-fish-guide.pdf>

²⁶ http://www.wildlife.state.nh.us/maps/bathymetry/pontook_dummer.pdf

b. Effect on future use and enjoyment

The Project would introduce a new man-made component in the far-middleground of a relatively intact natural landscape, which would be out of character with the existing conditions through this area of the Moose Path Scenic Byway. Although an existing 115 kV transmission line is visible cresting a ridge approximately 0.9 miles to the southwest, the forested hillsides and mountains in the middleground and background appear otherwise intact, and any forest management is not readily recognizable. The Project would have a negative effect on the future use and enjoyment of the Scenic Byway.

c. Extent of proposed facility, including all structure and disturbed areas, visible from the scenic resource

The T. J. Boyle Pontook Reservoir simulation looking northwest (DU-2) illustrates portions of seven (7) new HVDC transmission structures and associated changes to the forest canopy because of ROW clearing that would be visible. Additional structures would be visible to the southwest near the existing 115 kV transmission line (not depicted). The Terrain Viewshed indicates there would be visibility from all of the reservoir and roadway through this area of Dummer without the benefit of the surrounding forest screening. The Vegetated Viewshed indicates visibility from most of the reservoir and areas along the road where vegetation is cleared along the roadway, in particular where the road bisects the reservoir.

d. The distance of the proposed facility from the scenic resource

The simulated structures range from approximately 1.91 miles up to 2.45 miles away. Additional structures to the northwest may be visible depending on the viewing location from within the reservoir area. Also, structures would be visible to the southwest at approximately 0.9 miles away.

e. The horizontal breadth or visual arc of the visible elements of the proposed facility

The visual arc or visual angle is approximately 9 degrees of the view illustrated in the T. J. Boyle simulation.

f. The scale, elevation and nature of the proposed facility relative to surrounding topography and existing structures

Structures would be visible beyond the middleground tree line that surrounds the reservoir, and would ascend midway up the ridge when looking northwest from the simulation location. These structures range from 75' to 85' in height. Other structures to the southwest would be skylined above the ridgeline, and would range from 90' to 100' in height. The simulation indicates that where visible, approximately half of the height of the structures could be viewed from the reservoir and Byway. The siting of the corridor in an elevated location along the ridge to the northwest places the corridor in a prominent location, and contrast of the new corridor with the vegetated backdrop would be moderate, but would likely vary based on seasonal and weather conditions. The siting of the corridor in an elevated location along the ridge to the southwest also places the corridor in a prominent location, and contrast of the new corridor with the skyline would be high, though this would also vary based on seasonal and weather conditions.

g. The duration and direction of the typical view of elements of the proposed facility

Visibility of the Project would be to the northwest and southwest from the reservoir and Moose Path Scenic Byway. Because varying forms of transportation may be used (e.g. boating, walking, running, biking, driving and/or motorcycling), duration of views would vary, but would potentially be extended.

h. The presence of intervening topography between the scenic resource and elements of the proposed facility

Landform is expected to screen structures to the southwest that are beyond the hill, but additional structures may be visible along the ridge to the northwest, depending on viewing location within the reservoir or along the road. Additionally, surrounding forest also helps to screen additional structures, lower portions of the structures that are visible, and views of the cleared ROW. The visible structures described above are based on screened views, including the effect of surrounding vegetation. The presence of the reservoir between the viewing location and the Project increases the scenic quality of the area. Overall, topography would elevate the appearance of the Project.

Potential Visual Impact Based on Analysis of Factors Under Site 301.05(b)(6)

In summary, at the Pontook Reservoir and nearby parts of the Moose Path Scenic Byway (Route 16), we determined that there is a high expectation for scenery. The Project would introduce elements with industrial character into a landscape that is primarily natural and undeveloped, and of high quality. Impacts would be mitigated somewhat by the distances to visible portions of the Project. Although proposed structures would be visible to the southwest, these would be near existing 115 kV transmission structures. Nonetheless, the Project would be relatively prominent and potentially result in a medium level of contrast with the existing forested hillside, background mountains, or skyline, depending on seasonal and weather conditions. There would be a negative degradation to the scenic quality of the landscape, which would result in a negative effect to the future use and enjoyment of users of the Pontook Reservoir and the Moose Path Scenic Byway. For these reasons, we would rate the potential visual impact as medium.

3. Mitigation - Site 301.05(b)(10)

The NPT VIA cites mitigation as follows:

- Using weathering steel monopole transmission structures to reduce potential contrasts in color and form.
- Selecting a route that avoids locations where structures would be prominently visible against the sky.

(NPT VIA, p. 1-77)

4. Site 301.14(a) Criteria Relative to Findings of Unreasonable Adverse Effect on Aesthetics

(1) Existing character of the area of potential visual impact

The Pontook Reservoir and Moose Path Scenic Byway is in the Great North Woods region of New Hampshire. In this area, there is minimal development along the roadside and the surrounding landscape is generally characterized by the reservoir and associated boat launch facility, forested hills and background mountains. Other than the existing 115 kV structures visible on the hill to the southwest, the roadway itself, and an adjacent distribution line that follows the road, views from the reservoir and roadway are of a predominantly natural landscape with minimal evidence of forest management or other human presence. It should be noted that the reservoir is a man-made water body, and there is an associated hydro facility at its southern end. However, the landscape appears to be in a natural state, especially when looking northwest. During field investigation that was performed as part of the DOE VIA, a rating of Distinctive was given to the Scenic Attractiveness at the simulation location.

(2) The significance of affected scenic resources and their distance from the proposed facility

The Pontook Reservoir is state-owned conservation land, and the Moose Path Scenic Byway is a designated scenic Byway, which is a scenic resource with state designation and is supported with public funds. Scenic Byways are specifically valued for their scenic quality in the State of New Hampshire. The visible portions of the Project are approximately 0.90 miles from the simulation location (looking southwest), and 1.91 to 2.45 miles (looking northwest).

(3) The extent, nature, and duration of public uses of affected scenic resources

Public uses at the Pontook Reservoir and Moose Path Scenic Byway include boating, fishing, walking, biking, and driving/motorcycling, and potentially include bus tours and other similar recreational uses. The duration of use of the scenic resource would vary based on mode of travel, but would typically be a few seconds and potentially several hours, depending on the activity.

(4) The scope and scale of the change in the landscape visible from affected scenic resources

The scope and scale of change is considered medium. Although existing views include other surrounding electrical generation facilities, the particular siting of the new NPT corridor and design and character of proposed structures would result in a moderately significant change to the existing landscape. Changes to the landscape would be prominently located and in direct contrast to the existing character, especially when looking northwest.

(5) The evaluation of the overall daytime and nighttime visual impacts of the facility as described in the visual impacts assessment and other relevant evidence

The above review of visual impacts per 301.05(b)(6) criteria finds the Project to result in medium visual impacts. The NPT VIA found the visual impact to the Pontook Reservoir and this portion of the Moose Path Scenic Byway to be medium.

(6) The extent to which the proposed facility would be a dominant and prominent feature within a natural or cultural landscape of high scenic quality or as viewed from scenic resources of high value or sensitivity

The Project would result in visibility of new electrical transmission structures and changes to the forest canopy as a result of ROW clearing from the simulation location, in two different directions. As a result, the Project would be inevitably noticeable in views to the northwest and southwest in the vicinity of the Pontook Reservoir, and together would be considered a prominent feature within the visual landscape. Visibility of the surrounding hillsides are typically of a uniform forest cover, though some forest management may be visible. The elevated position and contrast of the structures with the surrounding natural landscape would result in the transmission structures being somewhat dominant and prominent as seen from the reservoir and scenic Byway.

(7) The effectiveness of the measures proposed by the applicant to avoid, minimize, or mitigate unreasonable adverse effects on aesthetics, and the extent to which such measures represent best practical measures

NPT has proposed mitigation as described above. However, for this particular resource, not all of the proposed measures are accurate or adequate. For instance, the T. J. Boyle simulation to the northwest depicts one galvanized steel lattice structure that would be visible above the intervening forest. Views of a skylined structures will be possible when looking southwest where the proposed new transmission corridor intersects an existing transmission corridor.

Because the proposed structures and corridor clearing would be prominently located on the hillside to the northwest, visibility of the Project would be in an elevated location that would result in contrast of the proposed structures and untreated conductors with the background forest, particularly on days with low cloud cover and high visibility. Other forms of mitigation that would be considered best practical measures at this location, include choosing a corridor that does not place the Project at an elevated location within the forested landscape, and utilizing alternative mitigation measures for the structure types and conductors such as Natina Steel and non-specular conductors (discussed in Section 4.4 of the T. J. Boyle Visual Impact Analysis Report). From the Pontook Reservoir and this portion of the Moose Path Scenic Byway, mitigation as proposed by NPT would be incomplete and would not represent use of all best practical measures.

5. Discussion of Unreasonable Adverse Effect on Aesthetics

The most effective form of mitigation for transmission line projects is the proper siting and alignment of the corridor. In general, siting an aerial transmission line at elevated locations does not follow generally accepted professional standards in avoidance of visual impacts. T. J. Boyle found impacts to this resource unreasonable because the route chosen for the new corridor causes the Project to be prominently visible on the hillside to the northwest and southwest. Alternative route alignment needs to be investigated to lower the overall visibility of the corridor, including possible co-location with an existing 115 kV line that is located near the Project corridor through this area, but is much less visible due to lower siting on prominent ridgelines.

Scenic Resource Name: Interstate 93 (near Mile 72)**Potential Visual Impact:** High**Would the Project Result in Unreasonable Impacts:** Yes**Simulation:** T.J. Boyle NPT DOE VIA Simulations – NH-2 Interstate 93 North at Mile 72.0**Town:** New Hampton, New Hampshire**Field Documentation Notes**Scenic Attractiveness: OrdinaryNumber of Visible Residences: 0Number of Visible Existing Transmission Structures: 9Scenery Interest: Low to Moderate**1. Narrative**

KOP NH-2 is located on Interstate 93 Northbound just south of mile marker 72 in New Hampton, NH. It is representative of views from a 3.5-mile stretch of Interstate 93 in New Hampton where the visible structures are in close proximity and run parallel to the road. There are multiple KOPs from the Interstate in New Hampton and the Project crosses overhead twice. This stretch of Interstate 93 is a scenic resource because it is part of the designated White Mountain Trails Southern Loop (Site 102.45(a)), and is appreciated as a scenic drive (Site 102.45(c) and (d)). At this location, the functional classification of I-93 is a principal arterial interstate with an AADT of 8,984 vehicles.

The immediate view from KOP NH-2 is dominated by the Interstate and nearby low forested hills. The wooden H-frame structures in the existing transmission corridor are approximately 43 feet high and 600 feet away from the viewer. Looking up the cleared corridor, the structures are visible against the sky, however the effect has modest visual impact because the structures are lower than the surrounding forest canopy. The proposal is to introduce galvanized steel lattice structures that are 70 to 80 feet high to the west of the existing wooden H-frame structures, which would remain in place.

2. Site 301.05(b)(6) Criteria used to characterize potential visual impacts**a. Expectations of typical viewer**

Viewers are all traveling on a limited access highway that is a prominent feature of the view. However, northbound travelers are just a few minutes away from entering the White Mountains and expectations for the surrounding scenery would be very high. This would be so whether the traveler was a tourist, on business, or a local resident.

b. Effect on future use and enjoyment

Travelers are expected to enjoy the kinetic experience of driving through a scenic landscape, and the nature of a limited access highway makes it possible to safely view these surroundings. The scale and materials of the existing corridor “fit” within these surroundings. The introduction of much larger industrial-appearing galvanized steel lattice structures would conflict with the existing structures and appear as an intrusion. The result is a negative effect on enjoyment of this view.

c. Extent of proposed facility, including all structure and disturbed areas, visible from the scenic resource

The Project parallels Interstate 93 for approximately 5 miles through Ashland and New Hampton, with the potential for visibility most of the way. At KOP NH-2, northbound drivers will be looking down the corridor at up to 9 very large industrial-appearing galvanized steel lattice towers.

d. The distance of the proposed facility from the scenic resource

Distance to the nearest proposed structure is approximately 846 feet.

e. The horizontal breadth or visual arc of the visible elements of the proposed facility

The horizontal angle of view is approximately 45°, including a visible structure beyond the right side of the photosimulation.

f. The scale, elevation and nature of the proposed facility relative to surrounding topography and existing structures

The proposed galvanized lattice structures would rise above the surrounding trees, and are almost twice the height of the existing wooden H-frame structures. The corridor goes up over a small hill, and northbound travelers would be looking down this corridor and see five or six “skylined” lattice structures.

g. The duration and direction of the typical view of elements of the proposed facility

From KOP NH-2A, northbound travelers facing forward would be looking down the corridor for more than half a mile, or about 30 seconds. Along this 3.5-mile stretch in New Hampton, the Project crosses the highway overhead twice, and is visible from several locations.

h. The presence of intervening topography between the scenic resource and elements of the proposed facility

It would be prominently visible at KOP NH-2 and other locations, though trees would screen or partially the Project at some locations.

Potential Visual Impact Based on Analysis of Factors Under Site 301.05(b)(6)

In summary, at Interstate 93 (near Mile 72), the Project introduces industrial appearing structures that are highly prominent because of their size and the effect of skylining. In contrast, the existing wooden H-frame structures are appropriately scaled and seem to “fit” within the view. We therefore would rate the potential visual impact as high.

3. Mitigation - Site 301.05(b)(10)

The NPT VIA does not indicate any mitigation for this area.

4. Site 301.14(a) Criteria Relative to Findings of Unreasonable Adverse Effect on Aesthetics

(1) Existing character of the area of potential visual impact

Interstate 93 is a divided highway separated by an 80-foot median strip; the surrounded landscape consists of small forested hills. The Pemigewasset River is to the west, but is generally not visible. The existing transmission line uses 43-foot tall wooden H-frame structures, which are shorter than the adjacent trees.

(2) The significance of affected scenic resources and their distance from the proposed facility

At this location, Interstate 93 is part of the White Mountain Trails Southern Loop (Site 102.45(a)), and is appreciated as a scenic drive (Site 102.45(c) and (d)).

(3) The extent, nature, and duration of public uses of affected scenic resources

With an AADT of 8,984 vehicles, KOP NH-2 impacts more people than at almost any other location. The view is directly down the corridor, and the exposure would last approximately 30 seconds. In addition, there are other locations along this stretch of Interstate 93 where the Project would be visible, including two overhead crossings.

(4) The scope and scale of the change in the landscape visible from affected scenic resources

T.J. Boyle considers the scope and scale of change as medium-high. Although the existing view includes a transmission corridor with wooden H-frame structures, their scale and materials contribute to a sense of “fit” within the landscape. The proposed industrial appearing galvanized steel lattice towers are nearly twice as high, and contrast with the surrounding landscape.

(5) The evaluation of the overall daytime and nighttime visual impacts of the facility as described in the visual impacts assessment and other relevant evidence

The above review of visual impacts per 301.05(b)(6) criteria found the Project to result in high visual impacts. The NPT VIA did not evaluate the visual impact from Interstate 93 in New Hampton.

(6) The extent to which the proposed facility would be a dominant and prominent feature within a natural or cultural landscape of high scenic quality or as viewed from scenic resources of high value or sensitivity

The change to the landscape is both dominant and prominent at this location, and there would be similar impacts at other KOPs along this stretch of Interstate 93.

(7) The effectiveness of the measures proposed by the applicant to avoid, minimize, or mitigate unreasonable adverse effects on aesthetics, and the extent to which such measures represent best practical measures

There is no apparent effort to mitigate unreasonable adverse effect on aesthetics at this location.

5. Discussion of Unreasonable Adverse Effect on Aesthetics

T.J. Boyle found impacts to this resource unreasonable because additional mitigation measures would help reduce adverse aesthetic impacts. Additional mitigation that would be considered best practical measures at this location, include alternative structure type, configuration, colors and/or materials to help reduce the industrial character of the proposed Project elements; non-specular insulators and conductors need to be used. Vegetation mitigation must be proposed to help screen visibility of the corridor from the interstate.

Scenic Resource Name: Cross Country Road**Potential Visual Impact:** High**Will the Project Result in Unreasonable Impacts:** Yes**Simulation:** T.J. Boyle NPT DOE VIA Simulations – PE-1 Cross Country Road**Town:** Pembroke, New Hampshire**Field Documentation Notes**Observation Notes: Existing shield wires (to west) have orange marker ballsScenic Attractiveness: OrdinaryNumber of Visible Residences: 4Number of Visible Existing Transmission Structures: 10Scenery Interest: Moderate to High**1. Narrative**

Cross Country Road is paved town road in Pembroke, NH. This mile-long stretch connects Fourth Range Road to Sixth Range Road. The land cover is forested on both sides of the road with scattered rural residences. The landscape character is typical of rural southern New Hampshire, which a typical viewer would consider possesses a scenic quality. The location qualifies as a scenic resource under Site 102.45(c) because it affords a scenic drive that possesses a scenic quality, and Site 102.45(d) because it is maintained with public funds and driving for pleasure is one of the most common recreation activities in New Hampshire.

The existing transmission line ROW is 150 feet wide on either side of the Cross Country Road. The existing 115 kV line uses delta-configured wooden poles that are 65 to 87 feet high; it is proposed that will remain. The conductors are the first indication that a transmission line is present, which are visible approximately 250 or 300 feet down the roadway. The existing structures are not apparent until one is much closer or within the ROW.

The new 345 kV line is located within the existing 150-foot ROW, and uses various types of structures. To the east, just to the right of the simulated view is a 124-foot weathered steel monopole that is approximately 55 feet from the roadway. The simulation shows the proposed galvanized steel lattice towers, that range in height from 120 to 140 feet high. To the west, behind the viewer, 3-pole and H-frame tubular structures that range in height from 65 to 80 feet high.

2. Site 301.05(b)(6) Criteria used to characterize potential visual impacts**a. Expectations of typical viewer**

The typical viewer will be a traveler on Cross Country Road and most viewers will be using it for utilitarian purposes. The area is typical of the rural New Hampshire countryside, and users will expect it to possess a scenic quality.

b. Effect on future use and enjoyment

It is expected that most users will be local residents going about their daily business. The Project will introduce very large industrial-appearing structures into a natural landscape, which will be out of character with the existing conditions in views from Cross Country Road. While it will have limited visibility from the surrounding area, at this location the Project will suddenly loom up before the traveler as they pass through the corridor. Initially local residents may find this view shocking, and latter simply offensive to

see such dominant and incongruous industrial structure. This is in contrast with the structures on the western side of the road, which are much lower, even though the ROW has the same width.

c. Extent of proposed facility, including all structure and disturbed areas, visible from the scenic resource

Visibility is generally limited to the area within and adjacent to the ROW. The adverse effect is due to the shock of the nearest structures looming over the viewer, and the large number of structures receding into the distance as one looks down the corridor.

d. The distance of the proposed facility from the scenic resource

Distance to the nearest proposed structure is approximately 71 feet. The first lattice tower visible in the photosimulation is 817 feet from the viewer.

e. The horizontal breadth or visual arc of the visible elements of the proposed facility

From this viewpoint, the horizontal arc from the nearest structures, which is just to the right of the area visible in the photosimulation, the nearest existing structure is approximately 55°

f. The scale, elevation and nature of the proposed facility relative to surrounding topography and existing structures

The proposed structures are much higher than the surrounding tree canopy, and their industrial appearance is out of keeping with the rural character of the surrounding landscape.

g. The duration and direction of the typical view of elements of the proposed facility

The duration of the view will be a matter of seconds. However, the shock of its appearance will compel the travelers to look and mentally register the meaning of the view.

h. The presence of intervening topography between the scenic resource and elements of the proposed facility

The surrounding area is wooded, and the view is screened until just before the traveler reaches the open ROW.

Potential Visual Impact Based on Analysis of Factors Under Site 301.05(b)(6)

In summary, at Cross Country Road, the Project's industrial-appearing and very high structures will suddenly loom up over travelers. In addition to this shock, these structures are out of character with the surrounding rural landscape. We therefore would rate the potential visual impact as high.

3. Mitigation - Site 301.05(b)(10)

The NPT VIA does not discuss mitigation at this location.

However, the use of much lower H-frame and three-pole structures within the 150-foot corridor with the existing 115 kV line to the north of Cross Country Road is a relatively effective form of mitigation that must be applied to other overhead locations.

4. Site 301.14(a) Criteria Relative to Findings of Unreasonable Adverse Effect on Aesthetics

(1) Existing character of the area of potential visual impact

The area has a wooded rural character typical of much of New Hampshire. Typical viewers will consider that it possesses a scenic quality.

(2) The significance of affected scenic resources and their distance from the proposed facility

The location qualifies as a scenic resource under Site 102.45(c) because it affords a scenic drive that possesses a scenic quality, and Site 102.45(d) because it is maintained with public funds and driving for pleasure is one of the most common recreation activities in New Hampshire.

The nearest new structure is a 124-foot weathered steel monopole that is located 55 feet from the roadway.

(3) The extent, nature, and duration of public uses of affected scenic resources

Visibility is generally limited to the area within and adjacent to the ROW. The adverse effect is due to the shock of the nearest structures looming over the viewer, and the large number of structures receding into the distance as one looks down the corridor.

(4) The scope and scale of the change in the landscape visible from affected scenic resources

The scope and scale of change is high. Although existing views include wooden delta-configured poles, they are in scale and character with the surroundings. The single new 124-foot weathered steel monopole is only 55 feet from the road; the many galvanized steel lattice towers are much higher and out of character with the surrounding mixed residential-forest landscape. From this location, the changes to the landscape are both dominant and prominent.

(5) The evaluation of the overall daytime and nighttime visual impacts of the facility as described in the visual impacts assessment and other relevant evidence

This review of visual impacts per 301.05(b)(6) criteria found the Project to result in high visual impacts. The NPT VIA did not evaluate the visual impact from Cross Country Road.

(6) The extent to which the proposed facility would be a dominant and prominent feature within a natural or cultural landscape of high scenic quality or as viewed from scenic resources of high value or sensitivity

From this location, the Project will be both dominant and prominent; it is out of character with the surrounding mixed residential-forest rural landscape.

(7) The effectiveness of the measures proposed by the applicant to avoid, minimize, or mitigate unreasonable adverse effects on aesthetics, and the extent to which such measures represent best practical measures

Mitigation in the view to the east from Cross Country Road is minimal and not effective. To the west, much lower H-frame and three-pole structures are used in the same 150-foot wide corridor. This corridor design is a relatively effective form of mitigation and must be used at other locations.

5. Discussion of Unreasonable Adverse Effect on Aesthetics

T. J. Boyle found the impacts to Cross Country Road at this location unreasonable because of the contrast created between the scale, height, and industrial character of the proposed structures compared with the existing character of the area and corridor.

To the west, on the other side of Cross Country Road the same 150-foot corridor accommodates lower H-frame and three-pole structures. This corridor design is a relatively effective form of mitigation and must be used at other locations. Best practical measure to be implemented at this location must include non-specular conductors and insulators, and retaining existing or planning new vegetation along the roadside.

Scenic Resource Name: Little Diamond Pond**Potential Visual Impact:** High**Would the Project Result in Unreasonable Impacts:** Yes**Simulation:** T. J. Boyle NPT DOE VIA Simulation - SE-3 Little Diamond Pond, Coleman State Park**Town:** Stewartstown, New Hampshire**Field Documentation Notes**Observation Notes: Shore fishing and boat fishingScenic Attractiveness: DistinctiveNumber of Visible Residences: 0Number of Visible Existing Transmission Structures: 0Scenery Interest: Moderate to High**1. Narrative**

Little Diamond Pond is within Coleman State Park in Stewartstown, NH. Viewpoint SE-3 is located at the northwest corner of Little Diamond Pond approximately 2,000 feet north of the Coleman State Park campground. Coleman State Park offers many outdoor activities, including camping, fishing, boating, cross-country skiing, ATV and snowmobile trails, hiking and picnicking, and cabin/yurt rentals. The park is open year-round, though typically only staffed from Memorial Day to Columbus Day. Other than a beach and boating activities, the view from Little Diamond Pond is of the immediately surrounding rolling forested hillsides. This site was selected because it is within a NH State Park with no existing visibility of transmission infrastructure. The proposed HVDC structures and some new right-of-way clearing would be visible from this location. The State of New Hampshire does not record annual visitation numbers, but the park is noted as a medium sized state park. Coleman State Park is a significant state resource that is visited throughout the year, and therefore has special scenic concern.

2. Site 301.05(b)(6) Criteria used to characterize potential visual impacts**a. Expectations of typical viewer**

The typical viewer at Little Diamond Pond is a visitor to Coleman State Park. Visitors travel specifically to engage with the surrounding resources, the most dominant of which is Little Diamond Pond. Views from the lake consist of generally undeveloped shorelines and surrounding forested hills. Use expectation for the lake is informed by the New Hampshire Lakes Association's Survey, which indicates typical viewers have a high expectation of scenery at New Hampshire water features. This is further discussed in Section 4.2 of the T. J. Boyle Visual Impact Analysis Report.

b. Effect on future use and enjoyment

The Project would introduce a new man-made component within a mostly natural landscape, which would be out of character with the existing conditions in views from Little Diamond Pond. The Project would have a negative effect on the future use and enjoyment of the Pond.

c. Extent of proposed facility, including all structure and disturbed areas, visible from the scenic resource

The Little Diamond Pond simulation illustrates portions of eight (8) new electrical transmission structures and changes to the forest canopy because of ROW clearing that would be visible. This view represents visibility from the northwestern end of the lake where the most visibility would be possible. The Terrain Viewshed indicates there would be visibility from the entirety of the water surface without the benefit of

the surrounding forest. The Vegetated Viewshed indicates visibility from approximately 75 percent of the water surface.

d. The distance of the proposed facility from the scenic resource

Distance to the nearest proposed structure is approximately 1.68 miles.

e. The horizontal breadth or visual arc of the visible elements of the proposed facility

The visual arc or visual angle is approximately 22.5 degrees of the view illustrated in simulation SE-3. This accounts for structures that would be visible for an approximately 1-mile-long stretch of corridor.

f. The scale, elevation and nature of the proposed facility relative to surrounding topography and existing structures

Six of the visible structures would be located along the top of the ridge when looking southeast from portions of Little Diamond Pond. These structures range from 85 to 130 feet in height. Simulation SE-3 indicates that more than half of the height of the structures are likely to be visible from Little Diamond Pond. The upper portions of these structures would be skylined above the tops of the surrounding forest canopy. The siting of the corridor along the ridge top make visibility of the proposed structures very prominent.

g. The duration and direction of the typical view of elements of the proposed facility

Visibility of the Project would be to the southeast from Little Diamond Pond. Activities include fishing, paddling, and other passive recreational uses. Duration of views vary, but can last for the length of the activity. For example, people were fishing from the shore near the KOP location used in the photosimulation. Views of the NPT for these users would be persistent for the duration of that activity at this location.

h. The presence of intervening topography between the scenic resource and elements of the proposed facility

Landform would screen additional structures to both the north and south of structures that would be visible. Additionally, surrounding forest also helps to screen additional structures, portions of the structures that are visible, and views of the cleared ROW. The eight visible structures described above are based on screened views, including the effect of surrounding vegetation. Overall, topography would elevate the appearance of the Project.

Potential Visual Impact Based on Analysis of Factors Under Site 301.05(b)(6)

In summary, we determined that at Little Diamond Pond there is a high expectation for scenery. The Project would introduce an element with industrial character into a landscape that is primarily natural and undeveloped. Within views that would be possible, the Project would be prominent and result in a high level of contrast. There would be a negative degradation to the scenic quality, which would result in a negative effect to the future use and enjoyment of users for Little Diamond Pond. We therefore would rate the potential visual impact as high.

3. Mitigation - Site 301.05(b)(10)

NPT has proposed the use of tubular “weathering steel transmission structures to reduce contrasts in color and form.” (NPT VIA at 1-33)

4. Site 301.14(a) Criteria Relative to Findings of Unreasonable Adverse Effect on Aesthetics

(1) Existing character of the area of potential visual impact

Little Diamond Pond is within Coleman State Park. The lake has minimal development along the shorelines or within the surrounding landscape that is visible from the water surface and surrounding shore. Views from the lake include a predominantly natural landscape that includes wooded shorelines and surrounding hills. During field investigation that T.J. Boyle as part of the DOE VIA, we gave a rating of **Distinctive** to the Scenic Attractiveness at the simulation location.

(2) The significance of affected scenic resources and their distance from the proposed facility

Little Diamond Pond is a great pond within Coleman State Park, which is a scenic resource with state designation supported with public funds. Water resources are valued for their scenic quality in the State of New Hampshire, and there are a limited number of ponds and lakes with little or no development along the shorelines. The closest visible portions of the Project are approximately 1.75 miles from the KOP.

(3) The extent, nature, and duration of public uses of affected scenic resources

Public uses at Little Diamond Pond include shore fishing, non-motorized boat fishing, non-motorized boating, swimming, and hiking. These are all generally considered passive recreational uses. The duration of use varies, but would typically be longer than a few minutes and up to a full day.

(4) The scope and scale of the change in the landscape visible from affected scenic resources

The scope and scale of change is high. Although visible components of the Project are distant and to some extent partially screened, the change occurs within a visual landscape that is in an almost entirely natural state. Changes to the landscape are both dominant and prominent.

(5) The evaluation of the overall daytime and nighttime visual impacts of the facility as described in the visual impacts assessment and other relevant evidence

This review of visual impacts per 301.05(b)(6) criteria finds the Project to result in High visual impacts. The NPT VIA found the overall visual impact from Coleman State Park to be medium.

(6) The extent to which the proposed facility would be a dominant and prominent feature within a natural or cultural landscape of high scenic quality or as viewed from scenic resources of high value or sensitivity

The Project would result in visible portions of eight (8) new electrical transmission structures and changes to the forest canopy as a result of ROW clearing to be visible from Little Diamond Pond as reviewed from the KOP. A significant portion of 4 of these structures would be visible above the distant ridgeline on which they are located, therefore ‘skylining’ these structures. As a result, the Project would be inevitably noticeable in views to the southeast and would be considered a very prominent feature within the visual landscape. Existing views to the southeast are predominantly of a natural landscape. Visibility of the surrounding hillsides are of a uniform forest cover. The elevated position and high level of contrast with surrounding features would result in the transmission structures also becoming a dominant feature of the landscape in views to the southeast.

(7) The effectiveness of the measures proposed by the applicant to avoid, minimize, or mitigate unreasonable adverse effects on aesthetics, and the extent to which such measures represent best practical measures

NPT has proposed the use of tubular “weathering steel transmission structures to reduce contrasts in color and form” (NPT VIA at 1-33). However, for this particular location, this mitigation measure would result in greater contrast as opposed to lattice towers. The most prominent visibility of the Project from Little Diamond Pond would be the transmission structures ‘skylined’ above the background ridgeline. The dark color and concentrated bulk of the weathered steel structures would result in more contrast with the background sky, particularly on days with low cloud cover and high visibility. From Little Diamond Pond,

mitigation as proposed by NPT is ineffective and the Applicant has not implemented best practical measures

5. Discussion of Unreasonable Adverse Effect on Aesthetics

The most effective form of mitigation for transmission line projects is the proper siting and alignment of the corridor. In general, siting an aerial transmission line along a ridgeline does not follow best practices in avoidance of visual impacts. Our review of the Project found that it introduces a manufactured element, with industrial characteristics into a scenic and natural landscape. It also found that the Project would result in a high contrast to the existing conditions and would be both, a prominent and dominant element in the visual landscape. Little Diamond Pond is part of Coleman State Park. Users of the park are in part drawn to the scenic attractiveness of the setting. Degradation to the scenic setting would negatively affect the future use and enjoyment of Little Diamond Pond according to results from the New Hampshire Lakes Association's Survey and based on responses collected during the Counsel for the Public's Community Workshops. NPT needs to relocate the Project as to be not visible, or to be significantly less visible and prominent from Little Diamond Pond. Burial of the line at this location would likely avoid impacts, but were not discussed by NPT. Without additional justification for the location of the new corridor at this location, the Project would result in an unreasonable adverse impact to the aesthetics at Little Diamond Pond.

Scenic Resource Name: Cohos Trail**Potential Visual Impact:** High**Will the Project Result in Unreasonable Impacts:** Yes**Simulation:** T.J. Boyle NPT DOE VIA Simulations – ST-4 Cohos Trail**Town:** Stark, New Hampshire**Field Documentation Notes**Scenic Attractiveness: OrdinaryNumber of Visible Residences: 0Number of Visible Existing Transmission Structures: 4Scenery Interest: Moderate to High**1. Narrative**

The Cohos Trail is a collection of formal and informal routes that measure approximately 165 miles in total length, connecting the northern and southern ends of Coos County. It begins at Notchland, near Crawford Notch State Park and proceeds north to the Canada-US Border at the southern edge of Quebec. The location specifically being reviewed here is in Stark, NH where the Project crosses the Cohos Trail, slightly north of NH Route 110. At this location, the trail transitions from proceeding through the White Mountain National Forest and begins its way northward through the Nash Stream Forest. “In a very real sense, the Nash Stream Forest is the heart of The Cohos Trail. It is two-fifths of the way between the southern terminus and the northern terminus of the trail. It is the first great stretch of real estate that is not a part of the White Mountains [sic] National Forest, and it is not part of the expanse of private lands to the north that are owned largely by timbering firms.”²⁷

2. Site 301.05(b)(6) Criteria used to characterize potential visual impacts**a. Expectations of typical viewer**

The typical viewer is a hiker on the Cohos trail. Generally, there is a high expectation for scenic quality when engaging in hiking and backpacking activities, particularly on a back-country trail. Additionally, the location where the NPT crosses the Cohos trails is within the Nash Stream Forest. There is also a high expectation of scenic quality in conservation lands.

b. Effect on future use and enjoyment

Although the Project will be located within an existing transmission line corridor, the Project proposes to significantly change the character of the corridor. An existing single 115 kV transmission line that consists of wooden H-frame structures that range in height between 43 feet to 47.5 feet, will be relocated and reconfigured and a new HVDC line will be added. The new structure will be galvanized steel lattice and monopole structures and will range in height from 70 feet to 92.5 feet. The change in character will degrade the existing scenic quality. The Project will have a negative effect on the future use and enjoyment of the Cohos Trail at this location.

c. Extent of proposed facility, including all structure and disturbed areas, visible from the scenic resource

In the direction of photo simulation ST-4, west, views will be possible of eight structures including four new HVDC structures and four relocated 115 kV structures. This equates to four parallel spans of each

²⁷ The Cohos Trail Association, *The Cohos Trail – Third Edition*, Create Space, USA, 2014, p. 134.

transmission line or approximately 1,900 feet. The entirety of structures will be visible in this direction. East of the trail, views will be possible of 6 structures, 3 of each type, including one set of structures almost immediately along the trail edge. This represents a total of 2 spans for each line, or approximately 1,065 feet. The furthest structures from the trail to the east will be partially screened by landform.

d. The distance of the proposed facility from the scenic resource

The NPT corridor directly crosses the Cohos Trail. In the direction of photo simulation ST-4d, the closest proposed HVDC structure is approximately 460 feet and the closest 115 kV structure is approximately 475 feet from the viewer. In the opposite direction, the closest HVDC structure will be approximately 90 feet and the closest 115 kV structure is approximately 44 feet from the viewer.

e. The horizontal breadth or visual arc of the visible elements of the proposed facility

The horizontal breadth or visual arc of visible elements will vary based on viewer location. When entering the corridor crossing from either the north or south, the visual arc will be approximately 180 degrees. When standing at the center of the corridor, the visual arc could be considered 360 degrees.

f. The scale, elevation and nature of the proposed facility relative to surrounding topography and existing structures

The existing wooden H-frame structures vary in height from 43 feet to 47.5 feet. The proposed structures will be 70 feet to 92.5 feet, which at many locations is approximately twice the height of the existing structures. While the existing H-frames appear to be slightly lower than the surrounding forest which line the edges of the corridor, the new structures will be significantly taller than surrounding vegetation. The existing structures consist of wooden materials, and the wooden poles are somewhat compatible with the surrounding trees. The proposed transmission structures will be galvanized steel, including structures that utilize lattice construction. These materials and the lattice configuration will be in stark contrast to the natural surroundings along the corridor.

g. The duration and direction of the typical view of elements of the proposed facility

For a hiker that simply hikes through this location without stopping, duration would be slightly less than one minute. However, when backpacking, openings in forest cover are many times a welcome break, especially when it is sunny on a cool day and the duration could last for the extent of the rest. Views of the Project will vary, but will generally pull attention to the east and west along the corridor.

h. The presence of intervening topography between the scenic resource and elements of the proposed facility

The configuration of the corridor cut within the forest will concentrate views along the corridor when hikers are within the corridor crossing. Views will be generally screened when outside the corridor, although some additional

Potential Visual Impact Based on Analysis of Factors Under Site 301.05(b)(6)

In summary, at Cohos Trail, the Project will result in a dramatic change in character along the corridor. There are typically high expectations for scenic quality for activities such as hiking and back packing and within conservation areas. The scale, elevation and nature of the proposed facility will highly contrast with the existing surroundings. We therefore would rate the potential visual impact as high.

3. Mitigation - Site 301.05(b)(10)

The NPT VIA notes that mitigation at the Cohos Trail within the Nash Stream Forest, includes that “(t)he project has been redesigned to minimize the clearing required from the installation of the NPT

project,”(NPT VIA at 1-5), use of an existing 115 kV transmission line corridor, which eliminates the need for a new corridor and also “matching the spacing of transmission structures so they appear as ordered pairs.” (NPT VIA at 1-97)

4. Site 301.14(a) Criteria Relative to Findings of Unreasonable Adverse Effect on Aesthetics

(1) Existing character of the area of potential visual impact

Entering the Nash Stream Forest on the Cohos Trail from Percy Road, the trail begins a gentle ascent. The area is forested with mostly mature deciduous vegetation. Approximately 900 feet along the trail, it crosses the existing 115 kV transmission corridor. The corridor is vegetated along both sides with mostly mature deciduous vegetation. The corridor itself is vegetated with mostly herbaceous vegetation, but also some small shrubs and saplings. The existing transmission line includes wooden H-frame structures that range in height between 43 feet to 47.5 feet.

(2) The significance of affected scenic resources and their distance from the proposed facility

The Cohos Trail is an approximately 165 mile long trail, within the Nash Stream Forest at this location. There was significant emphasis given to the preservation of the Nash Stream Forest in the late 1980's. The trail itself was first envisioned almost 40 years ago and the full extent has only recently been formalized.

(3) The extent, nature, and duration of public uses of affected scenic resources

This resource will include uses such as hiking and backpacking. As noted above, hikers may choose to stop at this location to take advantage of the break in the canopy on a sunny day. Someone that simply hikes through the corridor would have visibility slightly less than one minute.

(4) The scope and scale of the change in the landscape visible from affected scenic resources

The scope and scale of change is high. Although existing views include existing electrical transmission facilities, changes to the configuration of the corridor as a result of the Project will be significant. In particular, the substantial change in height of proposed structures, compared to the existing structures, the change from wooden materials to galvanized steel, and the use of lattice construction for the HVDC structures, will significantly change and degrade the character of the existing transmission corridor.

(5) The evaluation of the overall daytime and nighttime visual impacts of the facility as described in the visual impacts assessment and other relevant evidence

This review of visual impacts per 301.05(b)(6) criteria found the Project to result in high visual impacts. The NPT VIA found the visual impact from Cohos Trail to be medium.

(6) The extent to which the proposed facility would be a dominant and prominent feature within a natural or cultural landscape of high scenic quality or as viewed from scenic resources of high value or sensitivity

The location of the existing corridor is well sited within a forested area. The surrounding forest will help to screen the Project from the Cohos Trail, except when in close proximity or actually within the corridor crossing. When viewers are within the corridor, the Project will be very prominent, which will be emphasized by the current design. Project elements will also be dominant, and in particular the set of structures that will be located immediately east of the trail.

(7) The effectiveness of the measures proposed by the applicant to avoid, minimize, or mitigate unreasonable adverse effects on aesthetics, and the extent to which such measures represent best practical measures

Utilization of an existing transmission corridor to avoid a new transmission corridor near to this location helps to minimize public exposure to transmission infrastructure. Coordination of structures between the two lines, also help to create a more organized character and avoids the corridor from appearing cluttered. However, these measures by themselves do not represent best practical measures. Use of single pole weathering steel structures for the HVDC line, such as being proposed at other locations within the area would help reduce the contrast of the Project. Use of wooden single pole structures would help the 115 kV line be more compatible with the existing character of the corridor. Additionally, if additional clearing is possible and would result in lower structure heights, the reduction in clearing is not an effective measure to minimize impacts. Lastly, use of an alternative structure configuration for the 115 kV line, such as a delta configuration would help reduce the height of these structures.

5. **Discussion of Unreasonable Adverse Effect on Aesthetics**

Overall, the dramatic change in character as a result of the proposed configuration of the Project was found to result in a high visual impact. While duration may be limited for viewers using the Cohos Trail and accessing the Nash Stream Forest, these are both important resources that have statewide and even greater significance. Proposed mitigation would not represent best practical measures. For these reasons, we find that adverse visual impacts at this location would be unreasonable.

Scenic Resource Name: Peaked Hill Road**Potential Visual Impact:** High**Will the Project Result in Unreasonable Impacts:** Yes**Simulation:** T.J. Boyle NPT SEC Simulations – BR-1 Peaked Hill Road**Town:** Bristol, New Hampshire**Field Documentation Notes**Observation Notes: Rolling landscape, line parallels the road before the crossingScenic Attractiveness: NoteworthyNumber of Visible Residences: 9Number of Visible Existing Transmission Structures: 7(20 structures in both directions)Scenery Interest: Low to Moderate**1. Narrative**

Peaked Hill Road is a paved town road in Bristol, NH, and runs roughly southwest-northeast in the vicinity of the Project. This road is within the Lakes Region of New Hampshire. The road is accessible year-round, and provides access to residential uses on either side of the road. In the area where the proposed Project is visible, the landscape is characterized by forested roadsides, residential homes, adjacent Worthen Conservation Area, and the existing transmission corridor crossing. This area is also the site of the historic Locke neighborhood. According to the Preservation Company, “the transmission line right-of-way passes directly through the Locke Neighborhood (BRIS10), a group of related historic properties that forms a potential historic district and nearby farm at 171 Jeffers Road (BRIS51), both of which may be adversely affected.”²⁸ The town of Bristol also has approved and adopted Peaked Hill Road as a scenic road in the town of Bristol.^{29,30} This location is a roadway with a scenic quality that is supported with public funds (Site 102.45(c) and (d)), and offers a view of the surrounding historic properties. The proposed HVDC structures and new right-of-way clearing would be visible from the road as it crosses the corridor. There is no AADT information collected for Peaked Hill Road at this location. The T. J. Boyle viewpoint location is within the corridor crossing. Peaked Hill Road is a locally designated scenic road within an area that possesses a scenic quality, including nearby historic residential uses, and is supported by public funds.

2. Site 301.05(b)(6) Criteria used to characterize potential visual impacts**a. Expectations of typical viewer**

The typical viewer along Peaked Hill Road is a motorist traveling by vehicle or motorcycle, a pedestrian or a bicyclist. Travelers utilize the road for various reasons, including specifically appreciating scenery along the scenic road as well as simply utilizing the road to travel from one location to another. Views from this portion of the road include low-density residential, some of which is historic. Because this road is a locally designated scenic road and is adjacent to low-density residential uses and the existing transmission corridor, the expectations for the typical viewer at this location are considered medium-high.³¹ Use expectation for this location is also informed by the Section 4.2 of the T. J. Boyle Visual Impact Analysis Report and results from the Community Workshops, which indicates that scenery is an important factor for this roadway.

²⁸ http://www.nhsec.nh.gov/projects/2015-06/application/Volume-XVI/pages_from_2015-06_2015-10-19_nptlc_psnh_app_18_npt_project_assessment_historic_properties_oct2015_part1_pgs_501-1000.pdf at Bristol p. 3, PDF p. 447

²⁹ <http://www.townofbristolnh.org/Departments/Highway/highway.html>

³⁰ <http://www.gencourt.state.nh.us/rsa/html/XX/231/231-157.htm>

³¹ The Appendix F – Scenic Resource Evaluation Form for Peaked Hill Road indicates a viewer expectation of medium, which has been revised here to medium-high due to the local scenic road designation.

b. Effect on future use and enjoyment

The Project would introduce a new transmission line with large structures into the corridor. The proposed structures would be a mix of both weathering steel monopoles and galvanized steel lattice. The larger structures with different materials and configuration would be out of character with the existing conditions, which includes wooden 115 kV H-frame and single-pole distribution lines within the ROW. Because the proposed transmission infrastructure crosses the road and the landscape that is visible from this crossing, the Project would have a negative effect on the future use and enjoyment of this scenic roadway.

c. Extent of proposed facility, including all structure and disturbed areas, visible from the scenic resource

The T. J. Boyle simulation illustrates new electrical transmission infrastructure that would be visible in close proximity to a road and within the context of nearby residences, some of which are historic. The Terrain Viewshed indicates there would be visibility from all of the roadway through this area of Bristol without the benefit of the surrounding forest screening. The Vegetated Viewshed indicates intermittent visibility through this area where vegetation is cleared along the roadway, in particular near the corridor. The corridor also parallels the road southwest of the crossing, and would be visible under the roadside trees for a distance of approximately 1,600 feet.

d. The distance of the proposed facility from the scenic resource

From the road crossing, distance to the nearest proposed structure is approximately 215 feet to the southwest. The distance to the nearest proposed structure visible in the simulation (looking northeast) is approximately 365 feet.

e. The horizontal breadth or visual arc of the visible elements of the proposed facility

The visual arc or visual angle is approximately 18.5 degrees of the view illustrated in the T. J. Boyle simulation, but may be considered larger as the line crosses the road and proceeds south.

f. The scale, elevation and nature of the proposed facility relative to surrounding topography and existing structures

The visible structures would be located in the ROW or along the length of the corridor when traveling southwest of the road crossing, where the ROW parallels the road. Structures would be visible in both directions along the corridor, including approximately 4 new weathering steel or galvanized steel lattice structures to the north of the crossing, and up to 4 new weathering steel or galvanized steel lattice structures to the south of the crossing. The proposed structures in this area range from 70' to 100' in height, and would not match the materials or configuration of the existing structures in the corridor. The simulation indicates that several entire structures would be visible from the roadway. Most of the structures visible from this area would be skylined above the top of the surrounding and background forest canopy. The structures closest to the road would be somewhat prominent, and would contrast with the skyline.

g. The duration and direction of the typical view of elements of the proposed facility

Visibility of the Project and proposed vegetative clearing would be to the north and south from the crossing. Because varying forms of transportation may be used (e.g. walking, running, biking, driving and/or motorcycling), duration of views would vary, but would typically be several seconds each time travelers pass under the crossing, and several seconds of additional exposure is expected for 1,600 feet southwest of the crossing.

h. The presence of intervening topography between the scenic resource and elements of the proposed facility

Landform is expected to screen additional structures to the north and south beyond rises of land or changes in corridor alignment in each direction. The surrounding forest would help to screen structures and views of the cleared ROW from other locations along the road, with the exception of the area southwest of the crossing. The areas of visibility and associated structures described above are based on screened views, including the effect of surrounding vegetation. The extent of proposed clearing, visibility of structures from the road and proposed structure heights would somewhat elevate the appearance of the Project.

Potential Visual Impact Based on Analysis of Factors Under Site 301.05(b)(6)

In summary, at Peaked Hill Road we determined that there is a medium-high expectation for scenery. The Project would introduce an element with industrial character into parts of a landscape that are scenic, residential and historic in nature, and where the existing corridor does not currently include structures of the varied material, height, number and configuration that would result from the proposed Project. Because of the visibility from the road and variable design of the structures, the proposed structures would be somewhat prominent and potentially result in a high level of contrast with the existing conditions in the corridor and area. There would be a negative degradation to the scenic quality of the landscape, which would result in a negative effect to the future use and enjoyment of users of Peaked Hill Road. We therefore would rate the potential visual impact as high.

3. Mitigation - Site 301.05(b)(10)

The NPT VIA does not specifically cite mitigation for the area around Peaked Hill Road, though general statements about mitigation in the Subarea 4 Impact summary (NPT VIA, p. 4-5) note that the proposed transmission line follows an existing transmission corridor. Although not stated in the NPT VIA, the use of weathering steel structures appears to be a mitigating measure for the structures closest to Peaked Hill Road.

4. Site 301.14(a) Criteria Relative to Findings of Unreasonable Adverse Effect on Aesthetics

(1) Existing character of the area of potential visual impact

Peaked Hill Road is in the Lakes Region of New Hampshire and accesses low-density residential, some of which is historic, and is a locally designated scenic road. The surrounding landscape is generally characterized by forest and low-residential uses with occasional minor agricultural fields. During field investigation that T. J. Boyle performed as part of the DOE VIA, we gave rating of Noteworthy to the Scenic Attractiveness at the simulation location.

(2) The significance of affected scenic resources and their distance from the proposed facility

Peaked Hill Road was approved as a local scenic road in 1975, and is a roadway with a scenic quality that is supported with public funds (Site 102.45(c) and (d)). This location is also the site of the historic Locke Neighborhood as described above. The visible portions of the Project are adjacent to the road at the crossing, and are visible along the corridor to the northeast and southwest, as well as along the road as it proceeds southwest from the crossing.

(3) The extent, nature, and duration of public uses of affected scenic resources

Public uses along Peaked Hill Road include walking, biking, and driving/motorcycling. The duration of use of the scenic resource would vary based on mode of travel, but would typically be a several seconds or more. Due to the residential nature of the area, views of the corridor would be a regular occurrence for those who live in the area, and would be visible for visitors specifically enjoying the scenic road.

(4) The scope and scale of the change in the landscape visible from affected scenic resources

The scope and scale of change is considered high. Although existing views include transmission structures in the existing corridor, the different and variable design, height and character of proposed structures and the proximity to the road would result in a significant change to the existing landscape, especially for regular users of the road. Changes to the landscape would be prominent and in contrast to the existing character of the views.

(5) The evaluation of the overall daytime and nighttime visual impacts of the facility as described in the visual impacts assessment and other relevant evidence

The above review of visual impacts per 301.05(b)(6) criteria finds the Project to result in high visual impacts. The NPT VIA included but did not assess this resource.

(6) The extent to which the proposed facility would be a dominant and prominent feature within a natural or cultural landscape of high scenic quality or as viewed from scenic resources of high value or sensitivity

The Project would result in new and taller electrical transmission structures being visible from the road. These structures would be visible at or near the road crossing, as well as southwest of the crossing where the existing ROW parallels the road. As a result, the Project would be inevitably noticeable in the vicinity of the corridor crossing, and would be considered a prominent feature within the visual landscape. The proposed size, variable material and design, and number of new structures would be somewhat dominant and prominent within the view, and would contrast from the existing conditions.

(7) The effectiveness of the measures proposed by the applicant to avoid, minimize, or mitigate unreasonable adverse effects on aesthetics, and the extent to which such measures represent best practical measures

NPT has not specifically proposed mitigation at this location, although a general statement about mitigation in the Subarea 4 Impact summary (NPT VIA, p. 4-5) that would apply to this location is noted above. Although not stated in the NPT VIA, the use of weathering steel structures appears to be a mitigating measure for the structures closest to Peaked Hill Road.

For this particular resource, these general measures are inadequate. For instance, although the existing corridor is being utilized for the NPT project, the proposed Project would introduce much taller structures of different materials and design than currently exists in the corridor. While the weathering steel structures adjacent to the road would somewhat mitigate the Project, the galvanized steel lattice structures beyond would promote a sense of discontinuity within the corridor, and most of the proposed structures would be skylined.

The number and scale of structures visible from the road would significantly increase, and would not match the existing character of the corridor. Other forms of mitigation that would be considered best practical measures at this location, include utilizing consistent structure types and configuration, using non-specular conductors (discussed in Section 4.4 of the T. J. Boyle Visual Impact Analysis Report), and potentially incorporating vegetative mitigation. From Peaked Hill Road, mitigation as proposed by NPT would be inadequate and would not represent use of all best practical mitigation measures.

5. Discussion of Unreasonable Adverse Effect on Aesthetics

T. J. Boyle found impacts to this resource unreasonable because additional mitigation measures would help reduce adverse aesthetic impacts. The variation of the HVDC structures visible from the roadway contributes to a discontinuity of structure type and materials within the corridor. Mitigation that would be considered best practical measures include the potential use of vegetation mitigation, non-specular conductors, and changing all visible HVDC structures to monopoles.