

**Environmental Assessment
for the
New Asheville – Enka 115kV West Line Crossing
of the
Blue Ridge Parkway Corridor, Buncombe County, NC
on the property of the
National Park Service**



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Summary

Carolina Power & Light Company d/b/a Progress Energy Carolinas (PEC) proposes to design, build, and operate a new 115kV overhead electric transmission line to ensure continuation of reliable electric service to customers in western North Carolina. The new 115kV transmission line would extend generally north and west approximately 7.6 miles from an existing substation at PEC's Asheville Generating Plant (located at Skyland south of Asheville) to PEC's existing Enka Substation (located off Sardis Rd). The entire proposed project area is located in Buncombe County, North Carolina. The new line would cross the Blue Ridge Parkway (BRP) south of Asheville, between NC Highway 191 (Brevard Road) and Interstate 26 near French Broad River mile 158 and near BRP Milepost 393. The proposed line would run parallel and adjacent to the existing transmission line. This proposed addition is required to ensure continued reliability of the transmission system, which is experiencing growing demand for power by the citizens, businesses, and industries of the region.

This Environmental Assessment (EA) discusses the portion of the transmission line and easement that is proposed to traverse the National Park Service's (NPS) BRP. The proposed transmission line and easement would cross BRP land perpendicularly for approximately 885 linear feet. A 43-foot wide proposed right-of-way (ROW) corridor west of and adjacent to the existing transmission line was reviewed and evaluated for the purposes of this assessment. Impact topics were reviewed for the assessment area and four impact topics were selected for further review. These topics are: vegetation; cultural landscapes; viewshed; visitor activities; and transportation. These topics are carried through the EA and further discussed within the "Affected Environments" section (Section 5.0) and the "Environmental Consequences" section (Section 6.0). Neither of the alternatives analyzed in this EA would result in major environmental impacts or impairment to park resources or values.

Public Comment

If you wish to comment on the EA, you may do so online at the NPS website "Planning, Environment, and Public Comment" <http://parkplanning.nps.gov>, or you may mail comments to Suzette Molling, Environmental Protection Specialist; Blue Ridge Parkway; 199 Hemphill Knob Road; Asheville, North Carolina 28803.

This Environmental Assessment will be on public review for 30 days. Our practice is to make comments, including names, home addresses, home phone numbers, and email addresses of respondents, available for public review. Individual respondents may request that we withhold their names and/or home addresses, etc., but if you wish to consider withholding this information you must state this prominently at the beginning of your comments. Commentators using the website can make such a request by checking the box "**keep my contact information private.**" Such requests will be honored to the extent allowable by law.

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1.0 Purpose Of and Need for Action

The proposed Asheville-Enka 115kV line needs to run from the Asheville Generating Plant to the Enka Substation at Sardis Road. To accomplish this requires traversing a north-westerly corridor flanked by the Pisgah National Forest to the west and the Biltmore Estate National Historic Landmark to the east. The BRP runs east-west across the width of this corridor, therefore requiring all route options to cross it.

2.0 Background

The NPS is considering PEC's proposal to build, operate, and maintain a new 115kV overhead electric transmission line across an 885-foot section of the BRP in Buncombe County, North Carolina (Figure 1). The new 115kV transmission line would extend generally north and west approximately 7.6 miles from an existing substation at PEC's Asheville Generating Plant (located at Skyland south of Asheville) to PEC's existing Enka Substation (located off Sardis Rd). The new line would parallel PEC's existing double-circuit lattice steel tower line across the BRP. This action is being considered because electric demand in Buncombe County and the surrounding area, together with the need to ensure continued reliability of the transmission system that serves this area, requires PEC to initiate a regional enhancement to the electrical grid.

Per Section 3 (Purpose and Need for the Project) of the attached "Probable Visual Effects Analysis" (Appendix A):

PEC's continuous assessment of its transmission network is governed by North American Electric Reliability Corporation (NERC). NERC has been mandated by the Federal Energy Regulatory Commission (FERC) to develop and enforce reliability standards. FERC declared NERC the Electric Reliability Organization under Section 215 of the Federal Power Act. NERC Reliability Standards became mandatory as of June 18, 2007, and NERC has the authority to fine violators up to \$1-million per day per violation. The NERC Transmission Planning Standards are broken into four categories as listed below and are defined by element outages (transmission lines, transformers, generators).

1. TPL-001 System Performance under Normal Conditions (No Contingency) (Category A).
2. TPL-002 System Performance Following Loss of a Single Bulk Electric System Element (Category B).
3. TPL-003 System Performance Following Loss of Two or More Bulk Electric System Elements (Category C).
4. TPL-004 System Performance Following Extreme Events (Category D).

TPL-001 (Category A) means that an electrical transmission network with all elements in-service should remain stable and performs in such a manner that no applicable equipment capacity ratings are violated (no overloads). TPL-002 (Category B) requires that a transmission network be able to lose a single element

(transformer, line or generator) and maintain network stability while not violating any equipment capacity ratings. TPL-003 requires a transmission network to be able to lose two transmission elements at any given time and still maintain network stability while not violating any equipment capacity ratings. TPL-004 (Category D) requires an assessment of extreme events (e.g., loss of a tower line with three or more circuits, loss of all generating units at a station, loss of a substation or switching station, etc.).

PEC's electrical load projections indicate that by the winter of 2010 with one unit at the Asheville Generating Plant off line, one of the two 230/115kV transformers at the Asheville Generating Plant will overload with the loss of the other 230/115kV transformer. To eliminate the transformer overload condition, PEC must upgrade the existing Asheville–Enka 115kV West Line to 230kV. The existing Asheville–Enka East and West 115kV Lines are co-located (i.e., the two single-circuit lines share common towers) within a common ROW. Since the existing 115kV lines were originally built to 230kV standards, the voltage conversion of the West Line from 115kV to 230kV can be accomplished by simply re-routing the existing West circuit into the 230kV switchyards at each end of the line. Minimal transmission line work is required to convert the existing 115kV west circuit to 230kV. The voltage conversion will increase the overall electrical system reliability and voltage profile in PEC's Western Region.

Load projections, predicated on the assumption that the Asheville–Enka West 115kV Line has been converted to 230kV, indicate that by the winter of 2012-13, with all generation online at the Asheville Generating Plant, the loss of a common structure supporting the Asheville–Enka 115/230kV Lines will cause the Oteen–West Asheville 115kV Line to overload. The impact of this occurrence would be extremely severe and would create reliability issues throughout PEC's Western Region, which would result in curtailment of significant amounts of firm customer load. Transmission system load flow studies indicate that this potential severe occurrence can be eliminated by building a new single-circuit 115kV line that will run from the Asheville Generating Plant to the Enka Switching Station to replace the existing 115kV line that will be converted to 230kV. Another primary driver for the construction of a new 115kV line is that when one of the existing Asheville–Enka 115kV lines (the West Line) is converted from 115kV to 230kV in 2010, the currently low generation stability margin at the Asheville Generating Plant will be reduced. The stability of the units at the Asheville Generating Plant is also governed by NERC Transmission Reliability Standards. Without the construction of the new 115kV line, there are events that could cause all of the units at the Asheville Generating Plant to go unstable and trip offline to protect generation units. If this should occur, there would be an unacceptably high probability that the entire customer load in PEC's Western Region would have to be curtailed.

In conclusion, the best solution to eliminate both the line overload condition and generator stability issues is to construct a new 115kV transmission line between the Asheville Generating Plant and the Enka Switching Station. The addition of this new line will prevent the overload condition on the Oteen–West Asheville 115kV Line by creating a new path for the transfer of electrical power from the Asheville

Generating Plant to the load center of the Asheville area. Additionally, construction of the new 115kV line will help maintain an acceptable generation stability margin at the Asheville Generating Plant. The proposed line is the most feasible and effective solution and will enable PEC to meet all of the NERC Reliability Standards in a safe, efficient manner while maintaining electrical service reliability for PEC customers in Western North Carolina.

2.1 Other Projects in the Asheville Corridor

A search of the NPS's Planning, Environment, and Public Comment database and NCDOT State Transportation Improvement Program (STIP) maps yielded four projects in or near the Asheville corridor of the BRP.

Projects indicated as active by the NPS are as follows:

1. Replace Mt. Pisgah Wastewater Treatment System
2. Repair Active Landslide and Pavement Failure (MP 400.8) – Phase III
3. Blue Ridge Parkway Guardrail Replacement and Installation

Project indicated on STIP maps is as follows:

1. NC 191 (Brevard Road), from NC 280 to NC 112 (Sardis Road), widen to multi-lanes. This project remains unfunded; no timeline or schedule is indicated.

The proposed PEC overhead transmission line would continue beyond of BRP property. After the proposed crossing of the BRP, the transmission line would continue southeast to the Asheville Generating Plant at Lake Julian and northwest to the Enka Substation at Sardis Road.

The proposed project as described in this EA should not affect on-going or proposed projects in or near the Asheville corridor of the BRP. At the time of this EA, PEC is unaware of additional projects in the area.

2.2 Purpose and Significance of the Blue Ridge Parkway

The legislated purpose of the BRP, under the Act of June 30, 1936, is to link Shenandoah National Park in Virginia and Great Smoky Mountains National Park in North Carolina and Tennessee by way of a recreation-oriented motor road intended for public use and enjoyment. The BRP extends 469 miles through the Blue Ridge, Black, Great Craggy, Great Balsam, and Plot Balsam Mountains. The BRP is known for spectacular mountains and valley vistas, quiet pastoral scenes, sparkling waterfalls, colorful flowers and foliage displays, and interpretation of mountain history and culture. The BRP's location was selected to provide the best in a variety of scenic, historic, and natural features that evoke the regional image of the central and southern Appalachian Mountains. Designed for driving, the BRP provides visitors with quiet, leisure travel, free from commercial traffic and the congestion of high-speed highways. As its All-American Road status in North Carolina and Virginia State Scenic Byway status indicate, it is one of the most diverse and high quality recreational driving experiences in the world. To maximize scenic views and give visitors the impression that they are in a park with boundaries to the

horizon, the BRP was located in mountainous terrain that roads would normally have avoided.

2.3 Scoping History

The Council on Environmental Quality (CEQ 1978) guidelines for implementing the National Environmental Policy Act and the National Park Service National Environmental Policy Act guidelines contained in Director's Order # 12: *Conservation Planning, Environmental Impact Analysis and Decision Making Handbook* (National Park Service, 2001b) require scoping. Scoping is an early and open process completed by the National Park Service to:

- Determine important issues.
- Eliminate issues that are not important or relevant.
- Identify relationships to other planning efforts or documents.
- Define a time schedule of document preparation and decision-making.
- Define purpose and need, agency objectives and constraints, and the range of alternatives.

On June 21, 2008, PEC sent initial contact letters to resource agencies including NC Wildlife Resources Commission (WRC), the US Forest Service (USFS), the US Fish and Wildlife Service (FWS), NC Department of Transportation (NCDOT), and the NC Natural Heritage Program (NHP) informing them of the proposed Asheville – Enka 115kV line and its purpose. Response letters were received from the WRC, USFS, FWS, NCDOT, and NHP. Copies of these letters can be found in Appendix B. PEC also followed this correspondence with field and site visits with the NPS, Buncombe County, City of Asheville, NCDOT, and the French Broad River Metropolitan Planning Organization to identify potential impacts and additional areas of concern. These meetings took place between June and July of 2008.

During June to October of 2008 potential route alternatives for the new Asheville – Enka 115kV line were developed and criteria established for evaluating each segment of the alternatives (each of which included an option that crossed the BRP). The public scoping process was initiated with letters sent to property owners on November 5, 2008 whose property coincided with one or more of the segments of the alternatives. The letter provided a map of the proposed route alternatives and informed property owners of a forthcoming information workshop. Additional information for the proposed project was listed on PEC's website at www.progress-energy.com/aboutenergy/transmission/carolinas. A formal news release was made on November 6, 2008 announcing the new line, its purpose and need, and the scheduling of a public information workshop.

On November 18, 2008, PEC held a public information meeting to answer questions on the need, schedule, and other aspects of the project. The purpose of the meeting was also to solicit feedback from area property owners and residents about proposed routing options for the new Asheville – Enka 115kV line. The meeting was held from 5:00pm to 7:00pm at the NC Arboretum in Asheville, NC. Attendees were asked to provide feedback on the route alternatives by way of a questionnaire, which could be completed at that time or mailed by November 26, 2008. A 1-800 telephone line was also made

available indefinitely for providing comment and feedback. Based on the public ranking of the evaluation criteria, as well as other comments received on the route alternatives, a final route was identified and announced publicly on April 7, 2009.

Following identification of the line route, PEC held a series of stakeholders meetings with resource agencies. These meetings were held on August 19, 2009, September 24, 2009, October 20, 2009, and February 4, 2010 and attendees at some or all of the meetings included representatives from the NPS, US Army Corps of Engineers, NC Division of Water Quality, FWS, WRC, USFS, PEC, and NC Division of Land Resources.

As the identified route included a segment that crosses the BRP, PEC conducted a detailed visual analysis of the proposed line crossing to determine a solution that minimized the overall visual impact of the line in the Asheville corridor. This study was conducted in the last quarter of 2009, during and after which time, several miscellaneous meetings with the NPS were held to review aspects of the crossing solution, as well as the associated EA and NEPA process.

A copy of the environmental assessment will be distributed to the review agencies. The environmental assessment will also be made available to the public at the park website and at park headquarters. Together, all of these scoping activities assure that potential issues and concerns associated with granting the proposed ROW have been identified and included in this environmental assessment.

An EA analyzes the alternatives for the proposed action and their impacts on the environment. This EA has been prepared in accordance with the National Environmental Policy Act (NEPA) of 1969 and regulation of the Council on Environmental Quality (40 CFR 1508.9), and the NPS's Director's Order-12 (Conservation Planning, Environmental Impact Analysis, and Decision-making). (*Blue Ridge Parkway Environmental Assessment Information Guide for Right-of-Ways*, 2003).

3.0 Issues and Impacts

Impact topics were developed utilizing guidance set forth in the *Blue Ridge Parkway Environmental Assessment Information Guide for Right-of-Ways* (2003). Potential issues associated with this project were also identified by the public, BRP staff, and input from other state and federal agencies. The topics are resources of concern that could be beneficially or adversely affected by the actions proposed under each alternative. The impact topics were selected to guide the evaluation of alternatives associated with the proposed project. The impact topics listed below were identified based on the following: issues raised during scoping; federal laws, regulations, and executive orders; NPS *Management Policies* 2006; and NPS knowledge of resources.

Potential impact topics have been evaluated and are classified as either "Impact Topics Selected for Detailed Analysis" or "Impact Topics Dismissed from Detailed Analysis". In the sections below (Sections 3.1 and 3.2), there is a brief discussion of each impact topic and justification of each topic's placement in one of the two categories. When evaluating the justification for each topic's categorization, the following was taken into

consideration: Permanent towers would not be constructed on BRP property; activities taking place on BRP property would include: (1) initial ROW clearing, (2) line stringing (including access), (3) ongoing ROW maintenance, and (4) proposed mitigation (Section 4.3); and no vehicles and equipment would be used in streams and wetlands.

3.1 Impact Topics Selected for Detailed Analysis

3.1.1 Natural Resources - Vegetation

Of the natural resources in the study area that could be affected by the proposed actions, *vegetation* was selected for further analysis. This impact topic was selected for further analysis because of potential impacts associated with vegetation removal proposed as a part of the clearing plan for the new ROW.

3.1.2 Cultural Resources – Cultural Landscapes

Of the cultural resources topics that could be affected by the proposed actions, *cultural landscapes* was selected for further analysis. This impact topic was selected for further analysis because of potential impacts to the landscape associated with the visibility of the proposed transmission line from key vistas and overlooks along the BRP, and equipment present during ROW clearing and line construction.

Ms. Rebekah Newton of CEC spoke with Ms. Renee Gledhill-Early of the SHPO via phone on April 13, 2011 to discuss receiving comments and/or concurrence for the project with regards to cultural resources. It is unlikely that the SHPO will provide concurrence before being given the opportunity to review the final draft of the EA. Ms. Gledhill-Early indicated that the SHPO is included on the State Clearinghouse distribution list and will receive a copy of the final draft for review of cultural resources topics and comment. Correspondence related to consultation with the SHPO is included for review in Appendix B.

3.1.3 Visual Resources – Viewshed

Of the visual resources in the study area that could be affected by the proposed actions, *viewshed* was selected for further analysis. This impact topic was identified by the BRP as their primary area of concern during scoping meetings and was selected for further analysis because of potential impacts associated with the visibility of the proposed transmission line from key vistas and overlooks along the BRP, and equipment that would be present during ROW clearing and line construction.

3.1.4 Visitor Use and Experience – Visitor Activities

Of the probable visitor uses and experiences that could be affected by the proposed actions, *visitor activities* was selected for further analysis. For the purposes of this EA, visitor activities are defined as specific activities in a specific location (i.e., hiking on the Mountains to Sea Trail at Mile Marker 393). This topic was selected for further analysis because use of the trail might be affected by clearing and presence of the line.

3.1.5 Socioeconomic Environment - Transportation

Of the socioeconomic environment topics that could be affected by the proposed actions, *transportation* was selected for further analysis. The only travel corridor located within the BRP assessment area is the motor road, which has two lanes with narrow shoulders and a speed limit of 45 miles per hour. Temporary traffic control would be needed during the stringing of conductors (i.e., “power lines”) and shield wires, thus this impact topic was selected for further analysis.

3.2 Impact Topics Dismissed from Further Analysis

3.2.1 Natural Resources

The following natural resources in the study area were excluded from further discussion in the EA.

A. Topography

Current transmission line ROW clearing and proposed construction plans do not require grading or earth-moving activities on BRP property. Minor disturbances might occur during construction as a result of utilization of bucket trucks (rutting or soil pushing) parked on BRP property (Figure 2) and plantings outlined in the planting plan on pages 46 and 47 of the “Probable Visual Effects Analysis” (Appendix A). Any disturbed land would be returned to preconstruction conditions and stabilized with a groundcover. This impact topic was dismissed from further analysis because impacts to topography would be short term and minor.

B. Soils

Current transmission line ROW clearing and construction plans do not require grading or earth-moving activities on BRP property. Minor disturbances and soil compaction might occur as a result of clearing, utilization of bucket trucks parked on BRP property (Figure 2), and plantings outlined in the planting plan on pages 46 and 47 of the “Probable Visual Effects Analysis” (Appendix A). Upon completion of plantings and line installation, any disturbed land would be returned to preconstruction conditions and stabilized with a groundcover. This impact topic was dismissed from further analysis because impacts to soil would be short term and minor.

C. Jurisdictional Streams and Wetlands

Current transmission line ROW clearing and construction plans associated with work proposed within BRP property do not include crossing streams and/or wetlands with mechanical equipment. Fieldwork for the project area was conducted on May 12, 2010. An Environmental Report for the entire proposed transmission line which discusses the methodology and findings of the fieldwork is included for review (Appendix C). A stream and wetland delineation was completed as a part of this work and a wetland delineation form for the wetland identified on the BRP property is included in the Environmental Report (Appendix C; Data Sheet CK). Vegetation adjacent to streams and within

wetlands shown on the enclosed map (Figure 2) would be hand cut. This impact topic was dismissed from further analysis because no discharges to wetlands or streams are associated with the proposed activities.

D. Prime and Unique Farmland

Prime or unique farmland is defined as soil that particularly produces general crops as common foods, forage, fiber, and oil seed; unique farmland produces specialty crops such as fruits, vegetables and nuts. The location of the proposed ROW (preferred alternative) does not occupy soils classified as prime or unique as defined in the Farmland Protection Policy Act, 7 CFR Part 658; therefore, the topic of prime and unique farmland was dismissed as an impact topic in this document.

E. Air Quality

Local air quality in the immediate vicinity could be temporarily affected by dust generated from site construction activities and emissions from construction equipment and vehicles on the ROW adjacent to the BRP property. This impact topic was dismissed from further analysis because impacts to air quality would be short term and minor.

F. Water Resources

Residents and businesses within the study area or adjacent to the study area rely primarily on water from municipal water services. Potable water supplies are not present within the vicinity of the proposed transmission line crossing. Non-potable water is present in the streams and wetland within the BRP corridor. Current transmission line ROW clearing and construction plans associated with work proposed within the BRP property do not include impacts to streams and wetlands or non-potable water. Because potable and non-potable water would not be impacted by this project, this impact topic was dismissed from further analysis.

G. Terrestrial and Aquatic Wildlife

Fieldwork for project area was conducted on May 12, 2010. An Environmental Report for the entire proposed transmission line which discusses the methodology and findings of the fieldwork is included for review (Appendix C). Habitat types are identified in this report. The wildlife species and habitats associated with the proposed transmission line corridor would be temporarily disturbed or displaced. The areas that would be disturbed provide relatively common habitat and no rare wildlife species are known to inhabit the area, so this short term impact is not considered to be significant. Species observed on site and those known to inhabit this area are transient in nature and would be able to move out of the affected area; therefore, this impact topic was dismissed from further analysis for the reasons listed above.

H. Threatened and Endangered Species

ClearWater Environmental Consultants, Inc. (CEC) has conducted a file review of records maintained by the FWS and NHP. The desktop literature survey involved a review of FWS list of protected species in Buncombe County and the Skyland USGS Topographic Quad on which NHP identifies current and historic

occurrences of listed species for that locale. Thirty-four element occurrences (EOs) have been reported in the Skyland Quad. The NHP database identifies 38 EOs within a 2-mile radius of the project site (Skyland and Asheville Quads). All listed species are included for review (Appendix D).

Fieldwork for project area was conducted on May 12, 2010. An Environmental Report for the entire proposed transmission line which discusses the methodology and findings of the fieldwork is included for review (Appendix C). A threatened and endangered species assessment is included in this report. This topic was dismissed from further analysis because the species in the referenced table were not identified during field studies within the BRP transmission line corridor on May 12, 2010.

The FWS was notified of the proposed project via Scoping Letter on June 21, 2008. Comments in response to the proposed project were received by Burns & McDonnell on July 14, 2008. The letter states that the “comments are provided in accordance with the provisions of...section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531-1543)” Environmental Stakeholder meetings were held throughout 2009 and early 2010. Mr. Mark Cantrell with the FWS was in attendance at meetings held on August 19, 2009 and February 4, 2010. A representative of the FWS was not in attendance at the other stakeholder meetings although an invitation was made. An offer to conduct one final stakeholder meeting at the end of 2010 was made by PEC but declined by all invitees including the FWS. PEC has complied with requests made by the FWS during stakeholder meetings (i.e. conducting species surveys during the appropriate time “window” and preparation of an environmental report). Ms. Rebekah Newton of CEC spoke with Mr. Alan Ratzlaff of the FWS via phone on April 13, 2011 to discuss receiving comments and/or concurrence for the project. It is unlikely that the FWS will provide concurrence before being given the opportunity to review the final draft of the EA. It is expected that comments will be received during the official review period. PEC has made considerable effort to communicate project details to reviewing agencies and has provided reviewing agencies with many opportunities to attend stakeholder meetings and provide comments during the proposed project planning stages. To date, formal Section 7 consultation has not been initiated by the FWS. All correspondence and meeting minutes related to informal consultation with the FWS is included for review in Appendix B.

I. Floodplains

The proposed crossing of the BRP would not impact areas designated as “floodplain” by the Federal Emergency Management Agency (FEMA), FEMA map number 3700963500J C effective date January 1, 2010; therefore, this topic was dismissed from further analysis.

J. Soundscapes

The aural impact associated with installation of the proposed transmission line would be short term and minor, and is not expected to have significant direct impacts on noise levels in the area; therefore this topic was dismissed from further analysis.

K. Migratory Birds

The *Migratory Bird Treaty Act*, as amended (16 U.S.C. 703) and Executive Order (E.O. 13186, January 2001) directs each Federal agency taking actions having or likely to have a negative impact on migratory bird populations to work with the US Fish and Wildlife Service to develop an agreement to conserve those birds. In its current state, the existing ROW has resulted in some habitat fragmentation since its construction. This can adversely impact migratory birds and other species requiring large tracts of uninterrupted forest, while creating habitat for species that prefer open herbaceous and edge areas. The proposed site has only marginal suitable habitat based on its proximity to the Asheville urban area, the existing BRP motor road corridor, and the existing adjacent utility line. The proposed new ROW crossing the BRP would be minimized to the maximum extent practicable (43 feet) by using a stacked conductor configuration set as close to the existing line as possible. Thus, the proposed disturbance would be only 0.8 acre. This represents a minimal amount of potential nesting area for migratory birds. According to the Aviation Protection Plan Guidelines (2005), use of a stacked configuration is an alternative method to ensure separation of energized conductors. In a scoping letter from the FWS dated July 14, 2008, the FWS recommends 60 inches of separation between phases. Phase-to-phase spacing across the BRP would be 9 feet (108 inches). In order to minimize activities during the peak visitor season, PEC's initial clearing and periodic maintenance work would be conducted in the fall/leaf-off season which is outside of the nesting period. PEC would coordinate routine maintenance of the ROW with BRP staff to ensure minimal impacts to resources (including migratory birds). For example, cutting of adjacent "danger trees" would be minimized by using the chart method; only 13 "danger trees" would need to be removed outside of the ROW. PEC has agreed to leave a buffer adjacent to the stream and wetland crossing; and also leave low-growing species in the ROW. The proposed clearing activities summarized above are described in greater detail in Section 4.2.

Additionally, PEC staff are trained to identify indicators of a line strike on deceased birds and are required to report incidences. There are no known occurrences of bird mortality due to line strikes on the existing line passing through the BRP. No significant effects on neotropical/migratory bird species would be expected from this project; therefore, migratory birds was dismissed from further analysis.

3.2.2 Cultural Resources

The following is a description of cultural resource topics that are excluded from further discussion in the EA.

A. Historic, Archaeological, and Ethnographic Resources

TRC completed an intensive archaeological survey of two areas where the mitigation for the proposed transmission line project would potentially result in ground disturbance on BRP property. The work was conducted to ensure compliance with Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR 800 (*Protection of Historic Properties*), and

took place under the terms of U.S. Department of the Interior Archeological Resources Protection Act (ARPA) Permit BLRI 2011-001. Background research identified no previously recorded sites within or immediately adjacent to these areas and review of historic maps found no evidence that structures were previously situated at the sites. The field surveys yielded no evidence of archaeological sites or other cultural resources; therefore, this topic was dismissed from further analysis. TRC forwarded a copy of the survey to the SHPO on November 29, 2010. A letter of concurrence was issued by SHPO on December 23, 2010 and is included for review in Appendix B. This letter states that comments were made “pursuant to Section 106 of the National Historic Preservation Act”. The final report from TRC is included for review in Appendix E and the NPS Assessment of Action Having an Effect on Cultural Resources checklist is included in Appendix L.

B. Museum Collections

The NPS Director’s Order #28, Cultural Resource Management Guideline (1997) and Museum Handbook (2004) require the consideration of impacts on museum collections (historic artifacts, natural specimens, and archival and manuscript material). Because museum collections would be unaffected by the installation of the new line, this topic was dismissed from further analysis.

3.2.3 Visitor Use and Experience

The following probable visitor uses and experiences in the study area were excluded from further discussion in the EA.

A. Visitation Patterns

For the purpose of this EA, visitation patterns are defined as general classes of activities (i.e., hiking, driving the motor road, etc.). This topic was dismissed from further analysis because the number of visitors using the BRP motor road and trail systems should not change as a result of the proposed activities.

3.2.4 Socioeconomic Environment

The following is a description of socioeconomic environment topics that are excluded from further discussion in the EA.

A. Population and Economy

Installation of the proposed transmission line is to address reliability and is in response to existing and predicted demands, and is not a driver of growth. The proposed activity would not increase or decrease population; or have significant effects on the economy. Therefore, this topic was dismissed from further analysis.

B. Housing

Construction of the proposed transmission line is to address reliability and is in response to existing and predicted demands, so the proposed activity would not increase or decrease the need for housing. Therefore, this topic was dismissed from further analysis.

C. Community Services and Infrastructure

Currently, there are no community services provided within the BRP transmission line corridor. Therefore, this topic was dismissed from further analysis because infrastructure already in place (i.e. road, road shoulders, signs, etc.) would not be affected by the proposed activity.

D. Land Use

Current land use within the BRP transmission line corridor is recreational with federal lands being maintained as forestlands and ROW. This topic was dismissed from further analysis because land use in the vicinity of the proposed project would not change as a result of the proposed activity.

E. Socioeconomic Conditions

Possible impacts from transmission lines include impacts to property or home values on adjacent lands. Infrastructure already exists at the site and although the upgrade of line would change the size and appearance of some infrastructure components, the proposed line would not function in a way that would impact population characteristics or demographics, local economic characteristics, housing characteristics, community services or facilities, or types of local businesses that operate near the site. The proposed project would not impact socioeconomic conditions in the vicinity of the project; therefore, this topic was dismissed from further analysis.

F. Environmental Justice

Presidential Executive Order 12898, “General Actions to Address Environmental Justice in Minority Populations and Low-income Populations”, requires all Federal agencies to incorporate environmental justice into their missions by identifying and addressing disproportionately high and/or adverse human health or environmental effects of their programs and policies on minorities and low-income populations and communities. There are no minority or low-income populations located adjacent to the proposed ROW, so the proposed action would not have disproportionate health or environmental effects on minorities or low-income populations or communities defined in the US EPA’s “Draft Environmental Justice Guidance” (July 1996). Therefore, this topic was dismissed from further analysis.

G. Hazardous Materials

There would be no hazardous waste used for or generated from the proposed activity. Therefore, this topic was dismissed from further analysis.

H. Health and Human Safety

PEC would conduct the proposed activities with safety at the forefront of the project. The project would include safety measures such as utilization of signage and flag bearers, traffic control, and utilization of bucket trucks to keep conductors off the motor road. Because of the safety measures that would be utilized as a part of this project, this topic was dismissed from further analysis.

3.2.5 Greenhouse Gases and Climate Change

The project as proposed is in response to existing energy demands on the current system. The project should not induce growth that might increase greenhouse gas emissions which lead to climate change. Construction equipment utilized for the project would emit greenhouse gases in the form of exhaust; however, construction equipment would meet current air quality and emission standards. Because impacts would be short-term and minor, this impact topic was dismissed from further analysis.

3.2.6 Energy Resources

The NPS's Guiding Principles of Sustainable Design (1993) provide a basis for achieving sustainability in facility planning, design and park operations, emphasizing the importance of bio-diversity, and encourages responsible decisions. The project as proposed does not include development of new park facilities or alteration to park operations; therefore, this topic was dismissed from further analysis.

3.2.7 Park Operations

The project as proposed would not affect the way the park is operated. A minor and temporary addition to the workload of office staff would occur as a result of reviewing the EA and special use permit application. Additional NPS law enforcement may be required to patrol the area during construction. Impacts to administrative staff that are responsible for park operations will be minor and consistent with the ongoing workload; therefore, this topic was dismissed from further analysis.

3.3 NPS Management Policies 2006, Section 1.4: The Prohibition on Impairment of Park Resources and Values

By enacting the NPS Organic Act of 1916 (Organic Act), Congress directed the U.S. Department of Interior and the NPS to manage units “to conserve the scenery and the natural and historic objects and wildlife therein and to provide for the enjoyment of the same in such a manner and by such a means as will leave them unimpaired for the enjoyment of future generations” (16 USC § 1). Congress reiterated this mandate in the Redwood National Park Expansion Act of 1978 by stating that NPS must conduct its actions in a manner that will ensure no “derogation of the values and purposes for which these various areas have been established, except as may have been or shall be directly and specifically provided by Congress” (16 USC 1a-1).

NPS Management Policies 2006, Section 1.4.4, explains the prohibition on impairment of park resources and values:

While Congress has given the Service the management discretion to allow impacts within parks, that discretion is limited by the statutory requirement (generally enforceable by the federal courts) that the Park Service must leave park resources and values unimpaired unless a particular law directly and specifically provides otherwise. This, the cornerstone of the Organic Act, establishes the primary responsibility of the Nation Park Service. It ensures that park resources and values will continue to exist in a condition that will allow the American people to have present and future opportunities for enjoyment of them.

The NPS has discretion to allow impacts on Park resources and values when necessary and appropriate to fulfill the purposes of a Park (NPS 2006 sec. 1.4.3). However, the NPS cannot allow an adverse impact that would constitute impairment of the affected resources and values (NPS 2006 sec 1.4.3). An action constitutes an impairment when its impacts “harm the integrity of Park resources or values, including the opportunities that otherwise would be present for the enjoyment of those resources or values” (NPS 2006 sec 1.4.5). To determine impairment, the NPS must evaluate “the particular resources and values that would be affected; the severity, duration, and timing of the impact; the direct and indirect effects of the impact; and the cumulative effects of the impact in question and other impacts” (NPS 2006 sec 1.4.5). A determination on impairment for the preferred alternative evaluated in this plan/EA is provided in Appendix J.

4.0 Alternatives

As stated in Section 3 of the “Probable Visual Effects Analysis” (Appendix A):

PEC’s electrical load projections indicate that by the winter of 2010 with one unit at the Asheville Generating Plant off line, one of the two 230/115kV transformers at the Asheville Generating Plant will overload with the loss of the other 230/115kV transformer. Additional load projections, predicated on the assumption that the Asheville–Enka West 115kV Line has been converted to 230kV, also indicate that by the winter of 2012-13, with all generation online at the Asheville Generating Plant, the loss of a common tower in the Asheville – Enka 230kV and the Asheville – Enka 115kV lines will cause the Oteen – West Asheville 115kV line to overload. The impact of such occurrences would be extremely severe and could create reliability issues in the Western Region, which would result in curtailment of significant amounts of firm customer load. Transmission system load flow studies indicate that these potential severe occurrences can be eliminated by building a new single-circuit 115kV line that will run from the Asheville Generating Plant to the Enka Switching Station to replace the existing 115kV line that will be converted to 230kV.

To determine a preferred route for the proposed transmission line, PEC conducted an intensive routing study (for the entire length of the line) during which many possible route segments, and combinations thereof, were evaluated and ranked according to a variety of social, economic, and technical criteria. The details of the process, and associated analysis and results can be found in the report prepared by Burns & McDonnell entitled “Routing Study and Environmental Report” (May 2009). The report has been included for review (Appendix F). The proposed transmission line must connect the Asheville Generating Plant at Lake Julian to the Enka Substation at Sardis Road. This connection requires traversing a north-westerly corridor flanked by the Pisgah National Forest to the west and the Biltmore Estate National Historic Landmark to the east. The BRP runs east-west across the width of this corridor. Therefore, all route options (action alternatives) must cross the BRP. As a result of the routing studies and discussion with BRP staff, the “no action” alternative (Section 4.1), the preferred alternative (Section 4.2), the “environmentally preferred” alternative (Section 4.4), and four alternatives considered but dismissed (Section 4.3) are below.

4.1 *Alternative A - No Action*

The “No Action” alternative would require no new impacts to resources at the site. Under the no action alternative, the current electrical configuration within the BRP corridor would remain as it is: two lines on common structures within an existing 100-foot ROW. Existing structures which suspend the line over the BRP property are located beyond the park boundaries.

Routine maintenance is conducted by qualified contractors, working under contract for a PEC forester. Maintenance would continue as it has on the existing ROW including periodic foot and/or aerial patrols (twice annually); hand cutting, machine cutting, and or herbicide control within the existing ROW on a 3-year cycle; periodic side-trimming of the existing ROW on a 6-year cycle; periodic reactive trimming (immediate response to an identified threat); and periodic cutting of “danger trees” on a 5-18-year cycle.

For routine “cycle” maintenance, PEC uses methods appropriate to the existing site conditions. Generally, vegetation is controlled mechanically or with herbicides. Where use of mechanical means is not feasible or where property owner constraints or environmental consideration necessitate, hand cutting is utilized. When hand cutting is utilized, vegetation is cut to near-ground level with the stumps left in place.

4.2 *Alternative B – Construction of a New 115kV Line Parallel to the Existing Line on the Blue Ridge Parkway (Preferred Alternative)*

4.2.1 Overview

As stated in Section 1 of the “Probable Visual Effects Analysis” (Appendix A):

Due to growing demand for electricity in Buncombe County, NC and the surrounding area, PEC must complete enhancements and upgrades to its regional electrical transmission system to ensure continued reliability and stability of its Western Region grid.

As stated in Section 2 of the “Probable Visual Effects Analysis” (Appendix A):

Two 115kV electrical transmission lines now run from PEC’s Asheville Generating Plant to the Enka Switching Station. These two lines are supported by common structures (double-circuit lattice steel towers) within a single ROW corridor that crosses the BRP between NC Highway 191 and Interstate Highway 26. The 3-phase line on the west side of the structures is known as the Asheville–Enka West 115kV Line (West Line) and the 3-phase line on the east side of the structures is known as the Asheville–Enka East 115kV Line (East Line). PEC proposes to convert the West Line to 230kV and construct a new 115kV line, that will, in effect, replace the existing 115kV West Line that will be converted to 230kV. The proposed line will be a single-circuit line and will run parallel to the existing line. The proposed line will run on the west side of the existing line, which will require increasing the width of the existing corridor from 100 feet to a total width of 143 feet. Where the transmission line corridor crosses the BRP, PEC will use structures on the proposed

line that will allow minimum expansion of the line corridor (i.e., 43 feet of additional corridor width will be needed). These structures include a stacked line configuration (phase over phase) with structures placed outside of NPS property.

Upgrading the existing West Line to 230kV and constructing the proposed line would ensure continued compliance with NERC reliability standards and allow PEC to continue providing reliable electrical service for PEC's western North Carolina service area. The length of the new 115kV line would be approximately 7.6 miles, with an in-service date of December, 2012. Figure 1 shows the project location; Figure 2 displays both the proposed 43-foot wide ROW and existing 100-foot wide ROW over the BRP corridor.

4.2.2 Initial Clearing of ROW

For the planned crossing of the BRP, PEC proposes a variety of mitigation techniques to not only minimize the visual impact of the line, but to also minimize the amount vegetation that would be cleared to accommodate the new line. Some of these mitigation techniques include the following:

- Strategically located single-pole structures, utilizing a vertically stacked (phase-over-phase) configuration, and with no structures located on BRP property. This would reduce the required ROW width from 70 feet (as needed for PEC's standard H-frame construction) to only 43 feet.
- Within the 43 feet ROW, PEC would leave all low growing species, such as rhododendron, mountain laurel, and dogwood. Tall growing species in the riparian area at the bottom of the ravine, north of the BRP motor road, would also remain.
- To ensure continued safe, uninterrupted operation of the new line it would be necessary for PEC to remove "danger trees" outside the 43 feet ROW. PEC defines "danger trees" as those trees that are tall enough to contact the conductor should the tree fall or be blown into the ROW or make contact with the conductor due to a conductor blowout. Other utilities acquire a significantly wider ROW for similar voltage lines, often up to 150 feet or more. While this eliminates the need to remove "danger trees", it results in a much wider, cleared ROW corridor. PEC's combined ROW and "danger tree" standards would eliminate such an occurrence.
- To reduce the number of "danger trees" that would be removed outside the 43 feet ROW, PEC has agreed to use the "chart method". PEC's standard method for identifying "danger trees" is to select trees taller than a 45° sight line taken from a reference point 5 feet beyond the outside conductor on the line. The "chart method" is more selective and takes into account the topography of the ROW and the predicted sag of the conductor. By adopting the "chart method", PEC would reduce the number of "danger trees" to be removed to thirteen as opposed to 153 as identified under PEC's standard method.
- Upon completion of ROW clearing and line construction, PEC has agreed to plant native, low growing vegetation to the north and south of the BRP motor road and as a screen to the "Mountains to Sea" trail.

As an electric utility, PEC is required to be in compliance with the National Electric Safety Code Part 2, Section 21, Rule 18 Vegetation Management which states "Vegetation management should be performed as experience has shown necessary".

Based on experience, PEC typically removes vegetation that could grow tall enough to become a risk to any transmission line in the ROW corridor. PEC has modified its standard practice, in collaboration with NPS staff, and defined specific approaches for clearing the new ROW on the north and south sides of the BRP motor road, which would reduce the visual impact of the cleared ROW corridor. The following narrative sets forth those approaches (note: initial clearing of vegetation within the ROW would be performed during the dormant season).

On the north-side of BRP motor road, the topography is steep and variable and therefore, it is unlikely that ROW clearing could be performed using large, motorized equipment. Thus, the initial clearing would have to be completed by hand, utilizing climbers and chainsaws.

PEC has determined that low growing native vegetation, such as dogwood, rhododendron, mountain laurel etc., could remain in the ROW where it does not pose a risk to the transmission line. In the riparian area and designated wetland at the bottom of the ravine, on the north-side of the BRP motor road, there are currently tall growing species, including sycamore and poplar. It is estimated that the distance from the bottom of the ravine to the predicted height of the conductor under worst case sag conditions would be approximately 136 feet. To help minimize the impact to this riparian and wetland area, these trees would not be removed during initial clearing. In the future, if any of these trees reach a height that would impact the safe operation of the transmission lines in the ROW corridor, the PEC forester would meet with a NPS representative to discuss and agree on the removal of the tree. Prior to commencing the clearing activity, the species identified to remain in the ROW would be flagged in the field to indicate they should not be cut. All other tall growing species in the ROW would be removed.

During the clearing process, if any debris damages the flagged, low growing native species, and if the damage is not severe, the species would be pruned to remove any broken limbs. If the damage is severe the species would be cut at the stump so the bush can come back. For all trees that are cut inside the ROW an approved herbicide would be applied to the stump immediately after the tree is cut. PEC would not apply herbicide within the NPS-identified stream/wetland buffer. The debris from the felling of any trees inside the ROW would be left inside the ROW, but cut so it lays relatively flat (no more than 20 inches above ground) and poses minimal danger.

On the south-side of BRP motor road, the terrain would support clearing by mechanical means. By using mechanical means the trees would both be cut and chipped at the same time, thereby reducing the amount of time to clear the ROW, minimizing any erosion and also possibly reducing the propagation of invasive species. The type of equipment to be used would be a Shinn cutter (attached to a backhoe) with a Fecon blade at the end of the arm. The Shinn cutter would maneuver to a standing tree and starting from the top of the tree would chip the trunk, branches, and limbs to the ground. Alternatively, the standing trees could be cut by chainsaw and cabled to a chipper (located on flatter ground away from the designated streams) and chipped inside the ROW. When chipping the trees, the depth of the wood chips would vary to some degree depending on the amount of trees to be chipped. If the depth of the chips becomes greater than 6-7 inches, where possible, PEC would even them out to have a more uniform appearance. Some of the larger trees

would be cut at the stump and 8-15 feet of main stem left along ROW for wildlife habitat. When tree stumps are cut, approved herbicide would be applied to the stump to impede regeneration of species. Any vegetation along the designated stream channel would be removed by mechanical means, but the machine would not enter the designated stream channel. Once out of the stream, the vegetation would be removed by cabling and then chipped. The final approach to clearing the south-side of the BRP motor road would be determined in collaboration with NPS staff. The “Mountains to the Sea” trail is also on the south-side of the BRP motor road. Regardless of the clearing approach selected, PEC suggests that this section of the trail be closed for the relatively short time that ROW clearing is being performed.

During the initial clearing, “danger trees” would have to be removed on both sides of the BRP motor road. PEC defines danger trees as those trees, outside of the maintained ROW corridor, which are tall enough to contact the conductor should the tree fall or be blown into the ROW or make contact with the conductor due to a conductor blowout. This is in contrast to the NPS’s “Hazard Trees” definition, which is based on a combination of probability of failure, size of defective parts, probability of target impact, and other risk factors. The PEC term is a simple trigonometric calculation (“chart method”) of whether a tree could hit the conductor, whereas the NPS term is more of a general tree health/risk assessment.

Concurrent with cutting of danger trees, PEC proposes to “side trim” individual limbs that extend into the ROW from trees outside the ROW. These trees are not danger trees; however, the limbs growing into the ROW could be a hazard and would be proposed to be cut.

For the initial ROW clearing, PEC would first survey and flag “danger trees” outside the new ROW based on the “chart method”. A PEC and a NPS representative would then meet at the proposed crossing location to discuss each marked danger tree surveyed. The “danger trees” identified using the “chart method” would then be evaluated by the NPS representative using the BRP NPS Hazard Tree Rating Criteria to determine which trees would be removed. Trees to be removed would be marked with paint at the stump and at the DBH of the tree. All other danger tree flagging would then be removed. The debris from removal of the danger trees would be left where it is felled, but cut so it lays relatively flat (no more than 20 inches above ground) and poses minimal danger. Stumps outside a designated riparian buffer would be treated with an herbicide during the initial ROW clearing process. Where possible, some of the debris from the cutting of the danger trees would be chipped; especially near the “Mountains to the Sea Trail” to ensure safe access along the trail.

4.2.3 Corridor Vegetation Management (Vegetation Maintenance of ROW Corridor)

Routine operation and maintenance of the line at the BRP crossing area would focus on completion of a Corridor Vegetation Management (CVM) plan (Appendix K). The CVM will outline a plan to control vegetation in the corridor to ensure safe and reliable operation of the transmission line.

4.2.4 Stream and Wetland Crossing

Fieldwork for the project area was conducted on May 12, 2010. An Environmental Report for the entire proposed transmission line which discusses the methodology and findings of the fieldwork is included for review (Appendix C). A stream and wetland delineation was completed as a part of this work. There are two small streams located within the BRP corridor. Both tributaries are unnamed tributaries to the French Broad River and classified as Class "C" waters by the NC Division of Water Quality.

The stream segment north of the BRP motor road is adjacent to an old, abandoned road bed but is of good quality. The stream is approximately 6 feet in width and the banks appear to be stable with good vegetative cover. The stream segment south of the BRP motor road is narrow and incised, approximately 2 feet wide, and adjacent to a frequently used footpath (Mountains to Sea Trail). This stream flows out of the existing transmission line corridor south of the BRP property boundary.

There is one small wetland within the BRP corridor, abutting the stream segment north of the parkway road. It is approximately 0.03 acre and is likely inundated during flood events. There is a high diversity of herbaceous species within this wetland. This is the only wetland found in the assessment area. A wetland delineation form for the wetland identified on the BRP property is included in the Environmental Report (Appendix C; Data Sheet CK).

Vegetation adjacent to streams and within wetlands shown on the enclosed map (Figure 2) would be hand cut, and would not be impacted by clearing equipment. There would be no discharge of fill material in streams and wetlands using this method.

4.2.5 Construction and Stringing of the Line

No permanent structures would be placed on the BRP property. The preferred method for installation of the line is via the use of two bucket trucks located immediately north and south of the motor road at locations previously determined in collaboration with NPS staff. Approximate locations of the bucket trucks is identified on the enclosed map (Figure 2).

Bucket trucks would be used to facilitate stringing of the line and to provide protection over the motor road during that process. One truck would be positioned on the grass verge on the north-side of the BRP motor road, thus requiring access from the road. The second bucket truck would be positioned on the bluff south of the BRP motor road and can be accessed via Biltmore Farms, LLC property south of the BRP. Positioning of the trucks would not interfere with traffic flow, and they would be moved off BRP property at the end of each day. During stringing, permanent structures would also be accessed from off site. Ground disturbance caused by utilization of the bucket trucks would be repaired and stabilized with a ground cover to preexisting conditions.

It is anticipated the entire stringing activity across the BRP property would be performed over the course of one week. At commencement of stringing, a p-line (nylon rope leader) would be pulled across the BRP motor road until the slack on the p-line has been taken up. This operation typically takes 10-15 minutes per p-line (one p-line per conductor and

shield wire would be required, for a total of five). Traffic control would be required and traffic temporarily halted, as necessary, while the p-line is being strung. Following successful stringing of the p-line, further stringing activities would be performed off the BRP while maintaining a minimum vertical clearance of 25 feet over the motor road and would not require traffic control. The final configuration and sag of the conductors would be as described in the Executive Summary of the “Probable Visual Effects Analysis” (Appendix A). During construction and stringing, the permanent structure locations would be accessed via access routes through the neighboring Biltmore Farms, LLC property.

4.3 Mitigations for Alternative B

Mitigation activities are outlined below which offset impacts to the BRP environment in association with the impact topics discussed throughout the EA.

4.3.1 Natural Resources – Vegetation

To mitigate adverse impacts to vegetation, planting plans have been proposed for the north side of the motor road and adjacent to the Mountains to Sea Trail. Although the primary purpose of these planting plans is to mitigate for visual impacts, these areas would be replanted with native low-growing vegetation that would provide a seed source to populate the adjacent ROW. Mulch would be incorporated into the landscaping plan to provide a natural ground cover. Any mulch material used on site would be clean and free of exotic weeds. The source of mulch used at the site would be inspected and approved by NPS staff. PEC would provide the NPS with 14 days advance notification to inspect the source. If it is found unsuitable, another source would be found and approval process repeated. The planting plans are outlined in further detail on pages 46 and 47 of the “Probable Visual Effects Analysis” (Appendix A). During a recent field survey, several invasive species were found on the new and existing ROW (Appendix H, I, and K). For example, Oriental bittersweet was found throughout the proposed ROW with vines growing up the main stem of trees covering the limbs, and going down to the understory trees. A CVM outlining routine maintenance activities (including the management of invasive species through mechanical- and hand-cutting and herbicide application) would be followed (Appendix K). PEC would provide the BRP with the following information whenever herbicides are used within the permitted ROW: name of herbicide used, date, area covered, target species, wind speed, air temperature and relative humidity readings for the time of application.

4.3.2 Cultural Resources – Cultural Landscapes

To mitigate impacts to cultural landscapes, PEC would use both native vegetation and visual impact reduction techniques.

PEC proposes to utilize landscape plantings on the north side of the BRP to significantly screen the structures on the existing and proposed lines. Using plants that are indigenous to the mountainous region of western NC and compatible with both the BRP’s and PEC’s list of approved species, PEC plans to introduce plantings that would provide visual screening looking north toward an otherwise open corridor. As stated in Section 7.3.4 of the “Probable Visual Effects Analysis” (Appendix A):

The BRP passes under the existing transmission line between structures #19 and #20. Currently, structure #19 to the south of the motor road is not visible due to topography and a vegetated buffer zone that is maintained across the ROW adjacent to the BRP while a new buffer zone will be retained to screen structure #19A on the proposed ROW. To mitigate adverse impacts to visual resources, a suggested planting plan has been prepared for the area on the north side of the BRP that calls for low growing vegetation to be planted across the corridor.

PEC proposes several visual impact reduction techniques to mitigate adverse impacts to visual resources and ensure that portions of the new line visible from overlooks would be consistent with and immediately adjacent to the existing corridor. Use of mitigation measures as described in the bulleted items below would not only minimize visual recognition of the new line from key vistas and overlooks, but would also be effective in reducing or eliminating the current lines' visibility. The view would be similar to what is currently seen from the BRP overlooks.

To mitigate adverse impacts to the viewshed, the following construction techniques and methods as listed in the Executive Summary and Sections 7.0 and 8.0 of the "Probable Visual Effects Analysis" (Appendix A) are proposed:

- The proposed line will be placed immediately adjacent to the existing line across the BRP and will utilize a vertically stacked (phase-over-phase) conductor configuration to minimize the additional width of new ROW needed.
- The new line structure immediately north of the BRP will be a dull, galvanized steel single-pole aligned beside a lattice steel tower on the existing line so they will be seen as a single element when viewed from the French Broad Overlook.
- To the extent possible, the "sag" of the new line's conductors will be matched to the sag of the existing line's conductors when viewed by BRP users. This includes placing the conductors on the proposed line in the same height range as the existing ones at the crossing point, with the lowest conductor being approximately 62 feet above the BRP motor road and the highest one being approximately 91 feet above the motor road.
- Darkened galvanized steel structures will be used on the new line north of the BRP where they are visible against a vegetated backdrop from the French Broad River Bridge and the French Broad Overlook.
- Selected lattice steel towers, both north and south of the BRP on the existing line, will be darkened to reduce their visibility where they are visible against a vegetative backdrop when viewed from the French Broad River Bridge, the French Broad Overlook, and the roadside vista near Milepost 394.5 on the BRP.
- Non-specular (matte-finished) conductors will be used on the proposed line to reduce conductor sheen (light reflectivity) and consequently, sharp contrast with natural elements in the view shed.

4.3.3 Visual Resources - Viewshed

To mitigate impacts to the viewshed, PEC would use both native vegetation and visual impact reduction techniques as described above in Section 4.3.2.

These construction techniques and methods are listed in the Executive Summary and Sections 7.0 and 8.0 of the “Probable Visual Effects Analysis” (Appendix A).

PEC proposes several visual impact reduction techniques based on carefully selected transmission structure types, material finishes, and locations. These techniques would not only minimize visual recognition of the new line from key vistas and overlooks, but would also be effective in reducing or eliminating the current lines’ visibility.

4.3.4 Visitor Use and Experience – Visitor Activities

The Mountains to Sea Trail crosses the transmission line corridor within the BRP corridor just south of the motor road. To mitigate adverse impacts to visitor activities, PEC proposes to add plantings that would partially screen views from the trail looking in either direction down the transmission line corridor and has developed a preliminary landscape plan. Suggested plantings might include indigenous species such as rhododendron (*Rhododendron spp*), American holly (*Ilex opaca*), and mountain laurel (*Kalmia latifolia*) to accomplish the screening. Details of the planting plan are included on pages 46 and 47 of the “Probable Visual Effects Analysis” (Appendix A).

PEC proposes to address public safety on the Mountain to Sea Trail by closing the trail during the relatively short time that ROW clearing is being performed.

4.3.5 Socioeconomic Environment – Transportation

Mitigation is not proposed for effects on transportation. Effects would be limited to a short-term, one-time occurrence that would not have any lasting effects on the BRP.

4.3.6 Secondary Mitigation Measures

To accomplish its goal to construct the Asheville–Enka 115kV Line in a manner that would result in no significant adverse visual effects to the scenic quality of the BRP, PEC proposes three actions that are not directly related to the proposed line. PEC inspected all electrical distribution lines that cross the BRP within the Asheville Corridor. As secondary mitigation, PEC proposes:

A. Removal of the Distribution Line at the “Love Connection”

The “Love Connection” is a single phase overhead distribution line that connects Lovers Loop Lane on the east side of the BRP with East Porter Road on the west side of the BRP near Milepost 385. PEC proposes to remove this line.

B. Placing the Existing Distribution Line Underground at Highway 25

PEC has determined that the existing three phase overhead distribution line that crosses the BRP to the east of US Highway 25 can be relocated. PEC proposes to install the line underground along the shoulder of US Highway 25 and to remove the existing overhead facilities crossing the BRP.

C. Placing the Existing Distribution Line Underground at Highway 74A
As stated in Section 8.2 of the “Probable Visual Effects Analysis” (Appendix A):

The existing PEC distribution line across the BRP near the bridge over Highway 74A is a dominant element in the view from the BRP because of its position in the normal vision cone and because the conductors have many splices.

PEC proposes to install this line underground along the existing distribution line corridor and then bring the line above ground at existing structures located near the edges of the BRP property boundaries, thus eliminating the line’s visibility where it crosses the motor road.

PEC believes these secondary mitigation measures together with visual mitigation measures discussed above would ensure that the addition of the proposed line would not increase cumulative power line visual impacts in the BRP Asheville Corridor.

4.4 Alternatives Considered but Dismissed

During the planning process, several alternatives were considered but deemed to be unreasonable and were not carried forward for analysis in this EA. The following alternatives were considered but dismissed.

4.4.1 Reconductor the Existing Line

During the planning phase of this project, which included the Final Routing Study and Environmental Report (Appendix F), an alternative considered was to reconductor the existing Oteen-West Asheville 115kV Line. To accomplish this, the existing transmission line would need to be taken out of service. PEC determined that the line could not be taken out of service for the time required to perform this task. Also, this alternative would not address the Asheville Generating Plant stability. For these reasons, reconductoring the line is not a feasible alternative.

4.4.2 Alternate Line Routes - Use of Existing I-26 Corridor

During the planning phases of this project, which included the routing study, an alternative route which followed the existing I-26 corridor was considered. Following I-26 was not selected because the North Carolina Department of Transportation (NCDOT), in its “Policies and Procedures for Accommodating Utilities on Highway Rights of Way”, does not allow parallel installations within the rights of way of full controlled-access highways if maintenance and access is required from through-traffic roadways or ramps. Additionally, this option imposes unacceptable access and construction limitations. Because of these stated policies, using the existing I-26 corridor is not a feasible alternative.

4.4.3 Purchasing Supplemental Electrical Capacity from Duke Energy Carolinas, LLC

As stated in Section 4.3 of the “Probable Visual Effects Analysis” (Appendix A):

Purchasing supplemental electrical capacity from Duke Energy, while potentially addressing future growth in the demand for electricity in PEC’s Western Region, would not alleviate the possible PEC transmission overload problems discussed in Section 2. Additional capacity would need to be imported via Duke Energy’s existing 230kV lines, and although Duke Energy has 115kV lines in the region, these lines are older, do not have the additional capacity to meet PEC’s requirements, and are more geographically remote from which to build transmission line connections to PEC’s service area. Due to the topology of the area’s transmission networks, Duke Energy’s only 230kV inter-ties with PEC’s transmission system are at the Asheville Generating Plant. Taking delivery of additional electrical capacity from Duke Energy at the Asheville Generating Plant would add to the transmission issues in the area and increase the potential for an overload condition to occur. Therefore, purchasing supplemental electrical capacity from Duke Energy is not a feasible alternative.

4.4.4 Place the Proposed Line on Common Structures with the Existing Line within the Existing Corridor

As stated in Section 4.4 of the “Probable Visual Effects Analysis” (Appendix A):

This alternative could only be accomplished by removing the existing double-circuit line structures and replacing them with triple-circuit structures, which could accommodate the existing 115kV circuit, one 230kV circuit that will replace the existing Asheville–Enka West 115kV circuit, and the proposed new 115kV circuit. Triple-circuiting these lines between the Asheville Generating Plant and the Enka Substation is not a viable option because it would require the assessment of NERC transmission planning standard TPL 004. An assessment of extreme events (in this case, the loss of a tower line with three circuits) would put at risk the entire customer electrical load in PEC’s Western Region. Moreover, the loss of these three circuits could potentially result in a cascading effect whereby other electrical utilities interconnected to PEC’s western North Carolina transmission system would have to shed electrical load.

While a triple-circuit structure would require little or no additional ROW, it could only be feasibly constructed by installing it on a new ROW immediately adjacent to and east of the existing line and abandoning the existing ROW across the BRP. The elevation of the new ROW would be such that the new triple-circuit structures would be more visible from the BRP than the structure and ROW configuration of the proposed action. Moreover, it would not be feasible to remove the existing double-circuit line structures and replace them with triple-circuit structures due to transmission network constraints preventing both circuits on the existing line from being taken out of service concurrently and long enough to complete the rebuild.

For these reasons, placing the proposed line on common structures with the existing line is not a feasible alternative.

4.5 *Environmentally Preferred Alternative*

The environmentally preferred alternative is the alternative that causes the least damage to the biological and physical environment. This also means it is the alternative that best protects, preserves, and enhances historic, cultural, and natural resources. In this instance, the environmentally preferred alternative is the same as the “no action” alternative. Under the no action alternative, the current electrical configuration within the BRP corridor would remain as it is: two lines on common structures within an existing 100-foot ROW. Under this alternative, there would be no action taken by the NPS on a request for a special use permit by PEC. Maintenance would continue as it has on the existing ROW including field inspections and selective tree removal within the ROW and immediately adjacent to the ROW for danger trees. Even if the proposed project is not approved, maintenance on the existing ROW will continue as it has in the past. However, the “no action” alternative is not a feasible alternative (Section 4.1) because it does not meet the project need.

4.6 *Summary Comparison of Alternatives*

Table 1 below is a comparison of the two alternatives carried forward in the EA (Section 4.1 and 4.2) and the impacts to vegetation, the viewshed, visitor activities, transportation, and cultural landscapes.

As defined in Section 1.0 of the EA, the purpose and need for the project is as follows:

The proposed 115kV line needs to run from the Asheville Generating Plant to the Enka Substation at Sardis Road. To accomplish this requires traversing a north-westerly corridor flanked by the Pisgah National Forest to the west and the Biltmore Estate National Historic Landmark to the east. The BRP runs east-west across the width of this corridor, therefore requiring all route options to cross it.

Table 1. Summary Comparison of Alternatives

Impact Topics	Alternative A	Alternative B
Vegetation - Removal of Vegetation	Long-term, minor direct impacts to vegetation. No indirect impacts to vegetation. No cumulative impacts to vegetation.	Long-term, minor direct impacts to vegetation. No indirect impacts to vegetation. Minor cumulative impacts to vegetation.
Vegetation - Intrusion of Exotic and Invasive Species	No direct impacts to vegetation. Long-term, minor indirect impacts to vegetation. No cumulative impacts to vegetation.	No direct impacts to vegetation. Long-term, minor indirect impacts to vegetation. Minor cumulative impacts to vegetation.
Cultural Landscapes - Utilization of Bucket Truck for Line Stringing	N/A - No buckets trucks would be utilized for the "No Action" alternative.	Short-term, minor direct impacts to cultural landscapes. No indirect impacts to cultural landscapes. No cumulative impacts to cultural landscapes.
Cultural Landscapes - Utilization of Construction Equipment	N/A - No construction equipment would be utilized for the "No Action" alternative.	Short-term, minor direct impacts to cultural landscapes. No indirect impacts to cultural landscapes. No cumulative impacts to cultural landscapes.
Cultural Landscapes - Presence of the Line	Long-term, minor direct impacts to cultural landscapes. No indirect impacts to cultural landscapes. No cumulative impacts to cultural landscapes.	Long-term, minor direct impacts to cultural landscapes. No indirect impacts to cultural landscapes. Minor cumulative impacts to cultural landscapes.
Viewshed - Utilization of Bucket Truck for Line Stringing	N/A - No buckets trucks would be utilized for the "No Action" alternative.	Short-term, minor direct impacts to the viewshed. No indirect impacts to the viewshed. No cumulative impacts to the viewshed.
Viewshed - Utilization of Construction Equipment	N/A - No construction equipment would be utilized for the "No Action" alternative.	Short-term, minor direct impacts to the viewshed. No indirect impacts to the viewshed. No cumulative impacts to the viewshed.
Viewshed - Presence of the Line	Long-term, minor direct impacts to the viewshed. No indirect impacts to the viewshed. No cumulative impacts to the viewshed.	Long-term, minor direct impacts to the viewshed. No indirect impacts to the viewshed. Minor cumulative impacts to the viewshed.
Visitor Activities - Use of Trail by Visitors	Short-term minor, direct impacts to visitor activities. No indirect impacts to visitor activities. No cumulative impacts to visitor activities.	Short-term minor, direct impacts to visitor activities. No indirect impacts to visitor activities. Minor cumulative impacts to visitor activities.
Visitor Activities - Removal of Vegetation	Short-term, minor direct impacts to the visitor activities. No indirect impacts to visitor activities. No cumulative impacts to visitor activities.	Short-term, minor direct impacts to the visitor activities. No indirect impacts to visitor activities. Minor cumulative impacts to visitor activities.
Transportation - Line Stringing	N/A - Stringing of the line would not occur for the "No Action" alternative.	Short-term, minor direct impacts to transportation. No indirect impacts to transportation. No cumulative impacts to transportation.

5.0 Affected Environment

Fieldwork for the project area was conducted on May 12, 2010. An Environmental Report for the entire proposed transmission line which discusses the methodology and findings of the fieldwork is included for review (Appendix C).

5.1 Existing Conditions/Baseline

The proposed transmission line would cross BRP property perpendicularly for approximately 885 linear feet. The crossing would be located south of Asheville, between NC Highway 191 (Brevard Road) and Interstate 26 near French Broad River mile 158 and near BRP Milepost 393. At that location, the new line would run parallel to the existing double-circuit lattice steel tower line which was built in the early 1970's as a replacement for a lower voltage wood-pole line. The existing ROW is 100 feet wide (50 feet on either side of the center line of the existing line). To accommodate the new line, PEC would extend the existing ROW 43 feet to the west. Land area evaluated for this assessment totals approximately 2 acres. Three habitat types are present in the corridor: mixed pine-hardwood forest, riparian forest, and wetlands. The riparian forest area includes small unnamed tributaries. A map of the proposed crossing is included for review (Figures 2 and 4).

The mixed pine-hardwood forest is well-developed and comprises a closed-canopy dominated by deciduous hardwood trees on mesic soils. There is a diverse assemblage of deciduous and evergreen tree species in the canopy and understory, shade-tolerant shrubs, and a sparse groundcover. A list of plant species observed in this area is included for review (Appendix H, Table 1).

On both edges of the existing ROW, the mixed pine-hardwood forest is exposed to greater amounts of solar radiation, wind, and routine ROW maintenance. These increased exposures have changed the physical characteristics of the mixed pine-hardwood forest in this location. Tree canopy is reduced due to periodic maintenance along the existing transmission line corridor; the thickness of the understory is increased as more sunlight reaches the ground due to ROW clearing. A list of plant species observed in this area is included for review (Appendix H, Table 2).

The riparian forest lies parallel to the streams on site and includes one small wetland area. The riparian forest area represents the interface between the aquatic and upland areas on site and thus, the vegetation in the riparian area has characteristics of both aquatic and upland habitats. Many of the plant species in the riparian area require increased amounts of water and are adapted to alluvial soils with shallow water table conditions. Tree growth rate is high and vegetation under the canopy is denser and includes a variety of shrubs, grasses, and other herbaceous species. A list of plant species observed in this area is included for review (Appendix H, Table 3).

The only wetland within this section of the BRP corridor abuts the stream segment north of the BRP motor road. It is approximately 0.03 acre and is likely inundated during flood events. Not all of this wetland is located in the newly proposed ROW. A diversity of herbaceous species is present within this wetland. A list of plant species observed in this area is included for review (Appendix H, Table 4).

There are two small streams located within this section of the BRP corridor. Both are unnamed tributaries to the French Broad River and classified as Class “C” waters by the NC Division of Water Quality. The stream segment north of the BRP motor road is adjacent to an old, abandoned road bed but is of good quality. This stream is approximately 6 feet in width and its banks appear to be stable with good vegetative cover. The stream segment south of the BRP motor road is narrow and is in fair condition as it has an incised stream bed and vertical stream banks. The stream is approximately 2 feet wide, and adjacent to the frequently used Mountains to Sea Trail. This stream flows out of the existing transmission line corridor south of the BRP property boundary.

As noted in the lists provided in Appendix H, there are exotic/invasive species present within the proposed and existing ROW. These species were: Russian olive (*Elaeagnus angustifolia*), common privet (*Ligustrum sinense*), Oriental bittersweet, English ivy (*Hedera helix*), Japanese honeysuckle (*Lonicera japonica*), multiflora rose (*Rosa multiflora*), and Chinese wisteria (*Wisteria sinensis*). Russian olive and Oriental bittersweet were the most abundant of the exotic/invasive species observed during the site visit.

The environmental setting for the proposed activities and a brief summary of those elements of the environment that could potentially be affected by the proposed project will be discussed below. Affected environments are consistent with impact topics selected for further analysis (Section 3.1).

5.1.1 Natural Resources - Vegetation

The section of the BRP being analyzed is in the Broad Basin ecoregion, which is mountainous and contains a wide variety of vegetation, generally determined by slope and altitude. Vegetation within the assessment area is consistent with vegetation found throughout the mountainous region of western North Carolina. An explanation of habitat types found within the corridor can be found in Section 5.1 above.

The vegetative make up at the site and habitat types identified (mixed pine-hardwood forest, riparian forest, and wetland) could not be considered unique or rare and are commonly found in this region. A comprehensive list of species found within the BRP corridor is included for review (Appendix I).

Plant species growing within the ROW corridor and “danger trees” (those trees, outside of the maintained ROW corridor, which are tall enough to contact the conductor should the tree fall or be blown into the ROW) that pose a threat to safe and reliable operation of the transmission line would be removed from the corridor. ROW clearing across the BRP would occur during the dormant season.

Periodic maintenance of the ROW would be required to ensure vegetation is controlled and safety clearances are maintained. The affected environment would consist mostly of mixed pine-hardwood forest and riparian forest canopy trees.

5.1.2 Cultural Resources – Cultural Landscapes

Cultural landscapes are defined by the NPS as “a reflection of human adaptation and use of natural resources and is often expressed in the way land is organized and divided, patterns of settlement, land use, systems of circulation, and the types of structures that are built. The character of a cultural landscape is defined both by physical materials, such as roads, buildings, walls, and vegetation, and by use reflecting cultural values and traditions” (DO #28: Cultural Resource Management Guideline, 1998). The existing transmission line and proposed transmission line corridor are included in the cultural landscape as viewed from the BRP and its overlooks. Areas of the landscape that are affected are described in Section 5.1.3 below and in Section 6.4 of the “Probable Visual Effects Analysis” (Appendix A).

5.1.3 Visual Resources - Viewshed

The BRP location was selected to provide the best in a variety of scenic, historic, and natural features that evoke the regional image of the central and southern Appalachian Mountains. To maximize scenic views and give visitors the impression that they are in a park with boundaries to the horizon, the BRP was located in mountainous terrain that roads would normally have avoided. The NPS is also charged with conserving the scenery and providing opportunities for high quality scenic and recreational experiences along the BRP and within the corridor through which it passes.

The existing transmission line corridor can be seen from the BRP and the proposed transmission line corridor would be seen as well. As stated in Section 6.4 of the “Probable Visual Effects Analysis” (Appendix A):

Traveling north or south on the BRP, only the existing line’s six conductors are visible on approach to the point where existing line crosses the BRP. Additionally, the two overhead ground wires are visible above the conductors, but because of their small diameter and height, which is significantly above a normal 20 degree vision cone (i.e., outside the peripheral line of sight), they are insignificant. The lowest conductors of the six that are present are no lower than approximately 62-feet above the BRP surface. On approach, traveling at 40 miles per hour in either direction, the conductors become visible approximately 6-7 seconds before reaching the crossing point (at a distance of approximately 350 feet from the crossing in both directions). They are, in effect, only seen for approximately 4 seconds traveling in either direction due to their height. At approximately 150 feet from the crossing in either approach direction, the conductors essentially fade from view because they are well above a normal 20 degree vision cone. The following photographs display the existing line’s conductors as they come in to view when traveling north and south on the BRP.



View of Existing Line Conductors Looking North (from Section 6.4 of the “Probable Visual Effects Analysis (Appendix A)). “↑” denotes location of conductors; conductors have been highlighted in photo for visibility.



View of Existing Line Conductors Looking South (from Section 6.4 of the “Probable Visual Effects Analysis (Appendix A)). “↑” denotes location of conductors; conductors have been highlighted in photo for visibility..

The BRP passes under the existing line between structures #19 and #20. Structure #19 is not visible due to topography and a vegetated buffer zone that is maintained across the line corridor adjacent to the BRP. At the crossing point, structure #20 is completely visible on the north side of the BRP against the sky at a distance of approximately 650 feet. Traveling in

either direction, the view of this structure only opens up for approximately 400 feet along the BRP on each side of the crossing point at a very sharp angle to the direction of travel (approximately 60-degrees and increasing to 90-degrees at the crossing point). Although small trees are present in the transmission line corridor between the BRP and structure #20, they are not of sufficient height at the present time to provide any significant degree of screening as shown in the following photograph.



View from the Blue Ridge Parkway Looking North Toward Existing Structure #20 (from Section 6.4 of the “Probable Visual Effects Analysis (Appendix A))

The visual character of an area is a function of the terrain, land cover, and land use. The assessment area consists of extremely hilly and mountainous areas with steep ridges and low valleys. These characteristics decrease the line’s impact on the view area landscape; however, portions of the proposed transmission line would be visible from BRP overlooks.

This topic is further discussed in the “Probable Visual Effects Analysis” included for review (Appendix A)

5.1.4 Visitor Use and Experience – Visitor Activities

Visitors to the BRP enjoy many outdoor activities and sight seeing. Although no designated pull-out or overlook exists at the location of the proposed transmission line corridor, the frequently used Mountains to Sea Trail is located within the assessment corridor.

The Mountains to Sea Trail stretches from Clingman's Dome in the Great Smoky Mountains National Park to Jockey's Ridge State Park by the Atlantic Ocean. The mainline distance is 935 miles. The segments of Mountains to Sea Trail along the Blue Ridge Parkway were designated as National Recreation Trail in 2005. Initial ROW clearing would occur during the dormant season (i.e. winter). The parkway road is often closed to vehicular traffic in the winter months (November-March) depending on the weather, which should reduce the potential for hikers on the trail. Initially, upon completion of the proposed line, portions of the line might be visible from the trail.

5.1.5 Socioeconomic Environment - Transportation

During installation of the conductors and shield wires, traffic on the BRP would be temporarily stopped. Stopping traffic is unavoidable during this process as each wire must be strung over the motor road and suspended with bucket trucks. Installation of the line would most likely occur in the spring following initial clearing of the ROW. Signage and flagmen would be strategically placed on the motor road to warn travelers of on-going construction.

6.0 Environmental Consequences

6.1 *Introduction and Methodology*

This section addresses the potential impacts under each of the impact topics discussed in the "Affected Environment" section (Section 5.0) for each of the alternatives. Alternative A (No Action) is compared to Alternative B (Preferred Alternative) to determine impacts to resources. In the absence of quantitative data, best professional judgment was used.

Potential impacts of each alternative are described in terms of intensity (negligible, minor, moderate, major), duration (short- or long-term); type (beneficial or adverse); direct vs. indirect impacts; and cumulative impacts. Definitions of these descriptors are included below. NPS policy also requires that "impairment" of resources be evaluated in all environmental documents.

6.1.1 Intensity

Intensity: The intensity of the impact is described as negligible, minor, moderate, and major. Intensity is variable with each impact topic, therefore, intensity is further described in each impact topic.

6.1.2 Duration

Duration: The duration of the impact is described as short-term or long-term. Duration is variable with each impact topic; therefore, duration is further described in each impact topic.

6.1.3 Type

A beneficial impact induces positive change in the condition or appearance of the resource or a change that moves the resource toward a desired condition. An adverse impact induces change that declines, degrades, and/or moves the resource away from a desired condition or detracts from its appearance or condition.

6.1.4 Direct vs. Indirect Impacts

Direct effects are caused by the action and occur at the same time and place. Indirect effects are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems.

6.1.5 Cumulative Impacts

The CEQ regulations to implement NEPA require the assessment of cumulative impacts in the decision making process for federal projects. Cumulative impacts are defined as “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions” (40 CFR 1508.7).

6.1.6 Impairment of (Park) Resources or Values

In addition to determining the environmental consequences of the preferred and other alternatives, the 2006 NPS Management Policies and DO-12, require analysis of potential effects to determine if the Preferred Alternative or selected actions would impair (park) resources. 'Impairment is an impact, that in the professional judgment of the responsible NPS manager, would harm the integrity of park resources or values, include the opportunities that otherwise would be present for the enjoyment of those resources or values' (NPS 2006b). As directed in a memorandum from the NPS dated July 6, 2010, the impairment determination for the New Asheville - Enka 115kV West Line Crossing of the Blue Ridge Parkway Corridor is included as Appendix J.

6.2 Natural Resources

A. Vegetation – Alternative A (No Action)

The “No Action” alternative would require no new impacts to vegetation at the site. Under the no action alternative, the current electrical configuration within the BRP corridor would remain as it is: two lines on common structures within an existing 100-foot ROW. Under this alternative, there would be no action taken by the NPS on a request for a special use permit by PEC. Maintenance would continue as it has on the existing ROW including field inspections and selective tree removal within the ROW and immediately adjacent to the ROW for danger trees. Even if the proposed project is not approved, maintenance on the existing ROW will continue as it has in the past and impacts to vegetation would remain the same. Continued maintenance and removal of vegetation in the existing ROW

results in direct, long-term minor adverse impacts to localized vegetation. Adverse impacts are considered minor because low-growing vegetation is able to repopulate the existing ROW corridor and any additional removal of vegetation would be minimal. The “No Action” alternative would not cumulatively contribute to impacts to vegetation with regards to the removal of vegetation.

Maintenance of the existing ROW may provide opportunity for invasive species to spread into the newly cleared areas and the adjacent forested areas. Adverse effects associated with invasive species would result in indirect, long-term minor adverse impacts to localized vegetation. Adverse impacts are considered to be minor because vegetation edges would remain the same and not increase in length regardless of routine maintenance at the site. The “No Action” alternative would not cumulatively contribute to impacts to vegetation with regards to the introduction of exotic and invasive species.

The “No Action” alternative would not result in unacceptable impacts to vegetation or values.

B. Vegetation – Alternative B (Preferred Alternative)

The preferred alternative would require vegetation to be cleared from the new ROW. Periodic maintenance will continue on the existing ROW and would be required on the new ROW, as well. Maintenance activities would include the treatment and/or removal of vegetation that poses a threat to the safe and reliable operation of the transmission line. Removal of vegetation in the ROW would result in direct, long-term minor adverse impacts to localized vegetation. Adverse impacts are considered minor because low-growing vegetation would be able to repopulate the ROW corridor. Clearing of the proposed ROW may provide opportunity for invasive species to spread into the newly cleared areas through the shifting of vegetation edges. Adverse effects associated with invasive species would result in indirect, long-term minor adverse impacts to localized vegetation. Adverse impacts are considered to be minor because vegetation edges would not increase in length but instead would be shifted laterally to the west along the new edge of ROW. Creation of vegetation edges may facilitate the creep of exotic and invasive species into an area.

Cumulative impacts to vegetation under the preferred alternative are similar to and included those impacts from the existing ROW maintenance, specifically ongoing periodic cutting of vegetation in the ROW (existing and proposed). Because PEC has modified the proposed transmission line to a vertical configuration in the new ROW significantly reducing the new ROW width and because PEC would implement the landscape plan on pages 46 and 47 of the “Probable Visual Effects Analysis” (Appendix A), these impacts are considered minor. Adverse cumulative impacts to vegetation are not likely to be significant.

6.3 Cultural Resources

A. Cultural Landscapes – Alternative A (No Action)

The “No Action” alternative would require no new impacts to vegetation and no new transmission towers or lines. Under the no action alternative, the current electrical configuration within the BRP corridor would remain as it is: two lines on common structures within an existing 100-foot ROW. Under this alternative, there would be no action taken by the NPS on a request for a special use permit by PEC. Maintenance would continue as it has on the existing ROW including field inspections and selective tree removal within the ROW and immediately adjacent to the ROW for danger trees. Even if the proposed project is not approved, maintenance on the existing ROW will continue as it has in the past and impacts to cultural landscapes would remain the same. The presence of the existing line results in direct, long-term minor adverse impacts to the cultural landscape as seen from the BRP and overlooks. Adverse impacts are considered minor because PEC determined that the existing line is only visible from four locations along the BRP, one area being where the line actually crosses the motor road.

The “No Action” alternative would not cumulatively contribute to impacts to the cultural landscape. The “No Action” alternative would not result in unacceptable impacts to cultural landscapes or values

B. Cultural Landscapes – Alternative B (Preferred Alternative)

The existing transmission line and proposed transmission line corridor are included in the cultural landscape as viewed from the BRP and its overlooks.

TRC completed an intensive archaeological survey of two areas where the mitigation for the proposed transmission line project would potentially result in ground disturbance on BRP property. The work was conducted to ensure compliance with Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR 800 (*Protection of Historic Properties*), and took place under the terms of U.S. Department of the Interior Archeological Resources Protection Act (ARPA) Permit BLRI 2011-001. The “Final Report” from TRC is included for review in Appendix E and the NPS Assessment of Action Having an Effect on Cultural Resources checklist is included in Appendix L.

The presence of the completed line would result in direct, long-term minor adverse impacts to the cultural landscape as seen from the BRP and overlooks. Adverse impacts are considered minor because PEC proposes several visual impact reduction techniques based on carefully selected transmission structure types, material finishes, and locations. These techniques would not only minimize visual recognition of the new line from key vistas and overlooks, but would also be effective in reducing or eliminating the current lines’ visibility. The landscape would be similar to what is currently seen from the BRP overlooks.

During stringing of the line, equipment staging (including bucket trucks) would occur on the shoulder of the motor road. This equipment would be seen by motorists using the motor road resulting in direct, short-term minor adverse impacts to localized cultural landscape as seen from the BRP. Adverse impacts are considered minor because of the short duration. Bucket trucks would be removed from the BRP each night and the stringing of the conductors and shield wires could each be completed in less than one day.

Cumulative impacts that might impact cultural landscapes as seen from the BRP include the wider ROW, additional overhead lines, and continued maintenance on the existing line. PEC has modified the transmission line to a vertically stacked (phase over phase) conductor configuration in the new ROW and would be using a portion of the existing ROW, thereby significantly reducing the width of new ROW (and width of the ROW as a whole) and reducing the amount of vegetation that will be removed. Section 6.0 and 7.0 of the “Probable Visual Effects Analysis” (Appendix A) detail the placement of the towers, sag of the transmission line, and materials used in the infrastructure to minimize impact and blend the proposed transmission line in with the adjacent existing transmission line. Adverse cumulative impacts to cultural landscapes are not likely to be significant.

6.4 Visual Resources

A. Viewshed – Alternative A (No Action)

The “No Action” alternative would require no new impacts to vegetation and no new transmission towers or lines. Under the no action alternative, the current electrical configuration within the BRP corridor would remain as it is: two lines on common structures within an existing 100-foot ROW. Under this alternative, there would be no action taken by the NPS on a request for a special use permit by PEC. Maintenance would continue as it has on the existing ROW including field inspections and selective tree removal within the ROW and immediately adjacent to the ROW for danger trees. Even if the proposed project is not approved, maintenance on the existing ROW will continue as it has in the past and impact to the viewshed would remain the same. The presence of the existing line results in direct, long-term minor adverse impacts to localized visual resources on the BRP. Adverse impacts are considered minor because of the short duration the line is visible when traveling at 45 miles per hour.

The “No Action” alternative would not cumulatively contribute to impacts to the viewshed. The “No Action” alternative would not result in unacceptable impacts to the viewshed or values

B. Viewshed – Alternative B (Preferred Alternative)

As stated in Section 6.0 of the “Probable Visual Effects Analysis” (Appendix A):

To fully understand, assess, and compare how various transmission line construction practices may affect views from the BRP, PEC conducted a thorough field inspection to identify points along the BRP where the existing

line is currently visible. Determination of the locations from which the existing lines are currently seen from the BRP, it was postulated, would be a reasonable “predictor” of where the proposed line would possibly be seen since it would be running parallel to the existing tower line. The field investigation led to the conclusion that the existing tower line is only visible from a pull-off along the BRP at Milepost 394.5, the French Broad Overlook, the BRP French Broad River Bridge, and at the point where it crosses the BRP.

During stringing of the line, equipment staging (including bucket trucks) would occur on the shoulder of the motor road. This equipment would be seen by motorists using the motor road resulting in direct, short-term minor adverse impacts to localized visual resources on the BRP. Adverse impacts are considered minor because of the short duration. Bucket trucks would be removed from the BRP each night and the stringing of the conductors and shield wires could each be completed in less than one day.

The presence of the completed line would result in direct, long-term minor adverse impacts to localized visual resources on the BRP. Adverse impacts are considered minor because of the short duration the line would be visible when traveling at 45 miles per hour. Additionally, the visibility of the conductors, towers, and cleared ROW would be minimal. A landscaping plan has been developed to screen the north side of the BRP. This landscaping plan is described on pages 46 and 47 of the “Probable Visual Effects Analysis” (Appendix A).

Cumulative impacts that might impact the viewshed associated with the BRP include the wider ROW, additional overhead lines, and continued maintenance on the existing line. PEC has modified the transmission line to a vertically stacked (phase over phase) conductor configuration in the new ROW and would be using a portion of the existing ROW, thereby significantly reducing the width of the new ROW (and width of the ROW as a whole) and reducing the amount of vegetation that will be removed.. Section 6.0 and 7.0 of the “Probable Visual Effects Analysis” (Appendix A) detail the proposed placement of the towers, sag of the transmission line, and materials used in the infrastructure to minimize impact and blend the proposed transmission line in with the adjacent existing transmission line. PEC would also implement the landscape plan that will screen the proposed and existing ROW. Adverse cumulative impacts to viewsheds are not likely to be significant.

6.5 Visitor Use and Experience

A. Visitor Activities – Alternative A (No Action)

The “No Action” alternative would require no new impacts to the Mountains to Sea Trail at the site; although maintenance activities would continue in the existing line ROW. Under the no action alternative, the current electrical configuration within the BRP corridor would remain as it is: two lines on common structures within an existing 100-foot ROW. Under this alternative, there would be no action taken by the NPS on a request for a special use permit

by PEC. Maintenance would continue as it has on the existing ROW including field inspections and selective tree removal within the ROW and immediately adjacent to the ROW for danger trees. Even if the proposed project is not approved, maintenance on the existing ROW will continue as it has in the past and impacts to visitor activities would remain the same. The existing transmission line and continued maintenance and removal of vegetation in the existing ROW results in direct, short-term minor impacts on use of the section of the Mountains to Sea Trail through the ROW. Adverse impacts are considered minor in both cases because maintenance to the ROW which could affect use of the trail would be of short duration and only occur every few years.

The “No Action” alternative would not cumulatively contribute to impacts to visitor activities with regards to use of the trail. The “No Action” alternative would not result in unacceptable impacts to visitor activities or values

B. Visitor Activities – Alternative B (Preferred Alternative)

A small portion (approximately 200 feet) of the Mountains to Sea Trail is located within the newly proposed ROW. Portions of the new transmission line and ROW would be seen from the trail as the trail crosses the ROW. The preferred alternative would have direct, short-term minor impacts on use of the section of the trail through the ROW. Adverse impacts are considered minor because the trail already passes through the existing ROW. The trail would be directly impacted by clearing and maintenance, however, this impact would be minor because hikers would have a limited and temporary view of the transmission line corridor. Impacts are considered short term because PEC would implement the landscaping plan as described on pages 46 and 47 of the “Probable Visual Effects Analysis” (Appendix A) and the impact would only last until the landscaping has matured. Installation of the new ROW would not create a new impact to the trail but instead a short continuation of an existing impact around the trail.

PEC would divert hikers and trail users during clearing, as trees would be felled on the proposed ROW which includes an approximately 200-foot portion of the trail. PEC would provide signage and a detour to guide trail users out of the active clearing area and into safe locations. ROW clearing as proposed in the preferred alternative would have a direct, short-term minor adverse impact on use of the section of the trail through the ROW. Adverse impacts are considered minor because initial clearing that could impact use of the trail would be of short duration and during a time of low probable usage (i.e. winter). Periodic maintenance of the corridor would be infrequent and should not affect use of the trail.

Cumulative impacts that might result in impacts to visitor activities (i.e. use of the trail) include presence of the existing line and continued vegetation maintenance on the existing ROW. Cumulative impacts are considered minor because PEC would be utilizing a portion of the existing ROW which enables a minimized ROW width of 43 feet, a reduction in clearing limits, a reduction of length of trail impacted, landscaped screening of ROW, and short duration of vegetation maintenance that would only occur every few years. The proposed action would

be unlikely to affect long term usage of the trail. Adverse impacts to visitor activities are not likely to be significant.

6.6 Socioeconomic Environment

A. Transportation – Alternative A (No Action)

The “No Action” alternative would not result in direct, indirect, or cumulative impacts to traffic or travel on the BRP. The “No Action” alternative would not result in unacceptable impacts to transportation or values

B. Transportation – Alternative B (Preferred Alternative)

During installation of the conductors and shield wires, traffic on the BRP would be temporarily stopped. Signage and flagmen would be strategically placed on the motor road to warn travelers of on-going stringing activities. Temporary traffic control would result in direct, short-term minor adverse impacts to transportation on the BRP. Adverse impacts are considered minor because of the short duration. Traffic would only need to be controlled during stringing of the line; this activity could occur in one day.

Cumulative impacts associated with traffic control would not occur. Use of traffic control would occur during stringing the line and would occur one time for a short duration. Lasting impacts are not expected.

Adverse impacts to transportation are not likely to be significant.

7.0 Consultation and Coordination

PEC has expended significant effort to keep the landowners and regulatory agencies involved with this process informed of the proposed project and its progress. Scoping history is discussed in Section 2.3 above and all letters, agency responses and meeting minutes from relevant stakeholder meetings are included for review (Appendix B).

8.0 List of Preparers

ClearWater Environmental Consultants, Inc. was formed in 2002 as a professional environmental consulting firm devoted to environmental services in the areas of wetland delineation, stream evaluation, habitat assessments, threatened and endangered species surveys, NEPA/SEPA environmental assessments, Section 404/401/10 permitting, development planning, and consulting. ClearWater Environmental Consultants, Inc. located in Hendersonville, North Carolina, is positioned to handle projects throughout North Carolina and the upstate area of South Carolina and eastern Tennessee.

This document was prepared by ClearWater Environmental Consultants, Inc. with input from staff at BLRI.

ClearWater Environmental Consultants, Inc.

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9.0 Compliance with Federal and State Regulations

Three overarching environmental protection laws and policies guide the NPS in conducting NEPA analysis, these include:

- NEPA and its implementing regulations
- National Parks Omnibus Management Act of 1998 (NPOMA)
- NPS Organic Act

Other applicable NPS guiding laws, regulations, and policies include:

- Redwood National Park Act of 1978, As Amended
- National Park Service Management Policies 2006
- Authority for Authorizing Construction Permits (Special Use Permits)

The NPS is also required to comply with the following laws, executive orders, regulations, and policies in developing this EA.

- National Historic Preservation Act of 1966, As Amended (including Section 106)
- Federal Noxious Weed Act, 1975
- Executive Order 11593, Protection and Enhancement of the Cultural Environment
- Director's Order 28, Cultural Resource Management
- Clean Water Act
- Endangered Species Act
- Clean Air Act
- Archeological Resources Protection Act
- Native American Graves Protection and Repatriation Act
- Marine Mammal Protection Act
- NC Sediment and Erosion Control Act, 1973

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