

## **APPENDIX T**

**VISUAL IMPACT ASSESSMENT FOR PIPELINE SEGMENTS  
IN MONONGAHELA AND GEORGE WASHINGTON  
NATIONAL FORESTS, AND NATIONAL PARK SERVICE LANDS,  
INCLUDING THE APPALACHIAN NATIONAL SCENIC TRAIL  
AND SENECA STATE FOREST**



## **Atlantic Coast Pipeline**

# **Visual Impact Assessment for Pipeline Segments in Monongahela and George Washington National Forests, and National Park Service Lands, including the Appalachian National Scenic Trail and Seneca State Forest**

**Prepared by:**



**May 2017**

# ATLANTIC COAST PIPELINE

## VISUAL IMPACT ASSESSMENT FOR PIPELINE SEGMENTS IN MONONGAHELA AND GEORGE WASHINGTON NATIONAL FORESTS, AND NATIONAL PARK SERVICE LANDS, INCLUDING THE APPALACHIAN NATIONAL SCENIC TRAIL AND SENECA STATE FOREST

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**APPENDICES**

- Appendix A Field Survey Photo Pages
- Appendix B High-Resolution, Large-Format Full Visual Simulations

The full-size appendices to Visual Impact Assessment can be found on the FERC eLibrary site under FERC Accession No. 20170609-5196.

## ACRONYMS

ACP	Atlantic Coast Pipeline
ANST	Appalachian National Scenic Trail
ATC	Appalachian Trail Conservancy
Atlantic	Atlantic Coast Pipeline, LLC
BRP	Blue Ridge Parkway
DEM	Digital Elevation Model
EIS	environmental impact statement
FRV	Fundamental Resource Value
GIS	Geographic Information Systems
GWNF	George Washington National Forest
HDD	Hydraulic Directional Drill
KOP	Key Observation Point
LWCF	Land and Water Conservation Fund
MNF	Monongahela National Forest
MP	milepost
NPS	National Park Service
ROW	Right of Way
SIO	Scenic Integrity Objective
SMS	USFS Scenery Management System
SSF	Seneca State Forest
USDA	U.S. Department of Agriculture
U.S.C.	United States Code
USFS	U.S. Forest Service
USGS	United States Geological Survey
VIA	Visual Impact Analysis

## **1.0 INTRODUCTION**

### **1.1 OVERVIEW**

Atlantic Coast Pipeline, LLC (Atlantic), conducted a visual impact assessment (VIA) to describe conditions and potential visual impacts for the segments of the proposed Atlantic Coast Pipeline (ACP) that would cross the Monongahela National Forest (MNF) in West Virginia and George Washington National Forest (GWNF) in Virginia. This VIA also describes conditions in and potential impacts to views associated with the Appalachian National Scenic Trail (ANST), which is located on both private lands and the GWNF at the ACP crossing location; the Blue Ridge Parkway (BRP), which is administered by the National Park Service (NPS); and Seneca State Forest (SSF) in West Virginia, which receives funding from the NPS-administered Land and Water Conservation Fund (LWCF), and is thus subject to NPS oversight related to potential visual impacts. This VIA was completed by staff from ERM (Atlantic’s contractor), as well as staff from Truescape, Ltd, ERM’s subcontractor responsible for preparing visual simulations to support the visual assessment. This report presents findings of field studies and desktop analyses.

#### **1.1.1 Seen Area Analysis and VIA Study Area**

At the initiation of the VIA project, Atlantic met with the U.S. Forest Service (USFS) to understand the content and analyses that the USFS required for their decision-making process regarding consideration of visual impacts resulting from the proposed action.

A USFS memorandum dated September 14, 2015, states that a “seen area” analysis should be completed, including all land up to 5 miles from the ACP centerline up to 5 miles beyond the National Forest proclamation boundary (USFS, 2015). The seen area analysis is a required first step in evaluating visual impacts for the USFS (see Section 2). This analysis requires the use of topographic data in a Geographic Information System (GIS) to determine areas that would be visible from a given feature (in this case the ACP proposed route). The seen area analysis assumes clear weather and absolutely no intervening vegetation or structures (i.e., a “cleared ground surface” analysis). In this sense, the seen area analysis represents a “worst-case” scenario that requires verification through on-the-ground observations of actual views with existing vegetation and other features not included in the seen area topographic mapping.

Consistent with the USFS memo, the study area for this VIA consists of a 5-mile buffer around the ACP’s proposed centerline, as shown in Figure 1-1. Unless otherwise specified, the analyses in this VIA reflect the proposed route filed with FERC on July 18, 2016. The seen area analysis is discussed in more detail in Section 2.1.

#### **1.1.2 Proposed Action**

The ACP would cross approximately 5.2 miles of USFS-owned land within the MNF, 15.9 miles of USFS-owned land within the GWNF, and 4.8 miles of land subject to NPS oversight within the SSF. The landscape within the study area is generally characterized by mountainous terrain, largely covered by dense deciduous and evergreen forests. West of the Greenbrier River (within the MNF), the ACP corridor crosses the Appalachian Plateau

physiographic region, an area characterized by relatively flat ridgetops at approximately 4,400 to 4,800 feet above sea level, incised by stream and river valleys with elevations as low as 2,300 feet. East of the Greenbrier River (within the eastern MNF and western GWNF), the corridor is within the Valley and Ridge region. This area is characterized by narrow ridges running northeast-southwest, with maximum elevations between 3,200 and 3,800 feet, interspersed with broad stream and river valleys, often with elevations below 2,000 feet.

East of Staunton (within the GWNF Glenwood-Pedlar Ranger District), the corridor traverses through the Blue Ridge region, which reaches heights of approximately 3,500 feet along the BRP and ANST. River and stream valleys are often cleared and used for agriculture or livestock grazing, and also serve as north-south transportation routes.

The MNF and GWNF would be crossed by the AP-1 Mainline, which would consist of a 42-inch outside diameter pipeline. In non-agricultural areas, the AP-1 Mainline would require a nominal 125-foot wide construction right-of-way and a nominal 50-foot wide permanent right-of-way that would be converted from forest to herbaceous groundcover on USFS lands.

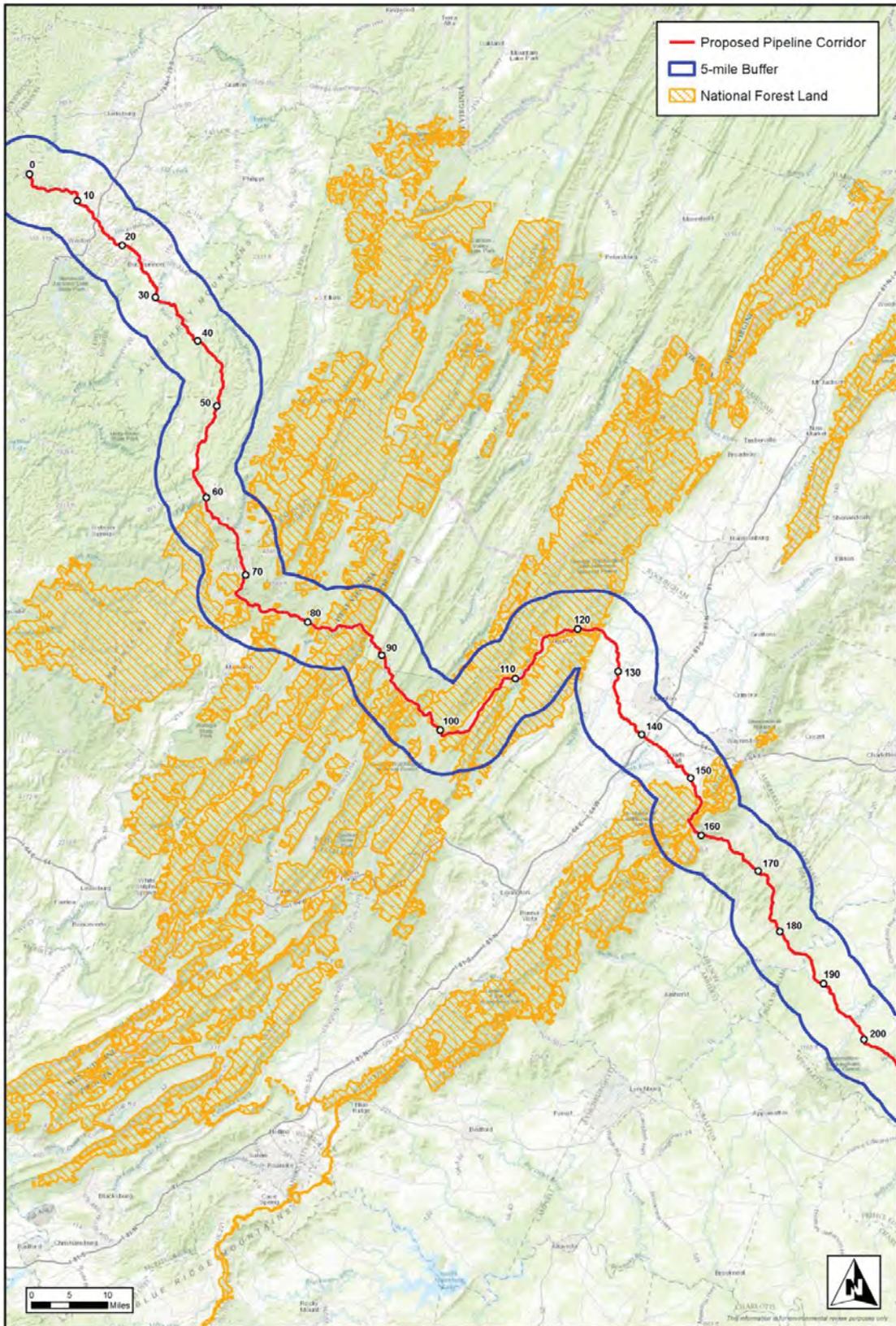
### **1.1.3 Contingency Analysis**

Under the Proposed Action, the ACP corridor would cross underneath the Blue Ridge Mountains (including the BRP and ANST) using a Hydraulic Directional Drill (HDD) method, from approximately milepost (MP) 157.9 to 158.8. The entry and exit points for the HDD would be located on private land within the GWNF proclamation boundary, and the actual crossing would be several hundred feet beneath the BRP and ANST. Atlantic expects the HDD to be successful, however it has also developed a contingency plan for crossing the BRP and ANST. Under the contingency plan, the ACP corridor would cross underneath the BRP and ANST, the surrounding USFS and NPS lands, and a small amount of surrounding private land using a Direct Pipeline Drill directional bore process. Under the contingency plan, the remainder of the ACP corridor on private lands beyond the Direct Pipeline Drill would consist of typical trenched pipeline construction on both sides of the Blue Ridge. Figure 1-2 shows the contingency route.

## **1.2 U.S. FOREST SERVICE SCENERY MANAGEMENT SYSTEM**

The information in this VIA, and particularly the evaluation of visual impacts in Section 4.0, is intended to be consistent with the USFS' Scenery Management System (SMS). The SMS is a "system for the inventory and analysis of the aesthetic values of National Forest lands" (U.S. Department of Agriculture [USDA], 1995), and is described in Agriculture Handbook 701, Landscape Aesthetics - A Handbook for Scenery Management. The SMS establishes a method for measuring the scenic value of lands in National Forests, according to the opinions of various types of viewers and USFS professionals and forest managers. It takes into account a wide variety of existing and desired landscape characteristics, such as (but not limited to) slope; vegetative cover type, pattern, height and distribution; soils; geology; and the "edge effect" where different landscape elements meet. This section describes the major concepts of the SMS relevant to the VIA, and also provides the SMS ratings for the portions of the MNF and GWNF potentially affected by the ACP.

Figure 1-1: VIA Study Area for the ACP

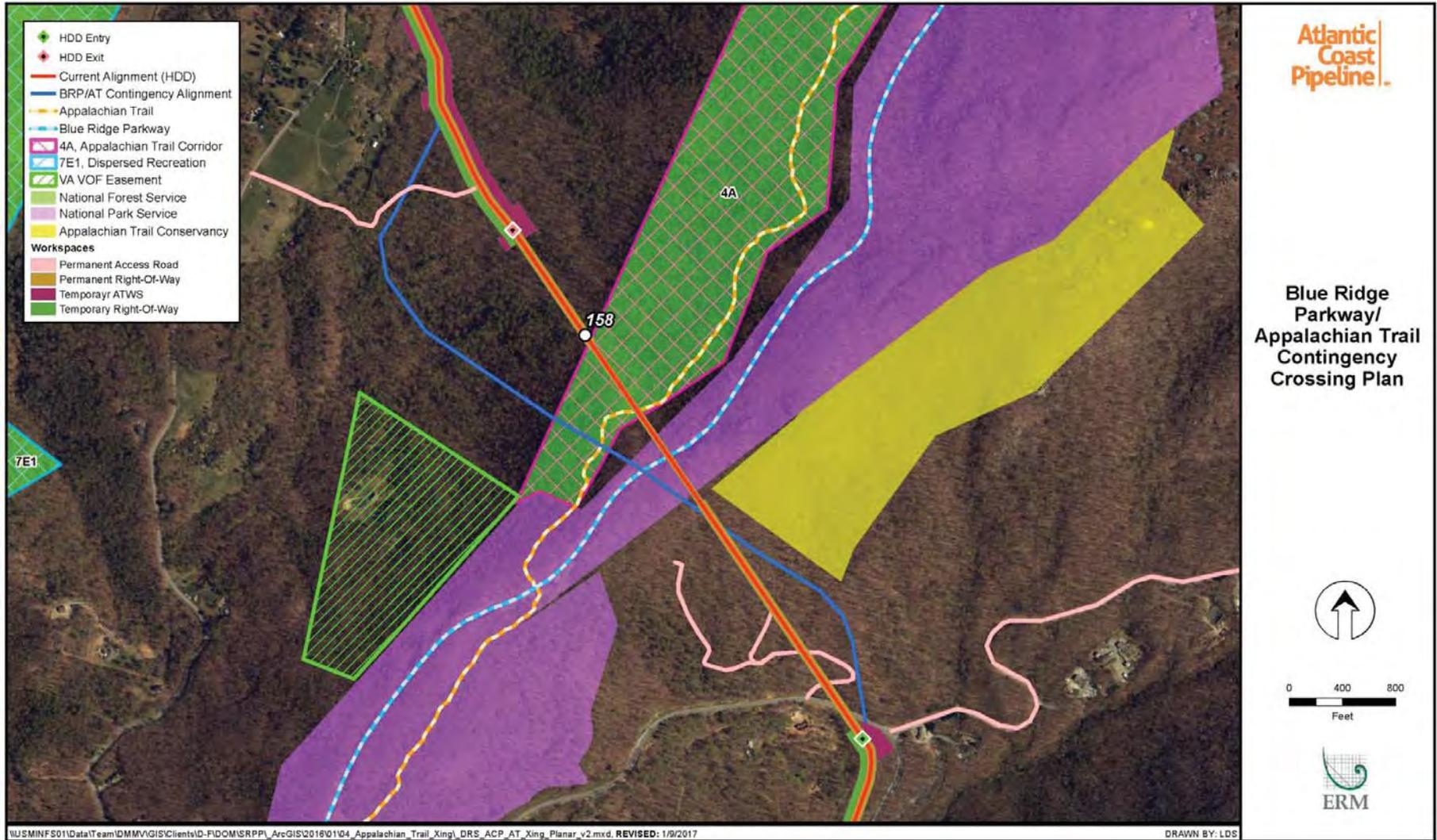


**Atlantic Coast Pipeline**  
Visual Impact Assessment Study Area  
National Forests

Atlantic Coast Pipeline  
ERM

FILE: \\USM\NF501\Data\Team\DMV\GIS\Clients\ID\FDOMSRPPI\_AmGIS\National\_Forests\Visibility\_Analysis\sva\_20160808\_acp\_SI\_20160808\_Overview.mxd | REVISED: 01/09/2017 | SCALE: 1:750,000 when printed at 11x17 DRAWN BY: EKP

Figure 1-2: Contingency Route



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### 1.2.1 Distance Zones

Distance zones are the generalized groupings used to describe how viewers see the landscape. The SMS identifies four distance zones:

- immediate foreground (0 to 300 feet);
- foreground (300 feet to 0.5 mile);
- middleground (0.5 mile to 4 miles); and
- background (4 miles to the horizon).

Immediate foreground and foreground views tend to highlight details ranging from individual leaves to individual trees. At this distance, details are important and individual forms are dominant. The middleground “is usually the predominant distance zone at which National Forest landscapes are seen, except for regions of...tall, dense vegetation.” At middleground distances, people distinguish individual tree forms, large boulders, and small openings in the canopy. Form, color, and texture remain dominant and pattern is important. In the background, “texture has disappeared and color has flattened, but large patterns of vegetation or rock are still distinguishable and landform, ridgelines, and horizontal lines are the dominant visual characteristics (USDA, 1995).”

### 1.2.2 Scenic Classes

Scenic classes recognize the idea that all National Forests have “value” as scenery. The classes, which range from 1 (most valuable scenery) to 7 (least valuable scenery) are a measurement that can be used to consistently evaluate the scenic value and relative scenic importance of a particular area. They are used in forest planning to compare values of scenery with other types of resources. The higher the scenic value (i.e., the lower the class number), the more important it is to maintain.

### 1.2.3 Concern Levels

Concern Levels are a measure of the degree of public importance placed on landscapes viewed from travelways and use areas. Concern levels are divided into three categories: 1, 2, and 3, with 1 being the highest level of concern for valued landscape scenery and 3 being the lowest. Protocols for assigning concern levels to travelways and use areas are provided in the SMS Handbook (USDA, 1995).

### 1.2.4 Scenic Attractiveness

Scenic Attractiveness is the primary indicator of the intrinsic scenic beauty of a landscape and of the positive responses it evokes in people. It helps determine landscapes that are important for scenic beauty based on commonly held perceptions of the beauty of landform, vegetation pattern, composition, surface water characteristics, land use patterns, and cultural features. The combination of these valued landscape elements are used in determining the measure of Scenic Attractiveness. Scenic Attractiveness classifications in the SMS inventory include Class A – Distinctive, Class B – Typical, and Class C – Indistinctive (USDA, 1995).

### 1.2.5 Scenic Integrity Objectives

Whereas distance zones, scenic classes, concern levels, and scenic attractiveness express existing conditions within a forest, Scenic Integrity Objectives (SIO) express the desired future aesthetic condition of a forest. “Scenic integrity is a continuum ranging over five levels of integrity from very high to very low” (USDA, 1995). SIO descriptions, as defined below, generally express a comparison to existing or preferred conditions (USDA, 1995):

- Very High: “landscapes where the valued landscape character ‘is’ intact with only minute if any deviations.”
- High: “landscapes where the valued landscape character ‘appears’ intact. Deviations may be present but must repeat the form, line, color, texture, and pattern common to the landscape character so completely and at such scale that they are not evident.”
- Moderate: “landscapes where the valued landscape character ‘appears slightly altered.’ Noticeable deviations must remain visually subordinate to the landscape character being viewed.”
- Low: “landscapes where the valued landscape character ‘appears moderately altered’ Deviations begin to dominate the valued landscape character being viewed but they borrow valued attributes such as size, shape, edge effect and pattern of natural openings, vegetative type changes or architectural styles outside the landscape being viewed.”
- Very Low: “landscapes where the valued landscape character ‘appears heavily altered’ Deviations may strongly dominate the valued landscape character.”

Based on discussions with USFS personnel, Atlantic understands that SIO designations do not exist for the MNF. At a March 4, 2016 meeting with Atlantic, the USFS agreed that Scenic Class (which is available for the MNF) would be an acceptable proxy for SIO. Atlantic understands that these two sets of designations are not the same. Scenic Classes are *descriptive*, while SIOs are *prescriptive*. For example, “heavily altered landscapes can be reclaimed [i.e., a higher SIO can be achieved] through future management activities and natural regeneration of vegetation” (USDA, 1995). Given the absence of SIO designations, scenic classes are the best available way to understand the ACP’s potential visual impacts on the MNF. Figure 1-3 shows the SIO designations for the portions of the GWNF within the VIA study area. Figure 1-4 shows the Scenic Classes for the portions of the MNF within the VIA study area.

Figure 1-3: Scenic Integrity Objectives, GWNF

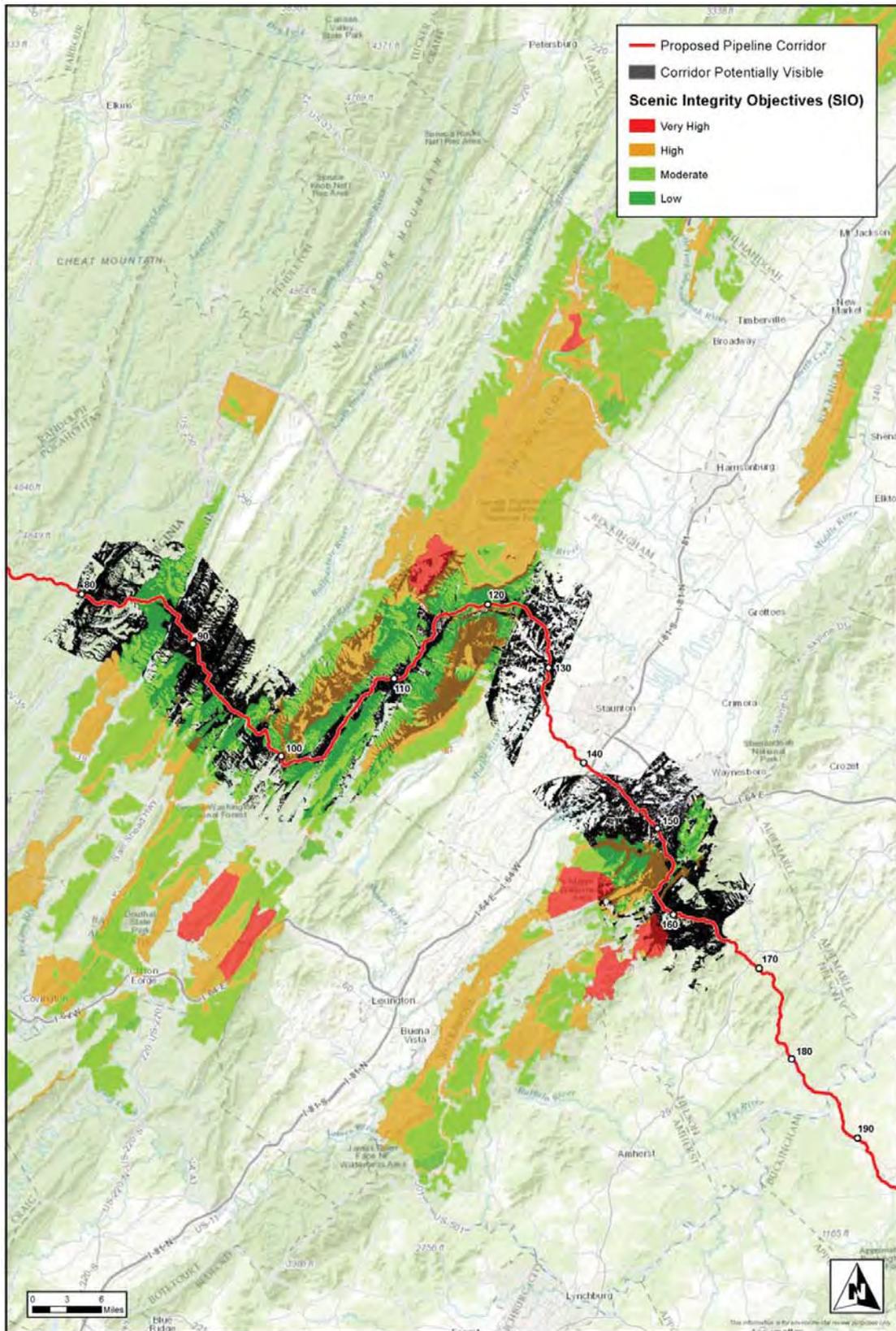
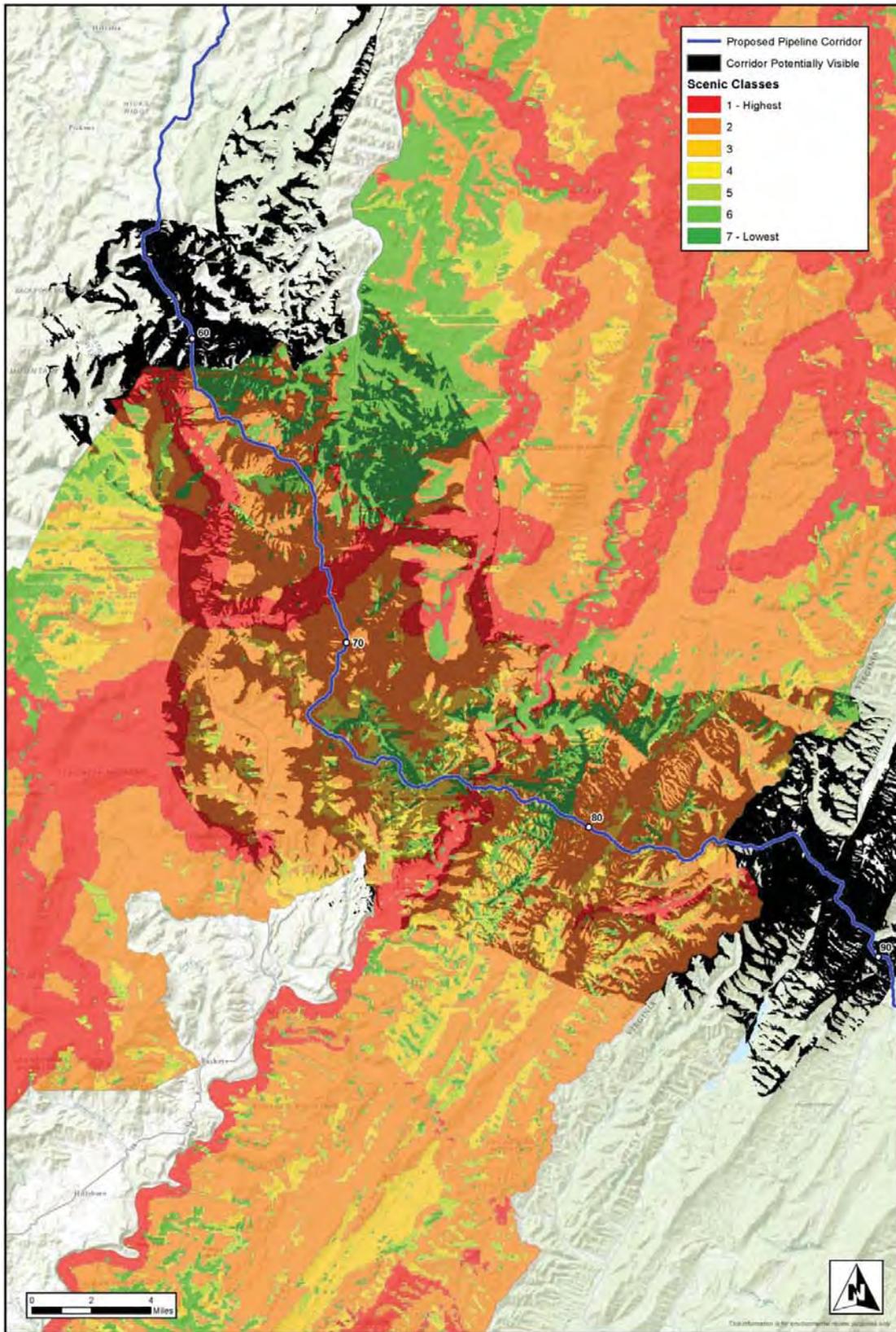


Figure 1-4: Scenic Classes, MNF



### 1.3 NATIONAL PARK SERVICE VISUAL IMPACT FRAMEWORK

The information in this VIA, and particularly the evaluation of visual impacts in Section 4.0, are intended to be generally consistent with NPS management designations and visual impact assessment techniques. The NPS does not have an agency-wide equivalent of the USFS SMS. Instead, the NPS manages visual resources and evaluates the visual impacts of proposed activities on a unit-by-unit basis. To the extent they are available, this VIA also addresses unit-specific visual resource management and assessment frameworks for the BRP and ANST.

#### 1.3.1 Blue Ridge Parkway

The segment of the BRP crossed by the ACP is within the “Scenic Character” management zone, as defined in the 2013 General Management Plan and environmental impact statement (EIS) for the BRP. The Scenic Character zone identifies “areas of the parkway that would emphasize protection and sightseeing opportunities of the scenic landscapes and natural and cultural settings of the central and southern Appalachian highlands” (NPS, 2013). The general intent of the Scenic Character zone is to maintain “the visual variety of the parkway road’s forested and pastoral/rural landscape settings consistent with early parkway design” (NPS, 2013).

While the Scenic Character management zone emphasizes high-quality visual experiences for BRP visitors, it does not require that views be absent of the evidence of human activity. As such, the intent of the Scenic Character management zone is generally comparable to that of Medium or High SIO designations in the GWNF.

As described in the BRP General Management Plan, NPS uses a Scenery Conservation System for the BRP, to

provide direction for inventory, analysis, and protection planning for desired conditions. This system is designed to maintain or improve the scenic landscape character and level of scenic quality of landscape areas viewed from parkway overlooks, vistas, and agricultural openings (NPS, 2013).

The basis for the NPS Scenery Conservation System is *The Blue Ridge Parkway Scenery Conservation System Guidebook*, a publication that is not readily available to the public, and that Atlantic has requested, but has not received from the NPS. Based on the information in the General Management Plan and EIS for the BRP, Atlantic understands that the Scenery Conservation System includes components that are similar to the USFS SMS, including a detailed inventory of existing scenic views, determinations of the sensitivity of those views to change, and identification of desired visual conditions (NPS, 2013). In addition,

scenery conservation works with the idea of a “Borrowed Landscape.” Maintaining scenery viewed from overlooks and along the parkway road involves working with 29 county governments, private landowners, developers, and other agencies. Because the scenery is borrowed from adjacent lands that are not administered by the National Park Service, the parkway’s scenery system is not a direct control “management” system (NPS, 2013).

The ACP right-of-way would cross only a relatively small amount of the NPS-administered land within the BRP viewshed. Most of the land crossed by the ACP right-of-way and visible from the BRP is therefore a Borrowed Landscape.

### 1.3.2 Appalachian National Scenic Trail

The National Trails System Act (16 United States Code [U.S.C.] 1241-1251) identifies the ANST as a National Scenic Trail. The National Scenic Trail designation identifies trails that “provide for maximum outdoor recreation potential and for the conservation and enjoyment of the nationally significant scenic, historic, natural, or cultural qualities of the areas through which such trails may pass” (16 U.S.C. 1242). The National Trails System Act does not specifically regulate visual resources (either within or external to the trail right-of-way), but does require that, “to the extent practicable, efforts shall be made to avoid activities incompatible with the purposes for which such trails were established” (16 U.S.C. 1246c).

The NPS planning and management framework for ANST includes the ANST Resource Management Plan (NPS, 2008) and ANST Foundation Document (NPS, 2014). The Foundation Document provides “basic guidance for planning and management decisions,” and identifies planning and data issues, needs, and studies to be developed (NPS, 2014).

Visual resources are the subject of one of the Foundation Document’s Significance Statements: “The Trail’s varied topography, ecosystem diversity, and numerous view points offer a visual showcase including wild, natural, wooded, pastoral, and historic environments” (NPS, 2014). Visual resources are also considered a Fundamental Resource and Value (FRV) — components that are intrinsic parts of the ANST’s identity and purpose. Specifically, the Foundation Document identifies FRVs for visual resources within and external to the trail right-of-way:

“Scenery along the Treadway. The Trail offers opportunities to view stunning scenery in proximity to the most populated areas of the United States. Within the boundaries of the protected trail corridor, visitors may see native wildlife and flowers, rustic cultural features, seasonal variations, and dynamic weather patterns” in diverse environments (NPS, 2014).

“Views Beyond the Corridor. Traversing the height of land, Trail visitors are afforded sweeping views of vast landscapes extending beyond the Trail corridor and are exposed to the splendid range of landforms and history along the Appalachian Mountains” (NPS, 2014).

While visual resources are unquestionably important for the ANST, no NPS-authored visual resource management guidelines or requirements are readily available. Indeed, the Foundation Document states that “a strategy is needed for protecting land that lies within important viewsheds and focus areas along the Trail, such as view points from mountaintops, balds, and prominent rock outcroppings (NPS, 2014).

Absent such a strategy, this VIA uses the principles of the USFS SMS and the BRP’s General Management Plan to evaluate visual impacts to the ANST. The visual resources management objectives for the ANST are assumed to be the same as the SIO for the nearest portion of the GWNF, or for the nearest segment portion of the BRP.

### **1.3.3 Seneca State Forest**

There are no readily available NPS-authored visual resource management guidelines or requirements for LWCF-recipient lands such as SSF. Although the SSF is not owned by the USFS, the MNF has mapped Scenic Classes within the SSF. Accordingly, this VIA uses the principles of the USFS SMS to evaluate visual impacts in the SSF. These evaluations reflect the MNF-provided Scenic Classes.

## 2.0 METHODS

Visual impacts are defined as the change in aesthetic value resulting from the introduction of modifications to the landscape. Atlantic initiated consultation with the USFS to identify and evaluate these impacts for the VIA. Impact assessment involved four primary steps, each of which is described below:

- Identify potentially visible areas based on terrain only by preparing “seen area” analysis, and identify Key Observation Points (KOP) in seen areas;
- Conduct field surveys to determine the extent to which existing natural and human-made features allow views from each KOP to the ACP project;
- Prepare simulations or other form of visual analysis to determine whether post-ACP visual conditions will meet SIOs; and
- Prepare SIA report, summarizing visual conditions and impacts.

### 2.1 SEEN AREA ANALYSIS AND IDENTIFICATION OF USFS KEY OBSERVATION POINTS

As described in Section 1.1.1., Atlantic prepared a seen area analysis as the initial step in evaluating visual impacts. The seen area analysis is based on the ACP preferred route (as mapped by Atlantic) and topography from 10-meter Digital Elevation Model (DEM) data provided by the United States Geological Survey (USGS). The analysis was performed using the Viewshed Analysis tool in ArcGIS, the industry standard for GIS mapping and analysis. The Viewshed Analysis tool creates a single polygon representing the portion of the earth’s surface that is potentially visible from at least one point along the ACP corridor, based on topography.

In addition to requesting the seen area analysis, the USFS provided lists of potential KOPs (along with latitude/longitude coordinates) to be evaluated in this study. Figures 2-1 through 2-3 show the seen area for the GWNF and MNF, as well as the originally-suggested KOPs. USFS selected these KOPs to represent locations where the ACP crosses or could potentially be seen from roads, trails and floatable rivers, and other recreational or publicly used areas within national forest lands (USFS, 2015). The GWNF and MNF did not request a “times seen” analysis (i.e., identification of KOPs that offered views of multiple segments of the corridor). Instead, Atlantic understood that the KOPs selected by GWNF and MNF represented views that were prominent and provided views of substantial segments (or multiple segments) of the corridor.

Table 2-1 includes the list of suggested KOPs, as well as a determination, based on field work (see Section 2.3), of whether existing vegetation or other conditions permitted actual views of the ACP from those KOPs. Atlantic assigned unique ID numbers to each of these points for ease of identification.<sup>1</sup>

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<sup>1</sup> The seen area analysis and KOP identification process were performed twice: once in October 2015, and again in March 2016. The second analysis was necessitated by a major ACP reroute in early 2016. That reroute resulted in the

As requested by the USFS in its September 2015 communication, Atlantic met with the USFS on October 1, 2015 at Dominion Virginia Power's Staunton, VA offices to review the seen area analysis and list of KOPs, particularly the potential (or lack of potential) for actual views of the ACP, in light of existing vegetation at each KOP. As a result of this review, several KOPs were removed from further evaluation due to the absence of actual views of the proposed pipeline corridor. The discussion at the October 1, 2015 meeting also touched on concerns about potential views of the pipeline right-of-way from the ANST within the Three Ridges Wilderness area, including Bee Mountain. As a result of the October 1 meeting, Atlantic added four KOPs (numbers 38 through 41 in Table 2-1) to supplement the list of KOPs provided by the USFS.

After announcement of the revised ACP route in February 2016, Atlantic re-initiated the KOP selection process with the USFS, provided a revised list of potential KOPs to the USFS, and discussed that list (and the visual impact assessment process in general) at a March 4, 2016 meeting with the USFS at the North River Ranger District in Harrisonburg, Virginia. The USFS provided a list of additional recommended KOPs via email on March 11, 2016. That additional list of KOPs comprises numbers 42 through 65 in Table 2-1.

As a result of consultation with the USFS, Atlantic further revised the ACP route in July 2016. The current proposed route runs north of Fort Lewis. As a result, KOPs 61 through 64 no longer provide a potential view of the ACP corridor. The current route would cross the Shenandoah Mountain Trail at approximately MP 98.7. While field surveys did not include this location, and no KOP was identified to address this crossing, Section 3.2.6 describes this location, and 4.1.3 discusses visual impacts at this location.

## **2.2 NPS KEY OBSERVATION POINTS**

In August 2016, the NPS met with Atlantic and indicated the need for additional analysis of visual impacts to the ANST, as well as in the SSF. In a comment letter submitted on October 7, 2016 to the FERC docket for the ACP project, the Appalachian Trail Conservancy (ATC) provided a list of recommended KOPs specific to the ANST. NPS confirmed that these KOPs should be evaluated as part of this VIA, and on October 18, 2016 also provided a map of KOPs to be evaluated in the SSF.

In total, NPS recommended evaluation of 17 KOPs (9 for the ANST and 8 for the SSF) where the ACP crosses or could potentially be visible from publicly accessible trails, roads and floatable rivers. Figures 2-4 and 2-5 show the NPS KOPs, while Table 2-2 lists the NPS KOPs, along with a determination, based on field work (see Section 2.3), of whether existing vegetation or other conditions permitted actual views of the ACP corridor. NPS also recommended that the previously identified KOP at the Three Ridges Overlook (USFS KOP 39) be revised to reflect the removal of trees that occurred at the overlook after the original images for KOP 39 were captured.

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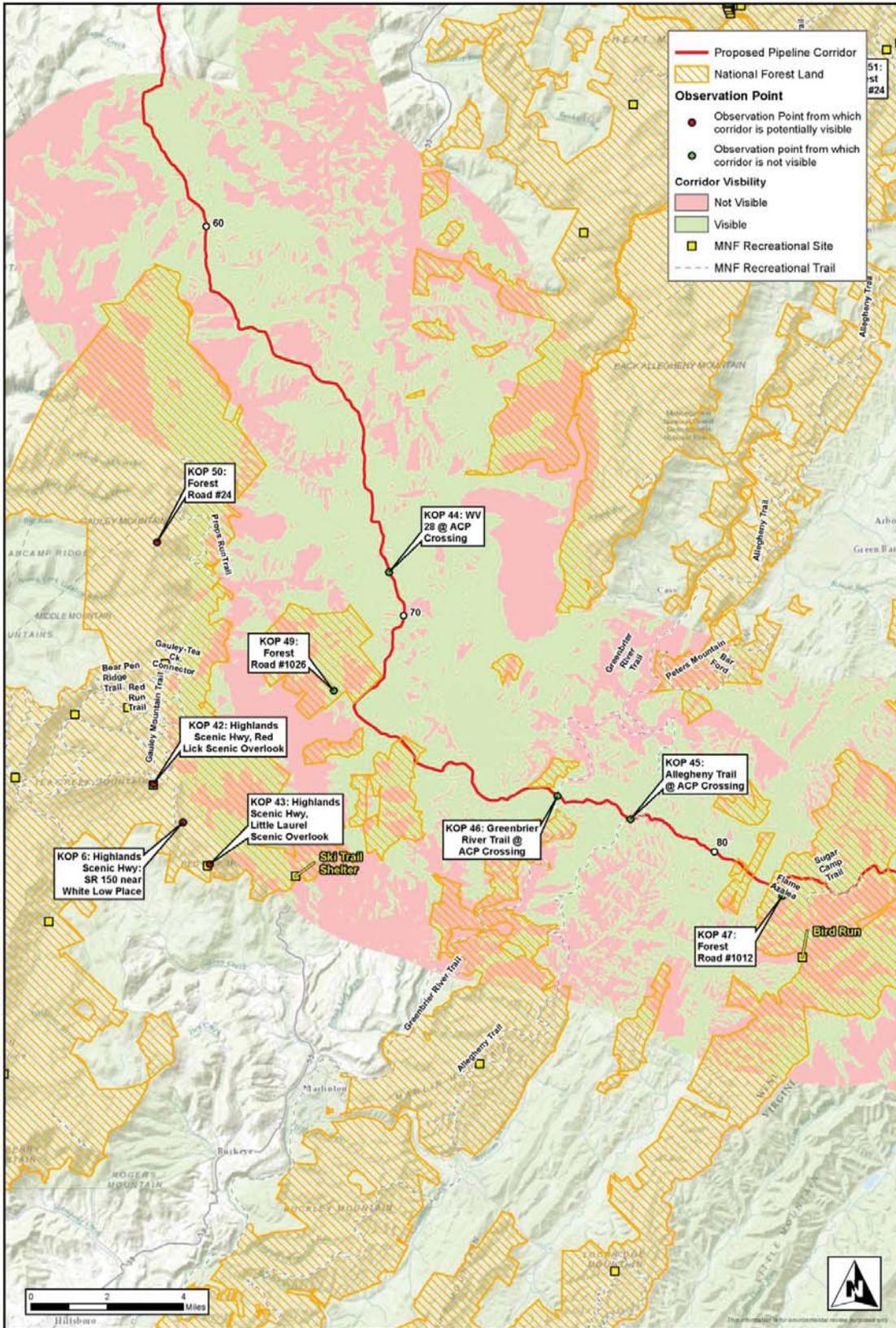
limination of several KOPs from analysis, and the addition of others. As a result, there are gaps in the KOP numbering sequence, which are described in Note 1 of Table 2-1.

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Figure 2-3: Seen Area Analysis and KOPs, MNF



17

**Atlantic Coast Pipeline**  
Seen Area Analysis of Key Observation Points  
Monongahela National Forest

Atlantic Coast Pipeline logo on the left, ERM logo on the right.

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TABLE 2-1

Atlantic Coast Pipeline Key Observation Points

ID <sup>1</sup>	Location/Description	Latitude (decimal degrees)	Longitude (decimal degrees)	In Seen Area?	Observations and recommendations
<i>Monongahela National Forest</i>					
6	Highlands Scenic Hwy: SR 150 near White Low Place	38.325861	-80.149833	Yes	No further analysis: Intervening topography and vegetation make views of corridor unlikely.
42	Highlands Scenic Hwy, Red Lick Scenic Overlook	38.340653	-80.164013	Yes	No further analysis: Intervening topography and vegetation make views of corridor unlikely.
43	Highlands Scenic Hwy, Little Laurel Scenic Overlook	38.309747	-80.137148	Yes	No further analysis: Intervening topography and vegetation make views of corridor unlikely.
44	WV 28 @ ACP Crossing	38.420182	-80.049290	Yes	No further analysis: KOP is not on USFS-owned land.
45	Allegheny Trail @ ACP Crossing	38.325259	-79.934017	Yes	No further analysis: KOP is not on or visible from USFS-owned land.
46	Greenbrier River Trail @ ACP Crossing <sup>2</sup>	38.334449	-79.969086	Yes	No further analysis: Greenbrier River crossing location would not be on or visible from USFS-owned land
47	Forest Road #1012	38.295338	-79.861307	Yes	No further analysis: KOP is entirely forested, at similar elevation, and looking perpendicular to the corridor.
49	Forest Road #1026 <sup>3</sup>	38.375442	-80.076633	Yes	No further analysis: No clear view of corridor from this location. Open pasture at top of mountain, but views toward corridor are screened by trees.
50	Forest Road #24	38.432544	-80.161221	Yes	No further analysis: FR 24 runs along Gauley Mountain, which is heavily forested. While sporadic views through trees could exist, the corridor is nearly 6 miles away, with intervening topography and vegetation.
51	Forest Road #24	38.590442	-79.823805	Yes	
<i>George Washington National Forest</i>					
15	Shenandoah Mtn. Trail 4: Forest Service Trail (FST) 447 at FST 112	38.283878	-79.406025	Yes	New analysis recommended to reflect current ACP alignment.
34	Torry Ridge Trail 1: Torry Ridge Trail (FST 507) at FST 507B <sup>4</sup>	37.929205	-79.008426	Yes	New analysis recommended to reflect current ACP alignment and/or contingency route.
35	Torry Ridge Trail 2: Torry Ridge Trail (FST 507) west of FST 518 <sup>5</sup>	37.946467	-78.973737	Yes	NA: Analysis already completed.
38	Blue Ridge Parkway <sup>6</sup> Ravens Roost Overlook	37.933781	-78.953122	Yes	NA: Analysis already completed.
39	Blue Ridge Parkway <sup>6</sup> Three Ridges Overlook	37.907171	-78.979086	Yes	NA: Analysis already completed.
40	Bee Mountain, ANST (near Three Ridges Wilderness)	37.898960	-78.991512	Yes	Further analysis recommended.
41	Three Ridges ridge top, Three Ridges Wilderness Area	37.864571	-78.987966	Yes	No further analysis: corridor is at top of ridge, well above viewer, and through dense forest. View is unlikely.
52	Brushy Ridge Trail (FST 718) at ACP crossing	38.151542	-79.470442	Yes	No further analysis: corridor is at top of ridge, well above viewer, and through dense forest. View is unlikely.
53	FST 717, Short Ridge Trail, Brushy Ridge Trail	38.157792	-79.473510	Yes	No further analysis: Trail and overall mountainside are heavily forested. No obvious outcroppings or clearings where a clear view is likely.
54	FST 718, Brushy Ridge Trail	38.151175	-79.468091	Yes	No further analysis: Corridor is not on USFS land for most of Deerfield Valley, and parallels VA 629, making views unlikely.
55	Walker Mountain (FST 546 – Back Draft Trail)	38.135072	-79.457438	Yes	No further analysis: Trail and overall mountainside are heavily forested. No obvious outcroppings or clearings where a clear view is likely.
56	SR 629, Deerfield Road and Deerfield Valley	38.157551	-79.473170	Yes	No further analysis: view from publicly accessible area at base of fire tower is screened by vegetation.
57	SR 641, Bright Hollow Road	38.144371	-79.475055	Yes	No further analysis: Trail and overall mountainside are heavily forested. No obvious outcroppings or clearings where a clear view is likely.
58	Duncan Knob Lookout	38.164775	-79.704961	Yes	No further analysis: ACP crossing of VA 614 is not on USFS land, nearby USFS land is moderate to low SIO.
59	FS Trail 622, Laurel Run Trail to Duncan Knob (trailhead shown in coordinates)	38.161151	-79.670111	Yes	No further analysis: Trail and overall mountainside are heavily forested. No obvious outcroppings or clearings where a clear view is likely.
60	SR 614, northbound	38.170135	-79.662638	Yes	No further analysis. Topography of this location makes views of corridor unlikely; corridor here would also be under pasture, not forest.
61	Fort Lewis community	38.115896	-79.606576	Yes	No further analysis: KOPs 60, 61, and 62 do not provide potential views of the ACP.
62	SR 625 at SR 678	38.126913	-79.619436	Yes	
63	Cowpasture River Crossing (general location in the vicinity of KOPs 61 and 62)	NA	NA	Yes	
64	Shenandoah Mountain Trail (FST 447) Southern Terminus	38.122953	-79.598759	Yes	ACP route has changed since this KOP was identified; no simulation is available, but conditions and impacts are discussed qualitatively.
65	Devil's Knob Overlook, Wintergreen Resort <sup>3</sup>	37.915545	-78.958294	Yes	Further analysis recommended to reflect contingency route.

Notes

- <sup>1</sup> The ACP alignment was changed after the initial set of KOPs was identified, numbered from KOP 1 to KOP 41. Of that initial set, KOPs 1-5, 7-14, and 16-33 had potential views of the previous alignment, but no longer have a potential view of the current alignment. The remaining initial KOPs had no potential view of the previous or current alignment. As a result, these ID numbers no longer appear in this table.
- <sup>2</sup> Subsequent to USFS identification of this KOP, the Greenbrier River crossing location was shifted approximately 1,200 feet north.
- <sup>3</sup> Modified location to approximately 3,000 feet east (crow-fly) of location provided by USFS.
- <sup>4</sup> Modified location to 3,555 feet southwest (crow-fly) of location provided by USFS.
- <sup>5</sup> Modified location to 2,165 feet northeast (crow-fly) from location provided by USFS.
- <sup>6</sup> KOP added by Atlantic to original list provided by USFS.

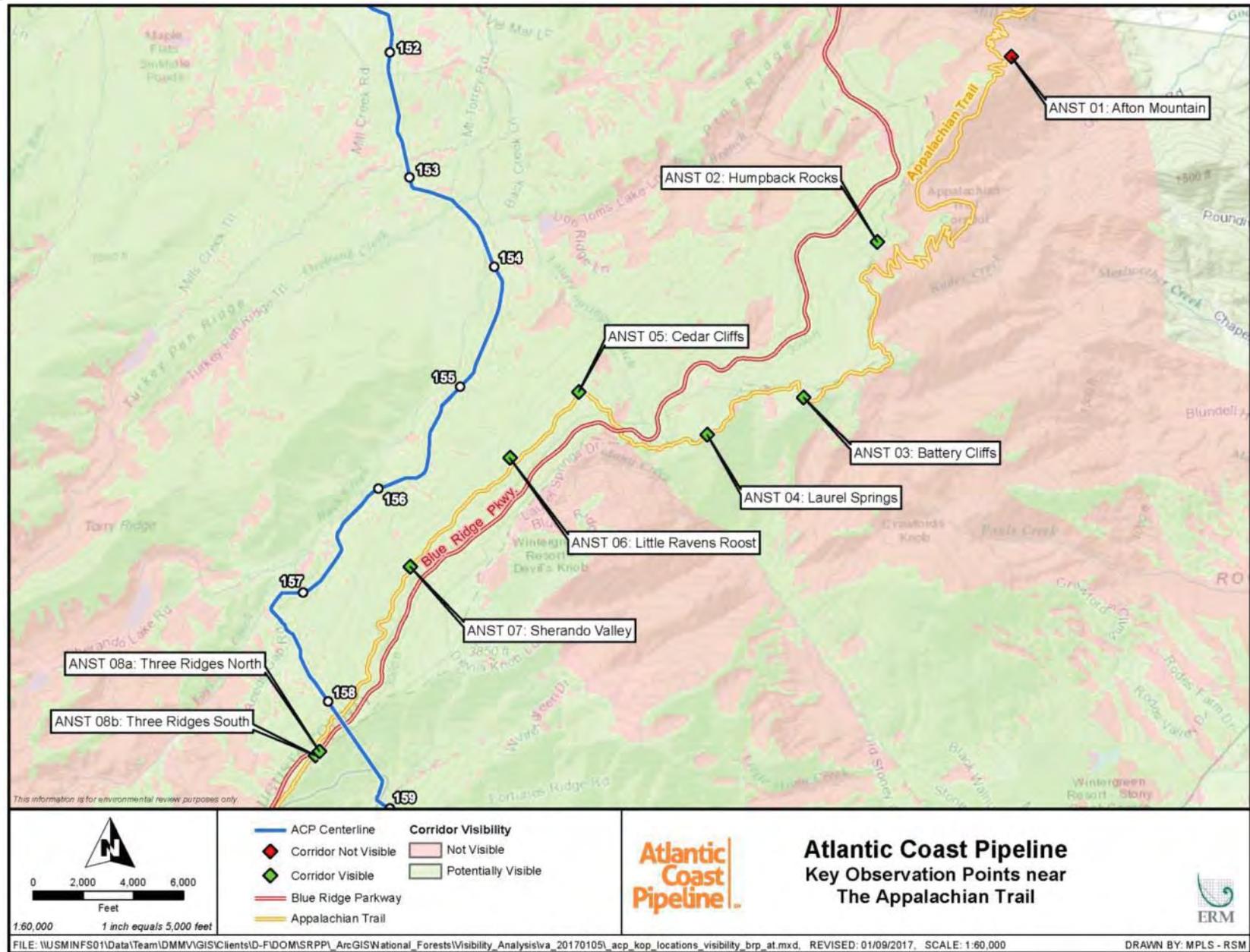


Figure 2-4: Seen Area Analysis and KOPs for the Appalachian National Scenic Trail

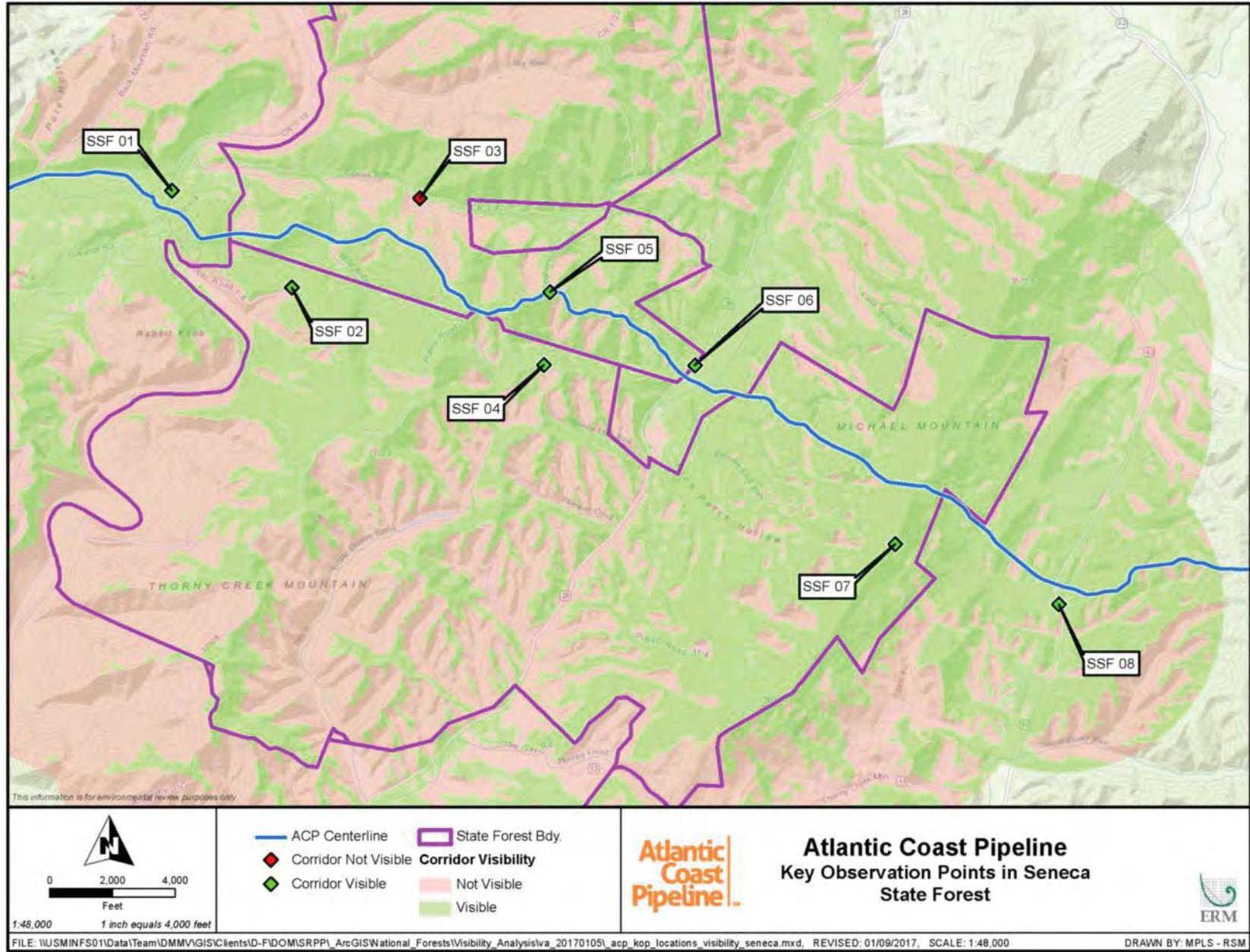


Figure 2-5: Seen Area Analysis and KOPs for Seneca State Forest

KOPs SSF 01 and 08 are near the SSF, but are on private land outside of the SSF, and do not offer meaningful views of the SSF itself. These viewpoints are included in this VIA, although Atlantic notes the lack of NPS, USFS, or state visual resource management purview in these locations.

The KOP ANST 08b at the Three Ridges Overlook was adjusted slightly from the location provided by the ATC. The original KOP 08b (“Three Ridges South”) was located on the ANST approximately 200 feet south of the overlook parking lot within the forest, surrounded by mature trees, with no view of the ACP corridor or the overlook parking area. The location for KOP 08b was adjusted to a point on the ANST where it crosses the south end of the Three Ridges Overlook parking area. KOP ANST 08a was not moved and is located at the north end of the overlook parking lot, approximately 200 feet north of the ANST and 50 feet north of USFS KOP 39.

TABLE 2-2					
Atlantic Coast Pipeline Key Observation Points					
ID	Location/Description	Latitude (decimal degrees)	Longitude (decimal degrees)	In Seen Area?	Observations and recommendations
<i>Appalachian National Scenic Trail</i>					
ANST 01	Afton Mountain	37.981281	-78.881777	No	No further analysis: Intervening topography and vegetation make views of corridor unlikely.
ANST 02	Humpback Rocks	37.961297	-78.900669	Yes	Further analysis recommended.
ANST 03	Battery Cliffs	37.944532	-78.911484	Yes	Further analysis recommended.
ANST 04	Laurel Springs	37.940646	-78.924887	Yes	Further analysis recommended.
ANST 05	Cedar Cliffs	37.945684	-78.942436	Yes	Further analysis recommended.
ANST 06	Little Ravens Roost	37.938559	-78.952123	Yes	Further analysis recommended.
ANST 07	Sherando Valley	37.927035	-78.966247	Yes	Further analysis recommended.
ANST 08a	Three Ridges Overlook, North	37.907362	-78.978863	Yes	Further analysis recommended.
ANST 08b	Three Ridges Overlook, South	37.906998	-78.979555	Yes	Further analysis recommended.
<i>Seneca State Forest</i>					
SSF 01	Greenbrier River Crossing	38.336228	-79.968812	Yes	Further analysis recommended.
SSF 02	Public Road 1/8	38.327362	-79.955411	Yes	Further analysis recommended.
SSF 03	Laurel Run Road	38.335097	-79.941281	No	No further analysis: Intervening topography and vegetation make views of corridor unlikely.
SSF 04	Loop Road	38.320637	-79.927463	Yes	Further analysis recommended.
SSF 05	Allegheny Trail	38.327042	-79.926916	Yes	Further analysis recommended.
SSF 06	WV Route 28	38.320746	-79.910436	Yes	Further analysis recommended.
SSF 07	Michael Mountain	38.304387	-79.888666	Yes	Further analysis recommended.
SSF 08	WV Route 92	38.298723	-79.870065	Yes	Further analysis recommended.

## 2.3 FIELD SURVEYS

Atlantic conducted field surveys in October and November of 2015 and March, October, and November of 2016. The primary purpose of these field surveys was to gain a better understanding of actual conditions (terrain, vegetation, accessibility, etc.) at and near the KOPs provided by the USFS and NPS. Field surveys included driving along many of the state and USFS roads near the KOPs and throughout the pipeline corridor, to obtain a broad understanding of how the ACP corridor might (or might not) be visible within the region as a whole. Where

feasible, conditions at each KOP were documented with photography (separate from the baseline photographs used for the visual simulations described in Chapter 3).

The field surveys served as input into whether actual views of the ACP corridor existed (considering vegetation and site-specific conditions), as well as the type of analysis that could best characterize the ACP's potential visual impacts to USFS and NPS lands, as viewed from these locations. The surveys also helped to identify the exact location from which baseline photography should be captured for the visual simulations (Chapter 3). The intent of this micro site selection was to identify the best view of the corridor at or near each KOP. The only meaningful deviations from the originally-identified KOPs (as a result of field surveys) were for KOPs 34, 35, and 49, as described in the footnotes for Table 2-1, and to KOP ANST 08b, as described above in Section 2.2.

### **2.3.1 2015 Field Surveys**

Field work in 2015 for the initial ACP route and primarily to assess KOPs identified on USFS lands) consisted of direct visits to KOPs in late October 2015 (with the majority of leaves still on deciduous trees) and early November 2015 during leaf-off conditions. During the October survey, Atlantic was able to visit most USFS-designated KOPs within the "seen area" (except for KOPs 34 and 35 in Table 2-1). The October survey also included observation of the general terrain, scenery, and visibility along the public and Forest Roads listed in Table 2-1. In general, the potential for views along those roads was similar to the potential for views at the nearest KOP. During the early November field survey, KOPs 38-41 were visited, and alternative locations (locations with clearer views of the ACP corridor) were identified for KOPs 34 and 35, as noted in Table 2-1.

Atlantic personnel discussed the results of these field surveys with the USFS at a meeting held in Roanoke, VA on November 19, 2015. At that meeting, Atlantic and USFS agreed on the KOPs that required further visual analysis, including photo simulations, as well as the KOPs that did not require further analysis, based on field survey photography, topographic maps, and publicly available satellite maps and photos.

### **2.3.2 2016 Field Surveys**

The adoption in February 2016 of a major route alternative for the ACP resulted in approximately 95 miles of new pipeline corridor that had not been discussed during previous consultation with the USFS. As described above, Atlantic and USFS identified additional KOPs for this route alteration. The new KOPs were visited in mid-March 2016. Following NPS consultation in 2016, ERM and Truescape personnel visited the NPS KOPs (see Section 2.2) in October and November 2016. The purpose and outcomes of the 2016 field surveys were similar in scope to those of the October and November 2015 surveys.

## **2.4 VISUAL ANALYSIS TYPES**

Table 2-3 summarizes the recommended types of analysis for each of the KOPs for which actual views of the ACP corridor potentially exist. Sections 2.4.1 and 2.4.1 describe these

techniques. KOPs not included in Table 2-3 did not offer potential views of the ACP corridor, primarily due to the presence of vegetation between the viewer and the corridor.<sup>2</sup>

### 2.4.1 Indicative Simulation

In an indicative simulation, Truescape overlays aerial photography onto a digital terrain model, and then adds simple graphics (in this case, a red line) to indicate the approximate location of the ACP corridor. This technique is intentionally generalized and does not simulate the location and height of vegetation or other aboveground structures such as transmission lines. It is primarily intended to determine whether the ACP right-of-way could be seen from the KOP, and whether a more detailed simulation would be warranted.

TABLE 2-3		
Visual Analyses Conducted for KOPs Selected for Further Study		
ID	Location	Type of Analysis
<i>Monongahela National Forest</i>		
No KOPs on or within view USFS land, with views of the ACP corridor.		NA
<i>George Washington National Forest</i>		
15	Shenandoah Mtn. Trail 4: Forest Service Trail 447 near Tims Knob	Indicative Simulation
34	Torry Ridge Trail 1 (revised location, per Table 2-1)	Full simulation (Proposed Action) Full simulation (Contingency Plan)
35	Torry Ridge Trail 2 (revised location, per Table 2-1)	Full simulation
38	Blue Ridge Parkway: Ravens Roost Overlook	Full simulation
39	Blue Ridge Parkway: Three Ridges Overlook	Full simulation <sup>1</sup>
40	ANST: Bee Mountain, near Three Ridges Wilderness	Full simulation (Proposed Action) Full simulation (Contingency Plan)
65	Wintergreen Resort, Devil's Knob Overlook	Full simulation (Contingency Plan)
<i>Appalachian National Scenic Trail</i>		
ANST 02	Humpback Rocks	Full simulation
ANST 03	Battery Cliffs	Full simulation
ANST 04	Laurel Springs	Full simulation
ANST 05	Cedar Cliffs	Full simulation
ANST 06	Little Ravens Roost	Full simulation
ANST 07	Sherando Valley	Full simulation
ANST 08a	Three Ridges Overlook, North	Full simulation
ANST 08b	Three Ridges Overlook, South	Full simulation
<i>Seneca State Forest</i>		
SSF 01	Greenbrier River Crossing	Full simulation
SSF 02	Public Road 1/8	Full simulation
SSF 04	Loop Road	Full simulation
SSF 05	Allegheny Trail	Full simulation
SSF 06	WV Route 28	Full simulation
SSF 07	Michael Mountain	Full simulation
SSF 08	WV Route 92	Full simulation
Notes		
<sup>1</sup> Photo simulation from this KOP was revised in December 2016, reflecting NPS comments regarding the removal of trees from the viewshed—a management action that occurred after the original simulation was prepared for KOP 39.		

<sup>2</sup> While KOP 45 (Allegheny Trail) and KOP 46 provided a view of the pipeline corridor, those views were not on and/or near USFS-owned land, and were thus excluded from this analysis.

## 2.4.2 Full Visual Simulations

As part of this project, Truescape developed a series of TrueView™<sup>3</sup> photo simulations. TrueView is a high resolution photo simulation that accurately represents to scale the “human field of view” that would be seen if standing at the actual KOP. Specifically, TrueView simulates a 124 degree horizontal field of view and a 55 degree vertical field of view.

KOP locations were either survey or terrain-aligned, depending on the remoteness and the availability of survey crews. For surveyed KOP locations, Truescape noted the camera’s exact position, along with the position of reference points within the camera’s field of view, as provided by a registered surveyor. Reference points include existing features such as fences or vegetation, or temporary markers placed in the scene. Each of these surveyed points are imported into the true-scale 3D model of the scene and matched to the simulation photography.

Viewpoints that were aligned using terrain data used the camera’s mounted GPS unit to record the camera’s position. The camera’s position, height, focal length was imported and matched to imported digital terrain data. Truescape used the best available digital terrain data, and reprinted the source of those data on the title block of each respective simulation as follows: “Viewpoint location has been terrain-aligned using 1/9 and 1/3 arc degrees terrain, sourced from USGS. Heights are above mean sea level. Projection/Zone/Datum: UTM ZONE 17, NAD83.”

GIS data identifying the location of cleared areas, including permanent and temporary ROWs, additional temporary workspaces, and access paths/roads were imported and are used to determine the location and extent of vegetation to be removed in the simulations.

The photographic base of each TrueView simulation consists of a series of nine overlapping photographs (from a 16 megapixel digital camera) that are digitally color-adjusted and “stitched” together to create a single, seamless image. Truescape then develops a 3D model of the terrain in the photograph, using detailed topographic mapping (including Lidar, where available). The terrain model is matched to the photograph using known surveyed locations within the field of view.

Baseline photography is taken during the best conditions possible, considering the limitations of project and site access schedule and weather. Advanced planning for baseline photography includes reviewing weather forecasts for each site and logistics of travel, coordination with survey crews, as well as the order of multiple sites to be photographed. While preferred, “Ideal” conditions (sunny, clear skies, with sunlight directly illuminating the proposed ACP corridor) are rare. Instead, baseline photography reflects conditions that commonly experienced by viewers in each location. For example, this may include cloudy days.

Other factors that can affect the appearance of baseline imagery (and thus of the final Trueview simulations) include:

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<sup>3</sup> A registered trademark of Truescape, Ltd.

- Viewpoint direction: photography from viewpoints generally facing south is less likely to have direct or indirect sunlight illumination, due to sun position;
- Time of day and year: photography taken in fall and winter months will show a lower sun angle;
- Safety: Many viewpoint locations are remote, reachable only on foot and requiring hours of hiking to access. As a result, there is a limited ability to wait for ideal or preferred weather conditions while still allowing for a safe return trip.

Project components and right-of-way locations, based on information provided by Atlantic, are included in the terrain model, which is incorporated into the base photography. All camera positions are included on the simulation's title block for reference. All heights were recorded as above mean sea level and the Projection/Zone/Datum used was UTM ZONE 17, NAD83. Project information includes not only the location of aboveground facilities (if any), but also their color and texture. The result is an image that accurately displays the location of proposed ACP facilities and rights-of-way as they would appear to a viewer at each KOP.

Variations in color shown in the simulations in Section 3 are due to direct sunlight, global illumination, and shadowing effects of the shape of the land and its respective post construction vegetation which is part of the 3D-model.

### **3.0 RESULTS OF VISUAL ANALYSES**

This section presents the results of the field surveys and visual analyses described in Section 2.0. Appendix A contains the photographs taken during the field surveys. Unless otherwise specified, the discussions in this section and the remainder of this VIA refer to conditions along the ACP's permanent right-of-way that would be present several years after completion of construction of the affected pipeline segment. The approximate ACP mileposts visible from each KOP were determined based on a review of baseline photography and Seen Area mapping (see Section 2.1).

#### **3.1 USFS INDICATIVE SIMULATION**

Atlantic conducted an indicative simulation for one KOP, as listed in Table 2-2, using the methodology described in Section 2.4.1.

##### **3.1.1 KOP 15: Shenandoah Mountain Trail 4**

Figure 3-1 shows the raw baseline photography (prior to the digital "stitching" described in Section 2.4.2) and the indicative simulation image at KOP 15. The red line in this simulation shows the location of the corridor from the perspective of a view at this KOP. Based on these images, the ACP corridor would not actually be visible due to intervening vegetation. This KOP was not evaluated further.

#### **3.2 USFS FULL VISUAL SIMULATIONS FOR THE GWNF AND BRP (PROPOSED ACTION)**

Atlantic conducted full visual simulations of six KOPs, as listed in Table 2-2, using the TrueView methodology described in Section 2.4.2. The subsections below present the simulations, showing the ACP corridor as it would be seen from each of these KOPs. This includes imagery of existing conditions, as well as separate simulations of views one growing season following construction, and approximately 5 years and 15 to 20 years following construction.

High-resolution, large-format versions of these simulations are provided in Appendix B, along with instructions for proper viewing.

##### **3.2.1 KOP 34: Torry Ridge Trail 1**

Figures 3-2, 3-3, and 3-4 depict the full simulation image at KOP 34. From this KOP, the ACP corridor at approximately MP 157 would be visible as a narrow vegetated (but not forested) band on the far side of the Back Creek valley, in the shaded area of the photograph, approximately 1.2 miles to the southeast. Figures 3-2, 3-3, and 3-4 also show the ACP corridor up to approximately MP 157.7 as it starts to climb toward the BRP/ANST corridor, approximately 2.0 miles to the southeast. The width of the corridor would become narrower, and the contrast with surrounding areas less prominent, as trees and other vegetation reclaim the temporary right-of-way over time. The visible portion of the right-of-way ends where Atlantic's

proposed HDD would be located. Both of these views are in the middleground, as defined by the USFS.

The dark lighting conditions of the baseline and simulation images reflect actual atmospheric conditions present when baseline photography was captured. As described in Section 2.4.2, these atmospheric conditions, along with conditions reflected in all other imagery in this document, were entirely consistent with weather and lighting that viewers might reasonably experience from this location on any given day.

### **3.2.2 KOP 35: Torry Ridge Trail 2**

Figures 3-5, 3-6, and 3-7 show the full simulation images for KOP 35. From this KOP, the ACP corridor at approximately MP 155.5 would be visible as a narrow vegetated (but not forested) band on the far side of the Back Creek valley, approximately 0.7 mile to the southeast. This is in the middleground, as defined by the USFS. As shown in the simulation images, the view of the ACP corridor would be through mixed coniferous and deciduous vegetation. The corridor may thus be less visible during leaf-on conditions in spring, summer, and fall. The width of the corridor would become narrower, and the contrast with surrounding areas less prominent, as trees and other vegetation reclaim the temporary right-of-way over time.

### **3.2.3 KOP 38: Blue Ridge Parkway at Ravens Roost**

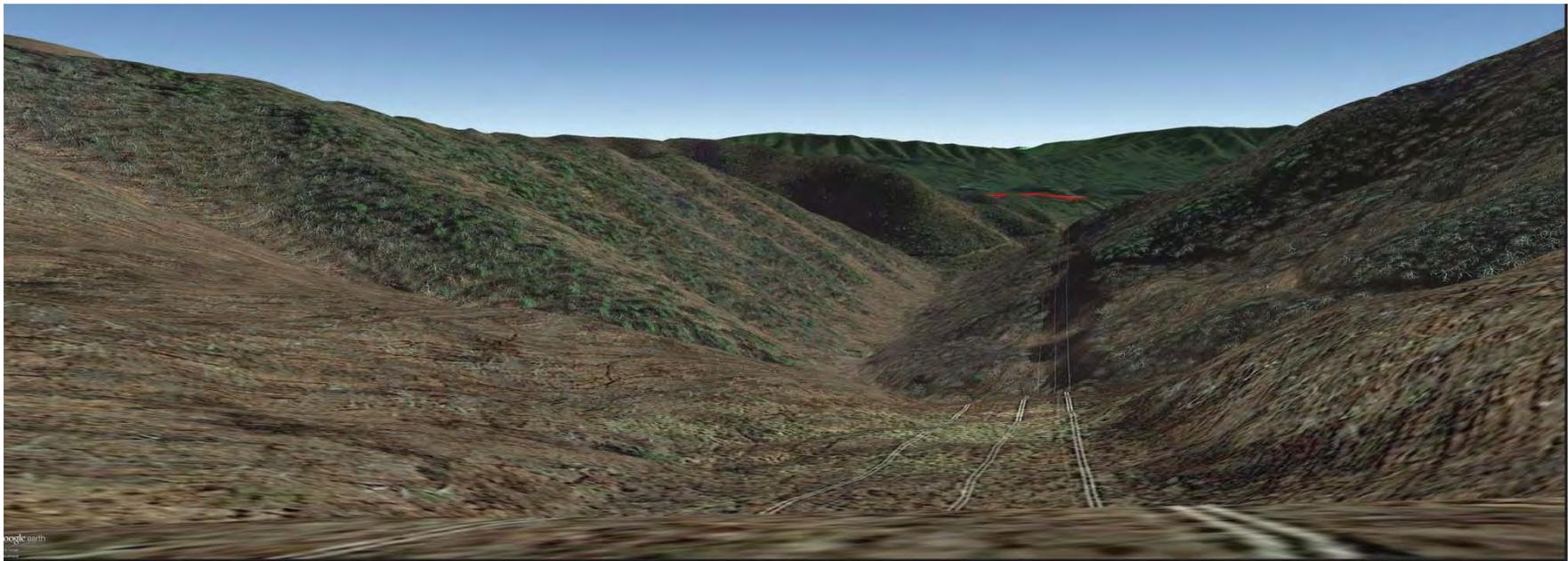
Figures 3-8, 3-9, and 3-10 show the full simulation images for KOP 38. From this KOP, the ACP corridor would be clearly visible as a narrow band of vegetated open land wrapping around Torry Ridge (the mountain feature in the approximate center of the image), approximately from MPs 152 to 156 (from right to left). The corridor is approximately 0.75 mile from Ravens Roost Overlook parking area (KOP 38) at its closest point (left of the bottom-center of the image, corresponding approximately to MP 156), with MP 152 approximately 2.5 miles away (right-center of the images, in shadow). These distances are in the middleground, as defined by the USFS. The appearance of the corridor would be similar to the cleared areas along Back Creek and Mount Torry Road, closer to the base of Torry Ridge. The width of the corridor would become narrower, and the contrast with surrounding areas less prominent, as trees and other vegetation reclaim the temporary right-of-way over time.

The vegetation that borders the ACP corridor right of way (ROW) closest to the KOP is higher than the vegetation on the other side of the ROW, due to the slope (i.e., away from the viewer). The screening effect of this higher vegetation is reflected in the simulation images. The simulated vegetation clearing has existing quantifiable features that help to validate the width of the proposed cleared ROW. For example, the existing clearing at the bottom of Torry Ridge is approximately 800 feet from the proposed edge of the ROW and a width of approximately 270' at its widest point. The full depth of the existing clearing is screened from view due to the vegetation, similar to how the proposed ROW clearing will be screened by vegetation closest to the viewer.

### **3.2.4 KOP 39: Blue Ridge Parkway at Three Ridges Overlook**

Figures 3-11, 3-12, 3-13, and 3-14 show the full simulation images for KOP 39. From this KOP, viewers would have an axial view (facing southeast) of the ACP corridor at approximately MP 159 as it climbs over Piney Mountain, just south of Atlantic's proposed HDD entry point. This segment of the corridor would be approximately 0.75 to 1.0 mile from the viewer, in the middleground, as defined by the USFS. As shown in the simulation images, the bottom (closer) portion of the corridor is partially obscured by trees during leaf-off conditions. During leaf-on conditions, this portion of the corridor would likely not be visible at all, although the upper portion of the corridor would remain visible as a vegetated (but not forested) strip. The width of the corridor would become narrower, and the contrast with surrounding areas less prominent, as trees and other vegetation reclaim the temporary right-of-way over time.

Figure 3-1: Baseline photography and Indicative Simulation, KOP 15



T-35

Figure 3-2: Full Simulation, KOP 34, Regrowth Following Construction



KOP34 - Torry Ridge Trail 1, Looking Southeast - Existing View



KOP34 - Torry Ridge Trail 1, Looking Southeast - Following Construction

**Atlantic Coast Pipeline**

ERM - ACP Pipeline ROW  
Additional Forestry

**Viewpoint KOP34**  
Torry Ridge Trail 1  
with Contingency Right of Way (ROW) shown

Viewpoint location   
  Trail location

NOTE: The above pipeline ROW alignment has been superimposed onto the aerial imagery only and does not represent the actual width of the pipeline ROW.

Location: Torry Ridge Trail 1, Viewpoint	228075.3
Location: Torry Ridge Trail 1, Contingency ROW	5379815.8
Location: Torry Ridge Trail 1, Pipeline ROW	2019.2
Height of Camera above ground (m)	0.4
Date of Photography	9/26/15 at 14:32:06
Altitude of Camera (m)	30
Horizontal Field of View (degrees)	53.9
Vertical Field of View (degrees)	30

NOTES:

Viewpoint location was determined using GPS and UTM coordinates, located from USGS aerial imagery.

Height of camera above ground is based on elevation data from the USGS.

No part of this photo simulation shall be altered in any way. Check annotations should be made from the full data book for "only".

Photo Simulation created using  
 Truescape 10.0  
 Global Map: 48 2348 2348 2348

Prepared by:

**Truescape**

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Figure 3-3: Full Simulation, KOP 34, Regrowth 5 Years after Construction



KOP34 - Torry Ridge Trail 1, Looking Southeast - Existing View



KOP34 - Torry Ridge Trail 1, Looking Southeast - Proposed View 75' Permanent ROW (5 Year Tree Growth)

**Atlantic Coast Pipeline**

---

**KOP34**  
Torry Ridge Trail 1

■ Visual Overlay    ■ Full Simulation

KOP34 - Torry Ridge Trail 1 - 5 Year Regrowth Simulation  
 This simulation shows the visual impact of the proposed pipeline corridor and associated infrastructure on the existing landscape. The simulation is based on a 5-year regrowth period following construction.

Project Name:	Atlantic Coast Pipeline	Project No.:	2015-001
Client:	Atlantic Coast Pipeline LLC	Project Manager:	John Doe
Project Location:	North Carolina	Project Status:	Approved
Project Start Date:	6 November 2015	Project End Date:	10/31/2016
Project Budget:	\$100,000,000	Project Risk:	Low
Project Sponsor:	Atlantic Coast Pipeline LLC	Project Lead:	John Doe

Note: This simulation is based on a 5-year regrowth period following construction. The simulation is based on a 5-year regrowth period following construction.

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Figure 3-5: Full Simulation, KOP 35, Regrowth Following Construction



KOP35 - Torry Ridge Trail 2, Looking Southeast - Existing View



KOP35 - Torry Ridge Trail 2, Looking Southeast - Following Construction

**Atlantic Coast Pipeline**

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**Viewpoint G3**  
Torry Ridge Trail 2

---

MP154
MP155

---

MP154 - MP155	2229068
MP155 - MP156	9794500
MP156 - MP159	24860
MP159 - MP154	0
MP154 - MP155	0
MP155 - MP156	0
MP156 - MP159	0
MP159 - MP154	0

---

Notes:  
This view is a simulation of the view from the viewpoint at the time of construction. It is not a photograph of the actual view from the viewpoint.

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This is a simulation of the view from the viewpoint at the time of construction. It is not a photograph of the actual view from the viewpoint.

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Figure 3-6: Full Simulation, KOP 35, Regrowth 5 Years after Construction



KOP35 - Torry Ridge Trail 2, Looking Southeast - Existing View



KOP35 - Torry Ridge Trail 2, Looking Southeast - Proposed View 75' Permanent ROW (5 Year Tree Growth)

Scale: 1" = 100'  
North Arrow  
Date: 19 July 2015  
Project: Atlantic Coast Pipeline

**Atlantic Coast Pipeline**

---

**KOP35**  
Torry Ridge Trail 2

● Existing View    ● Proposed View

This figure shows the visual impact of the proposed project on the existing view from the location of the proposed project. The proposed project is shown in yellow. The existing view is shown in blue. The proposed view is shown in green.

Project Name	KOP35
Project Location	Torry Ridge Trail 2
Project Description	Proposed 75' Permanent ROW
View Location	Existing View
View Direction	Southeast
View Date	19 July 2015
View Time	10:00 AM
View Weather	Clear
View Distance	1.5 miles

This figure shows the visual impact of the proposed project on the existing view from the location of the proposed project. The proposed project is shown in yellow. The existing view is shown in blue. The proposed view is shown in green.

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Figure 3-7: Full Simulation, KOP 35, Regrowth 15-20 Years after Construction



KOP35 - Torry Ridge Trail 2, Looking Southeast - Existing View



KOP35 - Torry Ridge Trail 2, Looking Southeast - Proposed View 75' Permanent ROW (15/20 Year Tree Growth)

Scale: 1" = 100'  
North Arrow  
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**KOP35**  
Torry Ridge Trail 2

● Project Location    ● 75' Permanent ROW

Note: The 75' Permanent ROW is shown in green. The project location is shown in blue. The map is for informational purposes only and does not constitute a legal description.

Project No.	22450165
Project Name	Atlantic Coast Pipeline
Project Location	North Carolina
Project Date (Last Update)	04/15/2015
Project Manager	John A. Hester
Project Engineer	John A. Hester
Project Designer	John A. Hester
Project Checker	John A. Hester

This is a simulated view of the project location. It is not a photograph and does not represent the actual appearance of the project. The view is based on the project location and the 75' Permanent ROW.

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Figure 3-8: Full Simulation, KOP 38, Regrowth Following Construction



**KOP38** - Raven's Roost, Blue Ridge Parkway Overlook, Looking Northwest - Existing View



**KOP38** - Raven's Roost, Blue Ridge Parkway Overlook, Looking Northwest - Following Construction

**Atlantic Coast Pipeline**

---

Viewpoint 05  
Raven's Roost, Blue Ridge Parkway Overlook

● Viewpoint 05    ● The Pipeline

Note: The location of the view is shown in red. The pipeline route is shown in orange. The map shows the location of the view and the pipeline route. The map is a topographic map showing the terrain. The map is a topographic map showing the terrain.

Viewpoint Name	Viewpoint 05
Viewpoint Description	Raven's Roost, Blue Ridge Parkway Overlook
Viewpoint Elevation	3300
Viewpoint Azimuth	315
Viewpoint Date	1/25/2015
Viewpoint User	JRM
Viewpoint Status	OK
Viewpoint Notes	OK

---

Note: The location of the view is shown in red. The pipeline route is shown in orange. The map shows the location of the view and the pipeline route. The map is a topographic map showing the terrain. The map is a topographic map showing the terrain.

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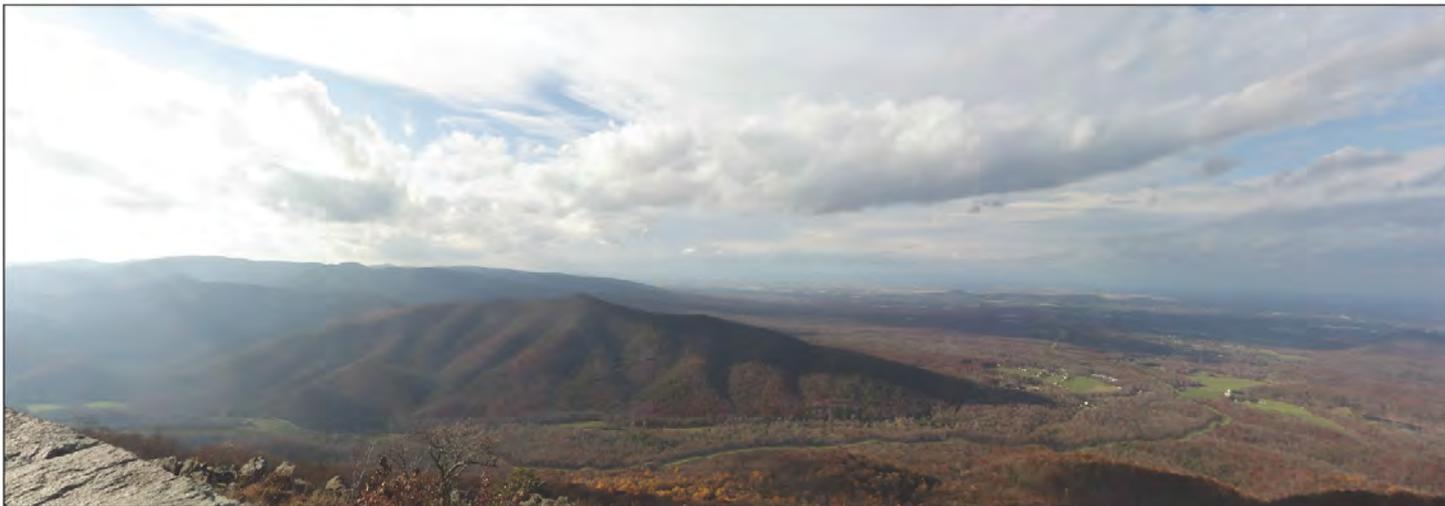
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Figure 3-9: Full Simulation, KOP 38, Regrowth 5 Years after Construction



KOP38 - Raven's Roost, Blue Ridge Parkway Overlook, Looking Northwest - Existing View



KOP38 - Raven's Roost, Blue Ridge Parkway Overlook, Looking Northwest - Proposed View 75' Permanent ROW (5 Year Tree Growth)

Scale: 1" = 1000'  
North Arrow  
Date: 10/15/2015

**Atlantic Coast Pipeline**

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**KOP38**  
Raven's Roost,  
Blue Ridge Parkway Overlook

● View - 3D View ● 75' Permanent ROW

KOP38 - Raven's Roost, Blue Ridge Parkway Overlook, Looking Northwest - Existing View  
 KOP38 - Raven's Roost, Blue Ridge Parkway Overlook, Looking Northwest - Proposed View 75' Permanent ROW (5 Year Tree Growth)

View - 3D View	33/30/2015
View - 3D View	10/15/2015

---

This is a simulated view of the proposed pipeline project. The pipeline route is shown in yellow. The 75-foot permanent right-of-way (ROW) is shown in orange. The view is simulated using Truescape software.

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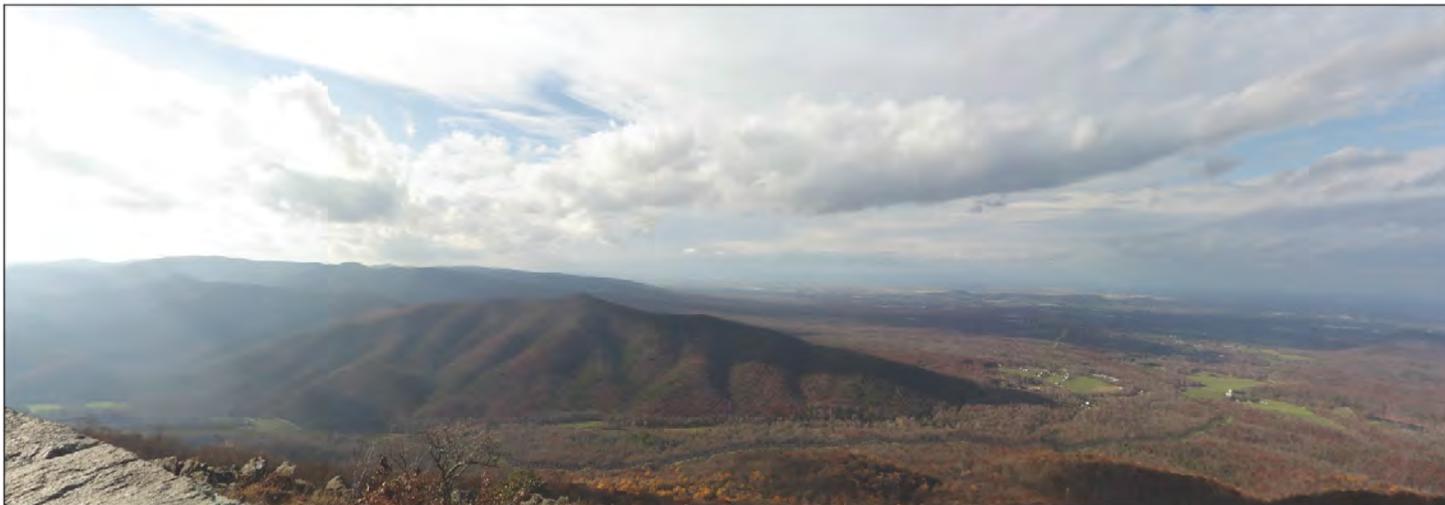
Date	10 July 2015
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Figure 3-10: Full Simulation, KOP 38, Regrowth 15-20 Years after Construction



KOP38 - Raven's Roost, Blue Ridge Parkway Overlook, Looking Northwest - Existing View



KOP38 - Raven's Roost, Blue Ridge Parkway Overlook, Looking Northwest - Proposed View 75' Permanent ROW (15/20 Year Tree Growth)

Scale: 1" = 1000'  
North Arrow  
© 2015 Truescape, Inc.

**Atlantic Coast Pipeline**

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**KOP38**  
Raven's Roost,  
Blue Ridge Parkway Overlook

● Existing View    ■ Proposed View

KOP38 is located on the Blue Ridge Parkway, approximately 1.5 miles northwest of the intersection of Blue Ridge Parkway and US Highway 421, near the town of Lincolnton, North Carolina.

Viewing Location: Raven's Roost	33300000
Viewing Direction: Northwest	315
Viewing Distance: 1.5 miles	2450
Viewing Date: 11/11/2015	11/11/2015
Viewing Time: 10:00 AM	10:00 AM
Viewing Weather: Partly Cloudy	65
Viewing Visibility: 10 miles	10
Viewing Temperature: 65°F	65

---

This is a simulated view of the proposed pipeline project. The yellow shaded area represents the 75-foot permanent right-of-way (ROW) for the pipeline, including 15-20 years of tree regrowth. The existing view is shown in the unshaded area.

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Figure 3-11: Full Simulation, KOP 39, Regrowth Following Construction



KOP 39 (REVISED) - Three Ridges Overlook (REVISED), Looking Southeast - Existing View



KOP 39 (REVISED) - Three Ridges Overlook (REVISED), Looking Southeast - Proposed View: 75' Permanent ROW, 50' Temp. ROW

**Atlantic Coast Pipeline**

**KOP 39 (REVISED)**  
Three Ridges Overlook (REVISED)

Viewpoint Location
Proposed Route

Looking Elevation (ft) - Spot 10	222207.4
Looking Elevation (ft) - Spot 10	222754.4
Elevation of Proposed Pipeline (ft)	2176.2
Height of Terminal Tower (ft)	8.4
Date of Photography	22 November 2016 at 02:45 PM
Orientation of View	SE
Horizontal Field of View	62°
Width of Field of View	88'

NOTES:  
 Images are taken from a camera mounted using a tripod  
 1/2 sec. Shutter speed, ISO 100, f/11, 55mm lens  
 Horizontal field of view is 62 degrees  
 Photos are in color unless noted  
 UTM Zone 17

Photo: Datascape / Crowdfunder  
 RealEarth™, Geo Tracking  
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Figure 3-12: Full Simulation, KOP 39, Regrowth 5 Years after Construction



KOP 39 (REVISED) - Three Ridges Overlook (REVISED), Looking Southeast - Existing View



KOP 39 (REVISED) - Three Ridges Overlook (REVISED), Looking Southeast - Proposed View: 75' Permanent ROW, 50' Temp. ROW (5 Year Tree Growth)

**Atlantic Coast Pipeline**

**KOP 39 (REVISED)**  
Three Ridges Overlook (REVISED)

■ Permanent ROW
■ Temp. ROW

Existing Features (LTM) (LTM ID)	33300074
Existing Features (LTM) (LTM ID)	10170249
Location of Proposed Feature (LTM)	37613
Image File Name (Accession Number)	3-4
Date of Photography	27 November 2016 at 09:07 AM
Resolution of View	10
Altitude of Field of View	624
View of Field of View	100

NOTES:  
 Images captured from a camera mounted on a tripod 17 feet 11 inches above the ground. Images were taken from a camera mounted on a tripod 17 feet 11 inches above the ground. Images were taken from a camera mounted on a tripod 17 feet 11 inches above the ground.

Photo: TrueScape - Coastal Imaging  
 Software: TrueScape  
 Project No.: 101600000000

Provided by:

TrueScape®

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Figure 3-13: Full Simulation, KOP 39, Regrowth 15-20 Years after Construction



KOP 39 (REVISED) - Three Ridges Overlook (REVISED), Looking Southeast - Existing View



KOP 39 (REVISED) - Three Ridges Overlook (REVISED), Looking Southeast - Proposed View: 75' Permanent ROW, 50' Temp. ROW (15-20 Year Tree Growth)

<b>Atlantic Coast Pipeline</b>	
KOP 39 (REVISED) Three Ridges Overlook (REVISED)	
<span style="color: green;">■</span> Study Location <span style="color: yellow;">■</span> Project Area	
Looking Point(s) (TM, Zone 15) Northway Point(s) (TM, Zone 15) Elevation of Photograph Position (AMSL) Height of Camera Above Ground (AGL) Field of Photograph(s) Orientation of Photo Horizontal Field of View Type of Field of View	2222017.4 5377024.4 2776.2 5.4 21 November 2016 at 10:19:50 90 52.0 360
NOTES: Viewpoint location has been determined using 15 point UTM zone 18N coordinates, zone and base UTM and with a camera mounted on a tripod. Heights are above mean sea level. Photograph Credit: © 2016, JRM, LLC	
Photo, Simulation, Content, Usage, Distribution, and Project No.: ULS-2014-0002-0	
Provided by: <b>Truescape</b> www.truescape.com	
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Figure 3-14: Full Simulation, KOP 39, Regrowth 15-20 Years after Construction with Vegetative Restoration



KOP 39 (REVISED) - Three Ridges Overlook (REVISED), Looking Southeast - Existing View



KOP 39 (REVISED) - Three Ridges Overlook (REVISED), Looking Southeast - Proposed View: 75' Permanent ROW, 50' Temp. ROW (15-20 Year Tree Growth with indicative restoration)

**Atlantic Coast Pipeline**

**KOP 39 (REVISED)**  
Three Ridges Overlook (REVISED)

📍 Existing Location
📍 Project Area

Existing Point(s) (UTM Zone 18)	332201.4
Existing Point(s) (UTM Zone 18)	5277024.4
Elevation of Existing Point(s) (Meters)	2176.4
Range of Camera Azimuth (Degrees)	9.4
Date of Photography	23 November 2016 at 02:00 PM
Resolution of View	50
Apparent Field of View	42°
Vertical Angle of View	50

NOTES:  
This report is intended to be used for informational purposes only. It is not a guarantee of accuracy and does not constitute a warranty. The data was collected using a total station and is subject to the accuracy of the instrument and the skill of the operator. The data was collected on 11/23/16 at 02:00 PM. The elevation is in meters.

Photo Services: David of Living  
Qualities - Inc. (2016)  
Project No.: 1516-004-0000-00

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The simulations in Figures 3-11, 3-12, and 3-13 show the likely conditions after construction, with no visual mitigation incorporated. Figure 3-14 shows the right-of-way at this location, approximately 15-20 years after construction, with the incorporation of shallow-rooted perennial shrubs within the right-of-way, planted as visual mitigation to break up the linear nature of the gap in forest. With the incorporation of this mitigation, the corridor would remain visible, but would have less contrast with surrounding forested areas.

### **3.2.5 KOP 40: ANST (Bee Mountain)**

Figures 3-15, 3-16, and 3-17 show the full simulation images for KOP 40. Figure 3-18 shows this simulation with the permanent right-of-way outlined in yellow, for viewer clarity. From this KOP, the segment of the ACP corridor within the “seen area” (see Section 2.1) is approximately at MP 160 along Piney Mountain, approximately 2.25 miles from the KOP (within the middleground, as defined by the USFS). The yellow line in Figure 3-18 shows the location of the right-of-way if it could be seen through the existing dense vegetation on Piney Mountain.

The ACP corridor as seen from this location runs west-northwest from Fortunes Point to Beech Grove Road. KOP 40 is located approximately two miles southwest of Fortunes Point. As a result, the corridor primarily runs perpendicular to the view from KOP 40, except for a short north-south segment, just south of the proposed HDD exit.<sup>4</sup> As shown in the simulation images, Project-related changes in color, line, texture, and other characteristics considered in the SMS would be imperceptible from this KOP, even in leaf-off conditions (e.g. in November, when the baseline imagery was captured), due to intervening vegetation.

### **3.2.6 KOP 64: Shenandoah Mountain Trail Southern Terminus**

As discussed in Section 2.1, the route of the ACP changed since KOP 64 was identified and since the completion of the field surveys described in Section 2.3. The ACP corridor would cross the Shenandoah Mountain Trail at approximately MP 98.7. From this location, the right-of-way would extend approximately 200 feet in either direction before turning, effectively ending the view corridor. At the trail’s intersection with the right-of-way, the ACP corridor would be a dominant visual feature, although views of the ACP corridor from the trail would only be present within a few hundred feet of the crossing, due to the presence of screening vegetation.

The determination regarding density of vegetation was based on Atlantic’s review of aerial photography of the area around KOP 64. Based on this finding, and after consultation with GWNF, no baseline or simulation images of this location were made.

---

<sup>4</sup> The photography for this viewpoint was captured at 2:04pm, with the sun at an altitude of 29.04 degrees and azimuth of 214.51 degrees. , At this location, the sun did not directly illuminate the slope with the proposed ACP corridor.

### **3.3 USFS CONTINGENCY PLAN SIMULATIONS**

To evaluate the potential visual impacts of the contingency plan for the HDD crossing of the BRP and ANST, Atlantic conducted indicative and full simulations from KOPs on the eastern and western side of the crossing area. The results of those simulations are discussed below.

#### **3.3.1 KOP 34: Torry Ridge Trail 1**

KOP 34 presents potential views of the BRP HDD contingency corridor from the west. Figure 3-19 shows the full simulation image of the BRP HDD contingency corridor at KOP 34, 15 to 20 years after construction. Figure 3-20 shows this simulation with the permanent right-of-way outlined in yellow, for viewer clarity due to the relatively dark atmospheric conditions during baseline photography and presence of shade at the KOP. From this KOP, the ACP contingency corridor from approximately MP 157 to MP 158 would be visible as a narrow vegetated (but not forested) band on the far side of the Back Creek valley, approximately 1.2 to 2.0 miles to the southeast. The width of the corridor would become narrower, and the contrast with surrounding areas less prominent, as trees and other vegetation reclaim the temporary right-of-way over time. Both of these views are in the middleground, as defined by the USFS.

#### **3.3.2 KOP 40: ANST (Bee Mountain)**

Figure 3-21 shows the simulated views of the BRP HDD contingency corridor from KOP 40, 15 to 20 years after construction, while Figure 3-22 shows this simulation with the permanent right-of-way outlined in yellow, for viewer clarity. From this KOP, actual views of the BRP HDD contingency corridor would be minimal to nonexistent, due to a combination of factors, including the distance from the KOP; the presence of dense vegetation, even in leaf-off conditions; and the orientation of the ACP corridor perpendicular to the viewer. The latter factor prohibits any axial views of the corridor (where a gap in trees would be most noticeable), and enables intervening vegetation to screen views.

#### **3.3.3 KOP 65: Devils Knob Overlook**

Figure 3-23 shows the full simulation image of the ACP contingency corridor at KOP 65, 15 to 20 years after construction, with the permanent right-of-way outlined in yellow, for viewer clarity. (The fencing shown here has since been replaced.) From this KOP, the corridor, approximately 1.0 mile away, would be blocked by vegetation at the edge of the Devils Knob Overlook. Individual viewers could potentially obtain a view of the contingency corridor by standing at the extreme edge of the overlook (i.e., at the edge of the vegetation, where the slope begins to drop off); however, the typical viewer, standing in the designated overlook area, would not be able to see the contingency corridor (if used) as it would exit the potential directional bore crossing of the BRP on the east side of the Blue Ridge Mountains.

Figure 3-15: Full Simulation, KOP 40, Regrowth Following Construction



KOP40 - Bee Mountain, Appalachian Trail, Looking Northeast - Existing View



KOP40 - Bee Mountain, Appalachian Trail, Looking Northeast - Following Construction

**Atlantic Coast Pipeline**

**ERM - ACP Pipeline ROW  
Additional Forestry**

**Viewpoint KOP40**  
Bee Mountain, Appalachian Trail  
with Contiguous Right of Way (ROW) shown

● Existing Forest
● Proposed Plant

**NOTE:** The simulation for this viewpoint has been developed to show the visual impacts of the proposed pipeline ROW on the existing forest. The simulation is based on the current forest conditions and does not account for any future forest growth or management activities.

Viewpoint Name	KOP40	VIEWPOINT ID	KOP40_01
Location	Bee Mountain, Appalachian Trail	VIEWPOINT DATE	01/15/2016
Location of Proposed Project	ACP ROW	VIEWPOINT SCALE	1:1000
Viewpoint Elevation	544	VIEWPOINT TYPE	Static
Viewpoint Azimuth	135	VIEWPOINT STATUS	Active
Viewpoint Photo Date	04/15/16	VIEWPOINT COMMENTS	
Viewpoint Photo Time	10:00		

**NOTES:**

Viewpoint KOP40 is located on Bee Mountain, approximately 1.5 miles north of the proposed pipeline ROW. The view is from the existing forest, looking northeast. The simulation shows the impact of the proposed pipeline ROW on the existing forest. The simulation is based on the current forest conditions and does not account for any future forest growth or management activities.

Viewpoint KOP40 is located on Bee Mountain, approximately 1.5 miles north of the proposed pipeline ROW. The view is from the existing forest, looking northeast. The simulation shows the impact of the proposed pipeline ROW on the existing forest. The simulation is based on the current forest conditions and does not account for any future forest growth or management activities.

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Figure 3-16: Full Simulation, KOP 40, Regrowth 5 Years after Construction



KOP40 - Bee Mountain, Appalachian Trail, Looking Northeast - Existing View



KOP40 - Bee Mountain, Appalachian Trail, Looking Northeast - Proposed View 75' Permanent ROW (5 Year Tree Growth)

**Atlantic Coast Pipeline**

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**KOP40**  
Bee Mountain, Appalachian Trail

■ 5 Year Growth    ■ 75' Permanent ROW

This visualization was created using Truescape 3D software. The image is a simulated view of the proposed project and does not represent the actual view. The image is for informational purposes only and should not be used for any other purpose.

Project Name:	KOP40
Project Location:	Bee Mountain, Appalachian Trail
Project Description:	Proposed 75' Permanent ROW (5 Year Tree Growth)
Date of Image:	5 November 2015 09:50 AM
Image Scale:	1:100
Image Resolution:	1920 x 1080

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Figure 3-17: Full Simulation, KOP 40, Regrowth 15-20 Years after Construction



KOP40 - Bee Mountain, Appalachian Trail, Looking Northeast - Existing View



KOP40 - Bee Mountain, Appalachian Trail, Looking Northeast - Proposed View 75' Permanent ROW (15/20 Year Tree Growth)

**Atlantic Coast Pipeline**

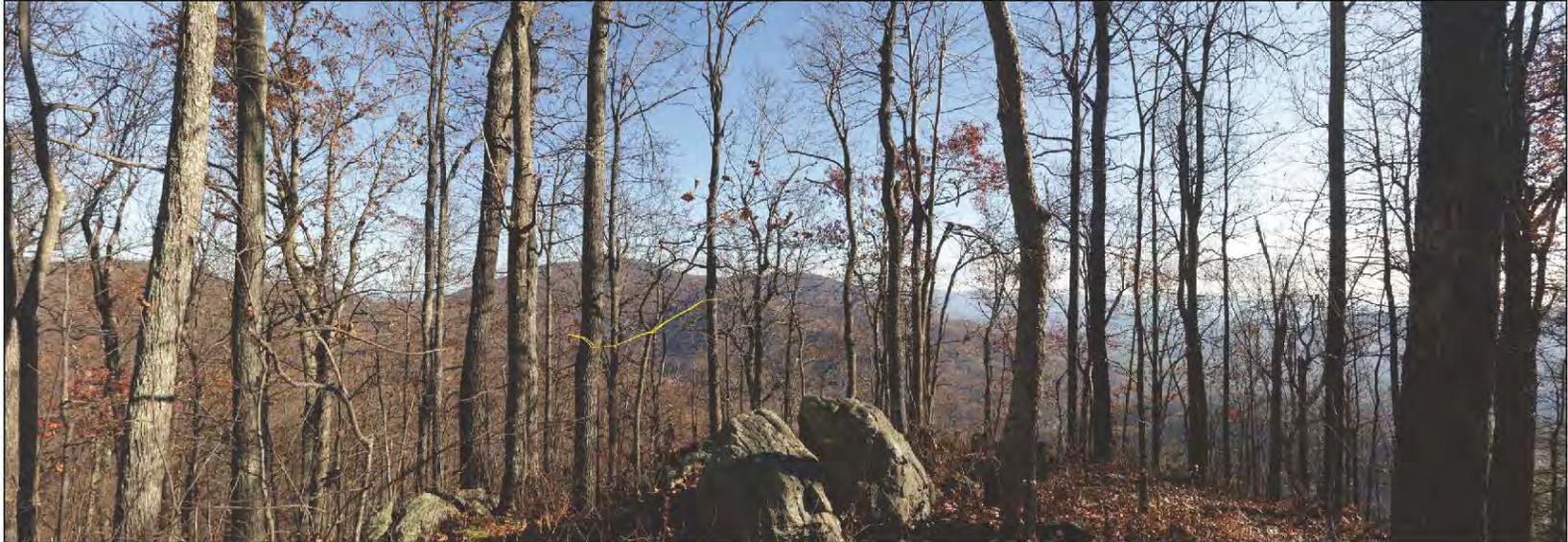
KOP40  
Bee Mountain, Appalachian Trail

DATE: 19 July 2015

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Figure 3-18: Full Simulation, KOP 40, Regrowth 15-20 Years after Construction, Permanent ROW Outlined



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Figure 3-19: Full Simulation, KOP 34, Contingency Plan



Viewpoint KOP34 - Torry Ridge Trail 1, Looking Southeast - Existing View



Viewpoint KOP34 - Torry Ridge Trail 1, Looking Southeast - Proposed View

**Atlantic Coast Pipeline**

**ERM - ACP Pipeline ROW  
Additional Forestry**

**Viewpoint KOP34**  
Torry Ridge Trail 1  
with Contingency Right of Way (KOW) shown

● Viewpoint Location ● Project Area

NOTE: The above pipeline alignment has been suggested to allow for visual protection only and does not represent the actual width of the pipeline ROW.

Existing Position (UTM - Zone 18)	278670.3
Existing Position (Nor. Zone 18)	5279979.9
Position of Photogram Position (WGS84)	2644.2
Height of Camera above Ground (m)	6.4
Date of Photography	6 Nov 16 at 10:4 AM
Orientation of Photo	90
Horizontal Field of View	124°
Vertical Field of View	90°

NOTES:

Viewpoint location has been known approximately 97 and 1.0m above ground. Ground data (GDS) available at camera location point.

Heights are above mean sea level. Other elevation values given in feet (1.0m = 3.28084 ft).

No part of this photo simulation shall be altered in any way. Visual accuracy should be made known for full size "hardcopy" only.

Photo Simulation Created Using  
TrueScape® Technology  
(Patent No. US 9,384,208 B2)

Powered by

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Figure 3-21: Full Simulation, KOP 40, Contingency Plan



Viewpoint KOP40 - Bee Mountain, Appalachian Trail, Looking Northeast - Existing View



Viewpoint KOP40 - Bee Mountain, Appalachian Trail, Looking Northeast - Proposed View

**Atlantic Coast Pipeline**

**ERM - ACP Pipeline ROW  
Additional Forestry**

**Viewpoint KOP40**  
Bee Mountain, Appalachian Trail  
with Contingency Right of Way (ROW) shown

60 (1) The above page(s) in the Report has been incorporated with the final pipeline route and has been incorporated into the final route of the pipeline.

Existing Condition (2016 - 2018)	2,000,000 ft <sup>2</sup>
Reforestation Condition (2018 - 2020)	2,000,000 ft <sup>2</sup>
Quantity of Reforestation to occur (2018-2020)	2,000,000 ft <sup>2</sup>
Cost of Reforestation	\$ 1.6 million (at 2018 cost)
Contingency of 100%	2,000,000 ft <sup>2</sup>
Contingency of 100%	2,000,000 ft <sup>2</sup>

**Notes:**

Viewpoint location has been identified based on the 100% and 100% Right of Way (ROW) and the 100% ROW and will be a permanent ROW.

Reforestation will occur in the 100% ROW and will be a permanent ROW.

This part of the plan distribution shall be allowed to stay until the ROW is closed for the full 100% ROW.

Should reforestation be allowed for more than the full 100% ROW, the ROW shall be closed.

Truescape Visualizer (Desktop Version)  
 User: Viewpoint KOP40 - Bee Mountain  
 Project No.: 100-100-100-100

Viewed by:

**Truescape**

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DATE: 21 April 2018	SHEET: 5
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Figure 3-23: Full Simulation, KOP 65, Contingency Plan, Permanent ROW Outlined



Viewpoint KOP65 - Devil's Knob, Looking South - Existing View



Viewpoint KOP65 - Devil's Knob, Looking South - Proposed View (Right Of Way Overlaid)

**Atlantic Coast Pipeline**

**ERM - ACP Pipeline ROW  
Additional Forestry**

**Viewpoint KOP65**  
Devil's Knob  
with Contingency Right of Way (ROW) shown

Viewpoint Location
Project Area

NOTE: The above applies to the alignment for both proposed routes with the actual pipeline route and/or right-of-way shown for actual route.

Routing Length (miles)	22.00/21.5
Routing Distance (miles)	107.00/106.5
Distance to Nearest Access Road (miles)	0.70/1.1
Height of Terrain above Ground (feet)	5.4
Area of Forested Area	6.96/6.96 ac +/-
Proposed Area (ac)	6
Remaining Forest (ac)	1.96
Net Loss (ac)	0.0

NOTE:

Viewpoint locations have been provided for informational purposes only. They are not intended to be used for any other purpose.

**Mark Chiswell & Adam Bentley**  
3D Engineering  
302

Images are shown as-is and not to scale.  
Images are shown as-is and not to scale.  
Images are shown as-is and not to scale.

No part of this plan, including any part thereof, shall be used for any other purpose without the written consent of the engineer.

Visual measurements should be made from the 5th story of the building.

Photo Simulation - 3D out of Context  
Terrain: 100  
Project No.: 145\_0004\_000\_000

Prepared by:

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### 3.4 ANST FULL VISUAL SIMULATIONS

Atlantic conducted full visual simulations of eight KOPs associated with the ANST, as listed in Table 2-2, using the TrueView methodology described in Section 2.4.2. As indicated in Table 2-2, KOP ANST 01 provided no view of the ACP corridor at all, due to topography and direction of the only possible sight line. The subsections below present the simulations for the other ANST KOPs, showing the ACP corridor as it would be seen from each of these KOPs. This includes imagery of existing conditions, as well as separate simulations of views one growing season following construction, and approximately 5 years and 15 to 20 years following construction. High-resolution, large-format versions of these simulations are provided in Appendix B.

#### 3.4.1 KOP ANST 02: Humpback Rocks

Figures 3-24, 3-25, 3-26, and 3-27 show the full simulation images for KOP ANST 02. Figure 3-25 shows this simulation with the permanent right-of-way outlined in yellow, for viewer clarity. From this KOP, the segment of the ACP corridor within the “seen area” (see Section 2.1) is approximately MP 152-154, and located approximately 3 to 4 miles from the KOP. As shown in the Figures, due to existing vegetation patterns in the vicinity of the ACP corridor, Project-related changes in color, line, texture, and other visual characteristics would be minimally perceptible from this KOP, and would be indistinguishable from other development and evidence of human activity already within the view. The corridor would become even less prominent as trees and other vegetation reclaim the temporary right-of-way over time.

#### 3.4.2 KOP ANST 03: Battery Cliffs

Figures 3-28, 3-29, 3-30, and 3-31 show the full simulation images for KOP ANST 03. Figure 3-29 shows this simulation with the permanent right-of-way outlined in yellow, for viewer clarity. From this KOP, the segment of the ACP corridor within the “seen area” (see Section 2.1) is approximately MP 152-154, and located approximately 2.5 to 4 miles from the KOP. As shown in the Figures, only a short portion of the cleared pipeline corridor would be visible and clear of tree cover and at this distance, and views would be fairly minimal and not noticeable. Project-related changes in color, line, texture, and other visual characteristics would be minimally perceptible from this KOP. The ACP corridor would generally be indistinguishable from other development and evidence of human activity within the view.

#### 3.4.3 KOP ANST 04: Laurel Springs

Figures 3-32, 3-33, 3-34, and 3-35 show the full simulation images for KOP ANST 04. Figure 3-33 shows this simulation with the permanent right-of-way outlined in yellow, for viewer clarity. From this KOP, the segment of the ACP corridor within the “seen area” (see Section 2.1) is approximately MP 152-154, and located approximately 2 to 4 miles from the KOP. As demonstrated by the yellow “indicative overlay” in Figure 3-32, the view of the right-of-way from this KOP would be blocked by vegetation, particularly during leaf-on conditions. A viewer standing slightly to the left of the location depicted in the Figures could see more of the right-of-way, but generally only during leaf off conditions. From such a view, project-related changes in color, line, texture, and other visual characteristics would be minimally perceptible

from this KOP, and would be indistinguishable from other development and evidence of human activity already within the view.

#### **3.4.4 KOP ANST 05: Cedar Cliffs**

Figure 3-36, 3-37, and 3-38 show the full simulation images for KOP ANST 05. From this KOP, the ACP corridor would be clearly visible as a narrow band of vegetated open land to the east of Torry Ridge (the mountain feature in the left-center of the image) and between two large cleared agricultural fields, approximately from MPs 153 to 156 (from right to left). The corridor is located approximately 0.8 mile from the Cedar Cliffs location on the ANST (KOP ANST 05) at its closest point (bottom-center of the images, corresponding approximately to MP 155), with MP 152 approximately 3 miles away (center of the images, approaching the horizon). The appearance of the corridor would be similar to the cleared areas along Back Creek and Mount Torry Road, closer to the base of Torry Ridge. As shown in the Figures, Project-related changes in color, line, texture, and other characteristics considered in the SMS would be apparent to the viewer, although these changes would not dominate the view. The corridor would become less prominent over time, as vegetation reclaims the temporary right-of-way, as demonstrated in Figure 3-38.

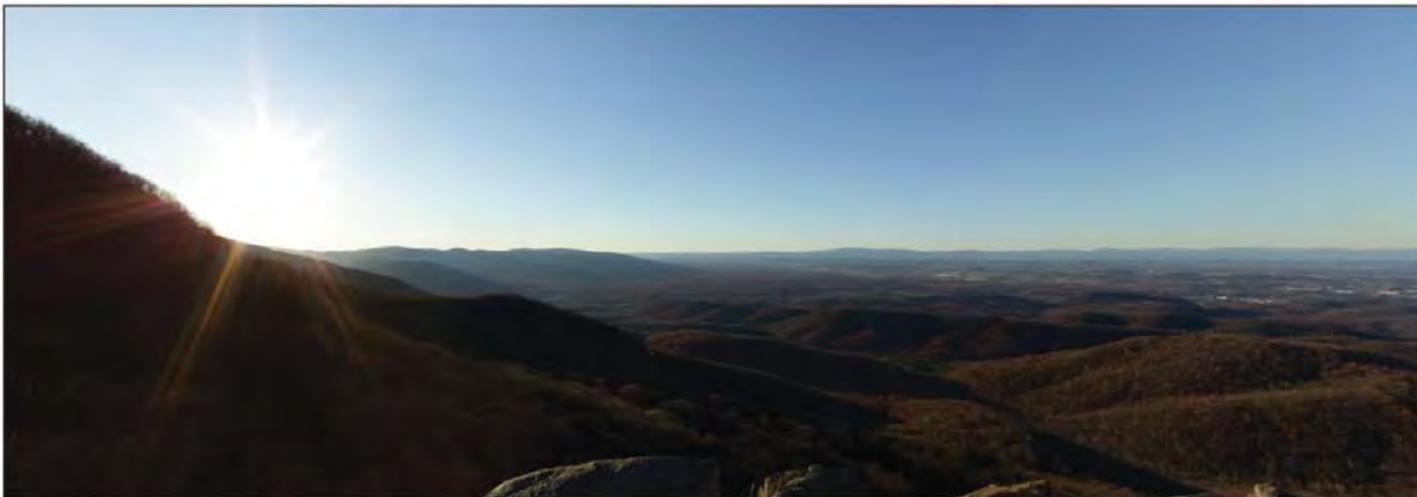
#### **3.4.5 KOP ANST 06: Little Ravens Roost**

Figure 3-39, 3-40, and 3-41 show the full simulation images for KOP ANST 06. From this KOP, the ACP corridor would be visible as a narrow band of vegetated open land wrapping around Torry Ridge (the mountain feature in the approximate center of the image), approximately from MPs 152 to 156 (from right to left). The corridor is approximately 0.65 mile from KOP ANST 06 at its closest point (bottom-center of the image, corresponding approximately to MP 155), with MP 152 approximately 3.3 miles away (middle-right of the images, approaching the horizon). The appearance of the corridor would be similar to the cleared areas along Back Creek and Mount Torry Road, closer to the base of Torry Ridge. As shown in the Figures, Project-related changes in color, line, texture, and other characteristics considered in the SMS would be apparent to the viewer, and would be a new and prominent element of the view. The corridor would become less prominent over time, as vegetation reclaims the temporary right-of-way.

Figure 3-24: Full Simulation, KOP ANST 02, Regrowth Following Construction



ANST 02 - Humpback Rocks, Looking Northwest - Existing View



ANST 02 - Humpback Rocks, Looking Northwest - Proposed View: 75' Permanent ROW, 50' Temp. ROW

**Atlantic Coast Pipeline**

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**ANST 02**  
Humpback Rocks

● Permanent ROW    ● Temp. ROW

Existing Features (1/18 - June 15)	2/20/2018
Modeling Features (1/18 - June 15)	5/17/2017
Location of Proposed Features (only)	PME 2
Height of Camera Above Ground (ft)	5.4
Color of Proposed Pipe	Yellow (100% on 10/1/18)
Classification of Class	ROW
Horizontal Field of View	50°
Vertical Field of View	50°

**NOTES:**  
 Viewports in this file have been automatically using 50' and 100' FOV. Adjustments needed from 100' FOV will be captured in the next file.  
 Humpback Rocks model used.  
 Program used: Truescape  
 (10/1/2018)

---

Photo Simulation Created Using  
 TrueView™ by Truescape  
 Project No.: US-2013-0015

Provided by

**Truescape®**

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DATE 05 January 2017	SHEET 5
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Figure 3-25: Full Simulation, KOP ANST 02, Regrowth Following Construction, Permanent ROW Outlined



ANST 02 - Humpback Rocks, Looking Northwest - Existing View



ANST 02 - Humpback Rocks, Looking Northwest - Indicative Overlay: 75' Permanent ROW, 50' Temp. ROW

<b>Atlantic Coast Pipeline</b>	
ANST 02 Humpback Rocks	
<span style="color: blue;">●</span> Humpback Rocks <span style="color: green;">●</span> Project Area	
Existing Photo(s) (Y/N) <b>EXISTING</b> New Photo(s) (Y/N) <b>NEW</b> Date(s) of Photo(s) (Y/M/D) <b>2016.3</b> Height of Camera Above Ground (ft) <b>6.4</b> Date of Photography <b>23 November 2016 at 05:21:50</b> Orientation of View <b>000</b> Horizontal Field of View <b>52.6</b> Vertical Field of View <b>50</b>	
<b>NOTES:</b> This photo has been simulated using TDS and 3D an. Images were taken at 100' and 200' camera heights and Height and orientation modified Photo and Date taken 2/28/2016 11	
Photo Developer: Contact TDS Location: Durham, NC Project No.: 101-2014-0000-01	
Provided by <b>Truescape</b> www.truescape.com	
DATE 05 January 2017	PAGE 6

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Figure 3-26: Full Simulation, KOP ANST 02, Regrowth 5 Years after Construction



ANST 02 - Humpback Rocks, Looking Northwest - Existing View



ANST 02 - Humpback Rocks, Looking Northwest - Proposed View: 75' Permanent ROW, 50' Temp. ROW (5 Year Tree Growth)

<b>Atlantic Coast Pipeline</b>	
ANST 02 Humpback Rocks	
<span style="color: blue;">■</span> Permanent ROW <span style="color: yellow;">■</span> Temp. ROW	
Elevation (Feet) (TM)    June 15 2250000.0	Elevation (Feet) (TM)    June 15 2250000.0
Location of Photography (Miles)    2016.2	Location of Photography (Miles)    2016.2
Height of Camera Above Ground (ft)    5.4	Height of Camera Above Ground (ft)    5.4
Date of Photography    25 November 2016 at 05:21 PM	Date of Photography    25 November 2016 at 05:21 PM
Resolution of View    800	Resolution of View    800
Horizontal Field of View    15.4°	Horizontal Field of View    15.4°
Vertical Field of View    30°	Vertical Field of View    30°
NOTES: Viewports for other locations are available upon request. Contact the project manager for more information. Project Manager: [Name] Project Location: [Location] Date: [Date]	
Photo Simulation Created Using TrueScape®    TrueScape® Project No.: [Number]	
Provided by: <b>Truescape®</b> www.truescape.com	
DATE: 05 January 2017	SHEET: 7

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Figure 3-27: Full Simulation, KOP ANST 02, Regrowth 15-20 Years after Construction



ANST 02 - Humpback Rocks, Looking Northwest - Existing View



ANST 02 - Humpback Rocks, Looking Northwest - Proposed View: 75' Permanent ROW, 50' Temp. ROW (15-20 Year Tree Growth)

**Atlantic Coast Pipeline**

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**ANST 02**  
Humpback Rocks

● Permanent ROW    ● Temp. ROW

Viewing Location: 02 - June 15	229464.8
Viewing Elevation: 2278 - June 15	5575.87
Elevation of Viewing Location (m):	574.2
Height of Camera Above Ground (ft):	5.4
Date of Photograph:	20 November 2016 at 05:04
Orientation of View:	000
Horizontal Field of View:	50°
Vertical Field of View:	50°

**NOTES**

Viewports are taken from a camera positioned using a tripod 5.4 feet above ground. Horizontal and vertical FOV are both set to 50 degrees. All elevation data is based on the 2011 USGS National Elevation Dataset (NED).

Photos: Steve Riggall / Coastal Clarity  
 Software: Truescape  
 Project No.: 04-2013-0001-01

Provided by

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Figure 3-28: Full Simulation, KOP ANST 03, Regrowth Following Construction



ANST 03 - Battery Cliffs, Looking West-Northwest - Existing View



ANST 03 - Battery Cliffs, Looking West-Northwest - Proposed View: 75' Permanent ROW, 50' Temp. ROW

**Atlantic Coast Pipeline**

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**ANST 03**  
Battery Cliffs

● TrueScape Location   
 ● Project Area

Existing Elevation (ft)	2242 (96 ft)
Proposed Elevation (ft)	2298 (91 ft)
Elevation of Proposed Pipeline (ft)	2542 (9)
Height of Temporary Access Structure (ft)	9.4
Final All-Weather Right-of-Way	75' (30' from 200' to 275' and 50' from 275' to 325')
Proposed ROW	75'
Temporary ROW	50'
Width of Road of View	88'

---

**NOTES:**

Viewpoint location has been verified using GPS and is 1/2 mi. (approximate) from the 75' and 50' ROW boundaries. The proposed view is shown in the image. Please refer to the map for details.

Photo Date: 05/01/2017  
Photo Time: 10:58:43 AM EDT

Photo Date: 05/01/2017  
Photo Time: 10:58:43 AM EDT

TrueScape®

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DATE	05 January 2017	TIME	9
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Figure 3-29: Full Simulation, KOP ANST 03, Regrowth Following Construction, Permanent ROW Outlined



ANST 03 - Battery Cliffs, Looking West-Northwest - Existing View



ANST 03 - Battery Cliffs, Looking West-Northwest - Indicative Overlay: 75' Permanent ROW, 50' Temp. ROW

<b>Atlantic Coast Pipeline</b>	
ANST 03 Battery Cliffs	
<span style="color: blue;">●</span> Permanent ROW <span style="color: yellow;">●</span> Temp. ROW	
Looking Point: 03 - 030103 Looking Point: 03 - 030103 Elevation of Photograph Position (m): 342.4 Elevation of Photograph: 342.4 Elevation of View: 342.4 Horizontal Field of View: 64 Vertical Field of View: 50	030103 030103 342.4 342.4 342.4 64 50
NOTES: - This is a simulated view of the landscape. It is not a photograph of the actual landscape. - The yellow line indicates the 75' Permanent ROW and 50' Temp. ROW. - The blue line indicates the 50' Temp. ROW.	
Project Manager/Control Group: Buckle Up! Inc. Project No.: 13-1303-03	
Prepared by: <b>Truescape</b> www.truescape.com	
Date: 05 January 2017	Sheet: 10

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Figure 3-30: Full Simulation, KOP ANST 03, Regrowth 5 Years after Construction



ANST 03 - Battery Cliffs, Looking West-Northwest - Existing View



ANST 03 - Battery Cliffs, Looking West-Northwest - Proposed View: 75' Permanent ROW, 50' Temp. ROW (5 Year Tree Growth)

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Recycling Symbol: 100% Recycled Paper

<b>Atlantic Coast Pipeline</b>	
ANST 03 Battery Cliffs	
<input checked="" type="checkbox"/> Existing Condition <input type="checkbox"/> Project Area	
Existing Elevation (1984 - Zone 18)	2242096.9
Existing Elevation (1984 - Zone 18)	9250000.0
Elevation of Photogram Station (MSSL)	3042.0
Height of Camera Above Ground (MSSL)	5.0
Date of Photography	15 November 2016 at 10:28:00
Coordinates of View	14800
Horizontal Field of View	32.0
Vertical Field of View	50.0
<p>NOTES</p> <p>Coordinates are based on the datum specified in the project description. All elevations are based on the datum specified in the project description. All elevations are based on the datum specified in the project description.</p>	
<p>Photo Technology: Coastal Imaging            Equipment: Canon EOS 70D            Project No.: 15-004-000-010</p> <p>Printed On:</p>	
<b>Truescape</b>	
www.truescape.com	
Date	05 January 2017
Sheet	11

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Figure 3-31: Full Simulation, KOP ANST 03, Regrowth 15-20 Years after Construction



ANST 03 - Battery Cliffs, Looking West-Northwest - Existing View



ANST 03 - Battery Cliffs, Looking West-Northwest - Proposed View: 75' Permanent ROW, 50' Temp. ROW (15-20 Year Tree Growth)

Not to Scale  
Scale: 1" = 100'

<b>Atlantic Coast Pipeline</b>	
ANST 03 Battery Cliffs	
<input checked="" type="checkbox"/> Existing View <input type="checkbox"/> Proposed View	
Existing Problem (15' - 20' Tree Growth)	20,000 sq ft
Existing Problem (15' - 20' Tree Growth)	10,000 sq ft
Exposure of Proposed Pipeline (15' - 20' Tree Growth)	20,000 sq ft
Height of Camera Above Ground (ft)	6.4
View of Proposed Pipeline	15 December 2016 at 10:00 AM
Horizontal Field of View	60°
Vertical Field of View	30°
<p>NOTES:</p> <p>Images are simulated from existing views using 15 and 20 year regrowth models based on the 2012 and 2014 camera heights and above ground exposure.</p> <p>Images are shown in a standard perspective view.</p> <p>Proposed Pipeline Status: 15' - 20' Tree Growth</p>	
<p>Photo: (Simulated) Camera (15' - 20' Tree Growth)</p> <p>Photographer: TRUESCAPE, INC.</p> <p>Created by:</p> <p><b>Truescape</b></p> <p>www.truescape.com</p>	
DATE:	05 January 2017
SHEET:	12

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Figure 3-32: Full Simulation, KOP ANST 04, Regrowth Following Construction



ANST 04 - Laurel Springs, Looking Northwest - Existing View



ANST 04 - Laurel Springs, Looking Northwest - Proposed View: 75' Permanent ROW, 50' Temp. ROW

**Atlantic Coast Pipeline**

**ANST 04**  
Laurel Springs

Existing View
Proposed View

Starting Point (75' ROW)	323907.2
Ending Point (75' ROW)	321000.2
Distance of Proposed Pipeline (Miles)	3.954
Height of Camera Above Ground (ft)	6.4
Date of Photo/Video	1 December 2016 at 9:50 AM
Resolution of View	100
Horizontal Field of View	50°
Camera Field of View	50°

**NOTES**  
 Images are for informational purposes only and do not constitute a contract. All rights reserved. © 2016 Truescape, Inc. All rights reserved.

Photo: Truescape | Created Using:  
 Truescape | Truescape  
 Project No.: US-2016-001-001

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05 January 2017	13

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Figure 3-33: Full Simulation, KOP ANST 04, Regrowth Following Construction, Permanent ROW Outlined



ANST 04 - Laurel Springs, Looking Northwest - Existing View



ANST 04 - Laurel Springs, Looking Northwest - Indicative Overlay: 75' Permanent ROW, 50' Temp. ROW

Atlantic  
Coast  
Pipeline

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ANST 04  
Laurel Springs

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Proposed Alignment
Project Area

---

Location: Laurel Springs, NC	02/28/17
Starting Elevation (LTS)	5176.0412
Elevation of Proposed Pipeline (m)	5295.4
Height of Laurel Spruce (m)	5.4
Class of Photographic	1:250000 Digital 4000
Resolution of Data	30m
Horizontal Field of View	524
Vertical Field of View	50

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NOTES:  
This report is an indicative overlay and does not represent any final design or construction. It is for informational purposes only. The actual location of the pipeline will be determined by the final design and construction. The actual location of the pipeline will be determined by the final design and construction. The actual location of the pipeline will be determined by the final design and construction.

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Photo Simulation Created Using  
TrueScape Technology  
Phone No. 01-813-336-5151

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04/11	04/11
05 January 2017	14

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Figure 3-34: Full Simulation, KOP ANST 04, Regrowth 5 Years after Construction



ANST 04 - Laurel Springs, Looking Northwest - Existing View



ANST 04 - Laurel Springs, Looking Northwest - Proposed View: 75' Permanent ROW, 50' Temp. ROW (5 Year Tree Growth)

<b>Atlantic Coast Pipeline</b>	
ANST 04 Laurel Springs	
<input type="checkbox"/> Proposed Location <input type="checkbox"/> Project Area	
Existing Elevation (17M - Elev 15) New Elevation (17M - Elev 15) Elevation of Proposed Pipeline (50') Height of Screen from Proposed ROW Date of Photography Coloration of View Horizontal Field of View Vertical Field of View	12/26/2013 10/16/2013 8/25/13 10.0 1 December 2013 at 10:00 AM MW 60° 100°
NOTES: Viewpoint is also the location of proposed crossing of US 421 (Highway 421) at Laurel Springs, NC. The proposed crossing is located approximately 1/4 mile north of the proposed crossing High-Speed Rail Station (17M - Elev 15)	
Photo: New Jersey Council on Energy Efficiency Project No.: US-911300-010 Provided by: <b>Truescape</b> www.truescape.com	
DATE 05 January 2017	SHEET 15

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Figure 3-36: Full Simulation, KOP ANST 05, Regrowth Following Construction



ANST 05 - Cedar Cliffs B, Looking Northwest - Existing View



ANST 05 - Cedar Cliffs B, Looking Northwest - Proposed View: 75' Permanent ROW, 50' Temp. ROW

**Atlantic Coast Pipeline**

ANST 05  
Cedar Cliffs B

● Home Location    ● Project Area

Location Position (UTM Zone 18)	3225942.2
Northing Position (UTM Zone 18)	5078264.2
Elevation of Photogram Point (MGS)	3897.7
Height of Camera Above Ground (M)	26.4
Date of Photography	15 November 2016 at 05:17:02
Resolution of Image	400
Horizontal Field of View	52.8
Vertical Field of View	38

10/15/17  
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 Charlotte, NC 28216-3000  
 Phone: 704.366.1000  
 Fax: 704.366.1001  
 www.truescape.com

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Figure 3-37: Full Simulation, KOP ANST 05, Regrowth 5 Years after Construction



ANST 05 - Cedar Cliffs B, Looking Northwest - Existing View



ANST 05 - Cedar Cliffs B, Looking Northwest - Proposed View: 75' Permanent ROW, 50' Temp. ROW (5 Year Tree Growth)

Scale: 1" = 1000'  
North Arrow

<b>Atlantic Coast Pipeline</b>	
ANST 05 Cedar Cliffs B	
<span style="color: blue;">●</span> Observation Location <span style="color: yellow;">●</span> Pipeline Right-of-Way	
Building Elevation (7/10 - 2/10/15) Building Footprint (7/10 - 2/10/15) Elevation of Photograph Position (7/10 - 2/10/15) Height of Camera Above Ground (7/10 - 2/10/15) Date of Photograph Orientation of View Horizontal Field of View Vertical Field of View	220.06427 1000000.0 1000.0 5.4 12/26/2016 at 02:44 PM 90° 62.4 50
METADATA Generated by: <a href="http://www.truescape.com">www.truescape.com</a> Version: 1.0.0 Date: 12/26/2016 at 02:44 PM Orientation: 90° Height: 5.4 Horizontal Field of View: 62.4 Vertical Field of View: 50	
Photo Simulated by: <a href="http://www.truescape.com">www.truescape.com</a> Version: 1.0.0 Date: 12/26/2016 at 02:44 PM Orientation: 90° Height: 5.4 Horizontal Field of View: 62.4 Vertical Field of View: 50	
<b>Truescape</b> <a href="http://www.truescape.com">www.truescape.com</a>	
DATE	SHEET
05 January 2017	18

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Figure 3-38: Full Simulation, KOP ANST 05, Regrowth 15-20 Years after Construction



ANST 05 - Cedar Cliffs B, Looking Northwest - Existing View



ANST 05 - Cedar Cliffs B, Looking Northwest - Proposed View: 75' Permanent ROW, 50' Temp. ROW (15-20 Year Tree Growth)

**Atlantic Coast Pipeline**

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**ANST 05**  
Cedar Cliffs B

● Proposed Location    ● Project Area

Project Number: ANST 05	20190401
Project Title: ANST 05	20190401
Location of Project: Cedar Cliffs B	20190401
Project of Interest: ANST 05	20190401
Project of Interest: ANST 05	20190401
Project of Interest: ANST 05	20190401
Project of Interest: ANST 05	20190401
Project of Interest: ANST 05	20190401
Project of Interest: ANST 05	20190401

**NOTES**

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Project Sponsor: **Truescape**  
 Project Number: **20190401**

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Project Sponsor: **Truescape**  
 Project Number: **20190401**

Provided by:

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2019	2019
05 January 2017	19

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Figure 3-39: Full Simulation, KOP ANST 06, Regrowth Following Construction



ANST 06 - Little Ravens Roost A, Looking West-Northwest - Existing View



ANST 06 - Little Ravens Roost A, Looking West-Northwest - Proposed View: 75' Permanent ROW, 50' Temp. ROW

Scale: 1" = 1000'  
North Arrow: North  
Image Date: 05/01/2017  
Image Time: 10:10 AM

**Atlantic Coast Pipeline**

---

**ANST 06**  
Little Ravens Roost A

● Webcam Location    ● Project Area



Existing Filename (Full Size)	XXXXXXXX
Existing Filename (Full Size)	XXXXXXXX
Resolution of Existing Image (pixels)	2798 x 2160
Height of Existing Image (pixels)	2160
Width of Existing Image (pixels)	2798
Date of Photography	12 December 2016 at 12:05 PM
Resolution of Image	1024 x 768
Horizontal Field of View	82.4°
Vertical Field of View	60.0°

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**NOTES:**  
 This image was captured from a webcam located on the project area.  
 It is not intended to be used for legal or regulatory purposes.  
 For more information, please contact the project manager.  
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 Phoenix, AZ 85018-1000

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Figure 3-40: Full Simulation, KOP ANST 06, Regrowth 5 Years after Construction



ANST 06 - Little Ravens Roost A, Looking West-Northwest - Existing View



ANST 06 - Little Ravens Roost A, Looking West-Northwest - Proposed View: 75' Permanent ROW, 50' Temp. ROW (5 Year Tree Growth)

Atlantic Coast Pipeline

ANST 06  
Little Ravens Roost A

■ Regions Control    ■ Photo-Shop

Survey/Project ID: 2017-01	22/06/2017
Survey/Project ID: 2017-01	10/06/2017
Location of Proposed Pipeline (MILES)	2708.17
Height of Camera Above Ground (ft)	5.4
Date of Photography	10 December 2016 at 03:04 PM
Resolution of image	5000
Horizontal Field of View	15.7
Vertical Field of View	36

**NOTES:**  
 Viewport for this file has been simulated using 75 and 50 feet oblique views centered from 15000 and with a camera height of 5.4 feet.  
 Heights are approximate values.  
 Photo-Shop Control Using  
 Windows 7 - Technology  
 © 2017 TrueScape, LLC 800.930.6333  
 Photo-Shop

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05 January 2017	21

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Figure 3-41: Full Simulation, KOP ANST 06, Regrowth 15-20 Years after Construction



ANST 06 - Little Ravens Roost A, Looking West-Northwest - Existing View



ANST 06 - Little Ravens Roost A, Looking West-Northwest - Proposed View: 75' Permanent ROW, 50' Temp. ROW (15-20 Year Tree Growth)

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Atlantic Coast Pipeline

ANST 06  
Little Ravens Roost A

● Proposed Location    ● Proposed Area

Location: Providence, RI	2220000.0
Northing: Providence, RI	1070000.0
Elevation of Proposed Problem (MGS):	2100.0
Height of Camera Above Ground (ft):	5.4
Date of Photography:	15 December 2016 at 10:29 PM
Resolution of Camera:	4000
Transmitted bits of image:	104
Vertical Field of View:	50

NOTES:  
 1. Images are taken from a fixed altitude using a 100mm lens.  
 2. Low-angle lenses are used from 1.00x and vertical camera resolution is 4000.  
 3. Height of camera above ground is 5.4 ft.  
 4. Proposed Area Color: Yellow  
 5. Date: 12 Dec 16

Photo Simulated by Truescape® using  
 Realtime™ Technology  
 #PowerUp - US 800 430 6353

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		22

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### **3.4.6 KOP ANST 07: Sherando Valley**

Figures 3-42, 3-43, 3-44 and 3-45 show the full simulation images for KOP ANST 07. Figure 3-43 shows this simulation with the permanent right-of-way outlined in yellow, for viewer clarity. From this KOP, cleared areas of the ACP corridor would be intermittently and only slightly visible among foliage during leaf-off conditions (as shown in the Figures), but would likely be totally obscured during leaf-on conditions. This is because this KOP viewing area is primarily covered in and within mature forest cover. The partially visible segments of the right-of-way correspond to approximately MPs 152 through 157. The corridor is approximately 0.5 mile from KOP ANST 07 at its closest point (bottom-center of the images, corresponding approximately to MP 156.5), with MP 152 approximately 4 miles away (center of the images, approaching the horizon). The appearance of the corridor would be similar to, but less distinct than the cleared areas along Back Creek and Mount Torry Road, closer to the base of Torry Ridge. The corridor would become less prominent over time, as vegetation reclaims the temporary right-of-way.

### **3.4.7 KOP ANST 08a: Three Ridges Overlook, North**

Figures 3-46, 3-47, 3-48, and 3-49 show the full simulation images for KOP ANST 08a. As shown in the figures, observers would have a nearly axial view (facing southeast and down the right-of-way) of the ACP corridor at approximately MP 159 as it climbs over Piney Mountain, just south of Atlantic's proposed HDD. This segment of the corridor, which is not within the GWNF, would be approximately 0.75 to 1.0 mile from the viewer. The simulation in Figures 3-46, 3-47, and 3-48 show the likely conditions after construction, with no visual mitigation incorporated. With no mitigation, shortly after construction, the ACP corridor would be visible axially and prominently as a "stripe" for all viewers at the top of Piney Mountain. The grassy corridor would contrast with surrounding forest in terms of color (grasses would generally be lighter than trees, even during leaf-off conditions) and vegetative texture, and would introduce a linear feature inconsistent with the existing landscape.

As with other visible segments of the corridor, regrowth in the temporary right-of-way would reduce visual contrast over time. Figure 3-49 shows the right-of-way at this location, approximately 15-20 years after construction, with the incorporation of shallow-rooted perennial shrubs within the right-of-way, planted as visual mitigation to break up the linear nature of the corridor. The combination of these plantings, which would occur soon after completion of construction, and natural regrowth in the temporary right-of-way would significantly reduce contrast between the corridor and surrounding forest, in terms of color and texture, and would reduce the prominence of the corridor's linear character.

### **3.4.8 KOP ANST 08b: Three Ridges Overlook, South**

Figures 3-50, 3-51, 3-52, and 3-53 show the full simulation images for KOP ANST 08b. Views and visual contrast from this location (approximately 200 feet southwest of ANST 8a), as shown in Figures 3-50, 3-51, and 3-52 would be similar to those described for KOP ANST 8a. This segment of the corridor, which is not within the GWNF, would be approximately 0.75 to 1.0 mile from the viewer.

With no mitigation, shortly after construction, the ACP corridor would be visible axially and prominently as a “stripe” for all viewers at the top of Piney Mountain. The grassy corridor would contrast with surrounding forest in terms of color (grasses would generally be lighter than trees, even during leaf-off conditions) and vegetative texture, and would introduce a linear feature inconsistent with the existing landscape.

As with other visible segments of the corridor, regrowth in the temporary right-of-way would reduce visual contrast over time. Figure 3-53 shows the right-of-way at this location, approximately 15-20 years after construction, with the incorporation of shallow-rooted perennial shrubs within the right-of-way, planted as visual mitigation to break up the linear nature of the corridor. As discussed for KOP 08a, the combination of these plantings and natural regrowth in the temporary right-of-way would significantly reduce contrast between the corridor and surrounding forest, in terms of color and texture, and would reduce the prominence of the corridor’s linear character.

### **3.5 SSF FULL VISUAL SIMULATIONS**

Atlantic conducted full visual simulations of seven KOPs associated with the SSF, as listed in Table 2-3, using the TrueView methodology described in Section 2.4.2. As indicated in Table 2-2, KOP SSF 03 provided no view of the ACP corridor at all, due to steep topography and tree cover. The subsections below present the simulations, which show the ACP corridor as it would be seen from each of these KOPs. This includes imagery of existing conditions, as well as separate simulations of views one growing season following construction, and approximately 5 years and 15 to 20 years following construction. High-resolution, large-format versions of these simulations are provided in Appendix B.

#### **3.5.1 KOP SSF 01: Greenbrier River Crossing**

Figures 3-54, 3-55, and 3-56 show the full simulation images for KOP SSF 01. From this KOP, located on the Greenbrier Trail adjacent to the Greenbrier River, the ACP corridor would be clearly visible at approximately MP 76.5, approximately 0.2 mile away, as it climbs southeastward from the Greenbrier River. Following construction, trail users, including cyclists and pedestrians, would cross directly over the right of way, although the cleared corridor on the opposite (west) side of the river would be the most distinct visible evidence of the corridor. As shown in the Figures, regrowth in the temporary right-of-way would reduce the scale of the right-of-way, and foliage on the trees adjacent to the river could partially screen views of the corridor at this KOP during leaf-on conditions; however, the right-of-way would remain a distinct visual feature, particularly for people using the Greenbrier trail along the west side of the river. The corridor would become narrower, but not meaningfully less distinct, over time, with regrowth of vegetation in the temporary right-of-way. This KOP, and the land visible from it, are adjacent to, but are not within the SSF.

#### **3.5.2 KOP SSF 02: Public Road 1/8**

Figure 3-57 shows the full simulation images for KOP SSF 02, immediately following construction, and shows the permanent right-of-way outlined in yellow, for viewer clarity. The segment of the ACP represented by the yellow overlay corresponds to approximately MP 77.5,

and would be 0.4 mile away through dense forest from the viewer at its closest point. The yellow overlay in Figure 3-57 shows the location of the right-of-way if it could be seen through the existing dense mature state forest lands. As shown in the Figures, this vegetation makes Project-related changes in color, line, texture, and other visual characteristics imperceptible from this KOP, even in leaf-off conditions (e.g., in late November, when the baseline imagery was captured).

### **3.5.3 KOP SSF 04: Loop Road**

Figure 3-58 shows the full simulation images for KOP SSF 04, immediately following construction, and shows the permanent right-of-way outlined in yellow, for viewer clarity. The segment of the ACP represented by the yellow overlay corresponds to approximately MP 77.5, and would be 0.4 mile away from the viewer at its closest point. As shown in Figure 3-58, the view of the right-of-way would be entirely blocked by existing dense mature forest vegetation, even in leaf-off conditions (e.g., in November, when the baseline imagery was captured).

### **3.5.4 KOP SSF 05: Allegheny Trail**

Figures 3-59, 3-60, and 3-61 show the full simulation images for KOP SSF 05. This KOP provides an axial view along the current Allegheny Trail and proposed ACP right-of-way east of MP 78.3, facing east. As shown in the Figures, the right-of-way would be a dominant visual feature in this location, and would remain so even after regrowth of vegetation in the temporary right-of-way.

As a mitigation measure to reduce the visual and recreational impacts associated with the pipeline corridor being collocated with the Allegheny trail in this location, Atlantic has proposed to and is working with the State of West Virginia to relocate the Allegheny Trail in this location, and to pay for vegetation clearing and other activities necessary to establish the new trail route. The State of West Virginia and Seneca State Forest have tentatively agreed to this relocation. As a result, the ACP would cross the relocated Allegheny Trail perpendicularly at approximately MP 78.1 (at the location of KOP 45—see Table 2-1), rather than being collocated with the trail for approximately 0.3 mile, between MPs 78.1 and 78.4. After trail relocation, KOP SSF 05 would no longer be on the Allegheny Trail. Views at the intersection of the Allegheny Trail and ACP—at MP 78.1—would be comparable to those shown in Figures 3-59 through 3-61.

### **3.5.5 KOP SSF 06: WV Route 28**

Figures 3-62, 3-63, and 3-64 show the full simulation images for KOP SSF 06. From this KOP, the ACP corridor would be visible at approximately MP 79.2, about 0.1 miles away, as it crosses the road. The corridor in this location would appear as a gap in the trees on the right (west) side of the road and another gap in the trees to the east of the agricultural field on the left (east) side of the road. Land to the west is within SSF, while the land to the east is privately owned. Travelers on WV 28 would have an axial view along the corridor, but only at the right-of-way crossing while traveling along the roadway; however, as shown in the Figures, the corridor would be minimally perceptible from viewpoints not at or immediately adjacent to the crossing. As shown in the Figures, regrowth in the temporary right-of-way would further reduce the perceived size of the right-of-way.

Figure 3-42: Full Simulation, KOP ANST 07, Regrowth Following Construction



ANST 07 - Sherando Valley B, Looking North - Existing View



ANST 07 - Sherando Valley B, Looking North - Proposed View: 75' Permanent ROW, 50' Temp. ROW

<b>Atlantic Coast Pipeline</b>	
ANST 07 Sherando Valley B	
Looking Elevation (ft) - Spot 01	222644.8
Looking Azimuth (ft) - Spot 01	307.04844.4
Location of Photopoint Position (MUT)	27215
Height of Camera Above Ground (ft)	5.4
Date of Photograph	11 November 2016 at 10:24:04
Distance of view	41
Horizontal Field of View	33°
Vertical Field of View	35°
<p>NOTES:</p> <p>Photopoint has been taken from a vantage point looking 15° east of the pipeline corridor. Areas of trees, fields, and other terrain are visible in the view.</p> <p>Photopoint was taken from a vantage point.</p> <p>Photopoint was taken from a vantage point.</p> <p>Photopoint was taken from a vantage point.</p>	
<p>Photo: Sherando Valley B, Looking North</p> <p>Project No.: 15-000-000-00</p> <p>Prepared by:</p>	
<b>Truescape</b>	
<a href="http://www.truescape.com">www.truescape.com</a>	
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Figure 3-43: Full Simulation, KOP ANST 07, Regrowth Following Construction, Permanent ROW Outlined



ANST 07 - Sherando Valley B, Looking North - Existing View



ANST 07 - Sherando Valley B, Looking North - Indicative Overlay: 75' Permanent ROW, 50' Temp. ROW

Scale bar and disclaimer text.

**Atlantic Coast Pipeline**

**ANST 07**  
Sherando Valley B

● Permanent ROW    ● Temp. ROW

Latitude (NAD83) (10/1/2016)	38.208116
Longitude (NAD83) (10/1/2016)	-80.288913
Elevation of Photogram Point (MGS)	1719.5
Height of Camera Above Ground (M)	5.4
Date of Photography	18 December 2016 at 01:28 PM
Orientation of View	0
Horizontal Field of View	10.4
Vertical Field of View	5.0

10/18/16  
 Images are for informational purposes only. They are not intended to be used for any other purpose. All rights reserved. © 2016 TrueScape, Inc. All rights reserved.

Photo: TrueScape / Creative Commons  
 Attribution-NonCommercial-ShareAlike 4.0 International  
 Photo ID: 12181200102

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Figure 3-44: Full Simulation, KOP ANST 07, Regrowth 5 Years after Construction



ANST 07 - Sherando Valley B, Looking North - Existing View



ANST 07 - Sherando Valley B, Looking North - Proposed View: 75' Permanent ROW, 50' Temp. ROW (5 Year Tree Growth)

<b>Atlantic Coast Pipeline</b>	
ANST 07 Sherando Valley B	
<input type="radio"/> Existing View <input checked="" type="radio"/> Proposed View	
Easting Position (NAD 83)    222095.8 Northing Position (NAD 83)    8070000.3 Elevation of Photogram Station (MSL)    2775.0 Height of Camera Above Ground (ft)    6.4 Date of Photography    13 November 2010 at 04:24 PM Orientation of View    N Horizontal Field of View    50° Vertical Field of View    50°	
NOTES: Simulated tree regrowth based on historical data using 3D and 2D air photos taken from USGS and other sources. Simulated tree regrowth based on historical data using 3D and 2D air photos taken from USGS and other sources. USGS (2010)	
Photo: Knowledge-Centered Design Autodesk® Civil 3D Phoenix, AZ, USA (2010)	
Provided by <b>Truescape</b> ®	
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DATE US January 2011	SHEET 25

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Figure 3-45: Full Simulation, KOP ANST 07, Regrowth 15-20 Years after Construction



ANST 07 - Sherando Valley B, Looking North - Existing View



ANST 07 - Sherando Valley B, Looking North - Proposed View: 75' Permanent ROW, 50' Temp. ROW (15-20 Year Tree Growth)

**Atlantic Coast Pipeline**

**ANST 07**  
Sherando Valley B

Home
Photo View



Latitude (NAD 83)	38.208418
Longitude (NAD 83)	-78.282818
Elevation of Photograph Location (m)	2715.5
Height of Camera Above Topography (m)	5.4
Date of Photography	10 December 2016 at 10:29 AM
Resolution of Image	4K
Horizontal Field of View	52.4°
View of Field of View	50°

NOTES  
Unapproved features have been removed along with 10 and 50 ft (3.05 and 15.24 meters) buffers from 100 ft (30.48 meters) easement boundaries.  
Elevations are above mean sea level.  
Photograph Location: UTM (22QDQ 07)

Photo View by TrueScape Using  
"TrueScape" Technology  
Patent No. US 8,911,000 B2  
© TrueScape

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DATE	05 January 2017	SCALE	26
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Figure 3-46: Full Simulation, KOP ANST 08a, Regrowth Following Construction



ANST 08a - Three Ridges North Overlook, Looking South-Southeast - Existing View



ANST 08a - Three Ridges North Overlook, Looking South-Southeast - Proposed View: 75' Permanent ROW, 50' Temp. ROW

<b>Atlantic Coast Pipeline</b>	
<b>ANST 08a</b> Three Ridges North Overlook	
<input type="checkbox"/> Existing View <input checked="" type="checkbox"/> Proposed View	
Existing Photos (1/16 - 1/16)	2/22/2014
Existing Photos (1/16 - 1/16)	1/16/2014
Distance of Photograph (Feet)	275.2
Height of Camera above Ground (Feet)	5.4
Date of Photograph	2/22/2014 at 10:22 PM
Resolution of Photo	102
Horizontal Field of View	50°
Vertical Field of View	50°
<p>NOTES:</p> <p>Truescape® simulation has been generated using 3D and 2D data. All data is subject to error. Accuracy is not guaranteed. For more information, please contact the project manager.</p>	
Photo, Simulation, Camera Data Project No.: US-PR-000-03 Provided by:	
<b>Truescape®</b>	
www.truescape.com	
DATE	05 January 2017
SCALE	31

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Figure 3-48: Full Simulation, KOP ANST 08a, Regrowth 15-20 Years after Construction



ANST 08a - Three Ridges North Overlook, Looking South-Southeast - Existing View



ANST 08a - Three Ridges North Overlook, Looking South-Southeast - Proposed View: 75' Permanent ROW, 50' Temp. ROW (15-20 Year Tree Growth)

<b>Atlantic Coast Pipeline</b>	
<b>ANST 08a</b> Three Ridges North Overlook	
<span style="color: green;">●</span> Proposed Location <span style="color: yellow;">●</span> Project Area	
Existing Problem (TM) - Tree ID: <b>EE03044.0</b> Marking/Problem (TM) - Date ID: <b>03/17/16.0</b> Diameter at Pith (Outside Bark) (DBH): <b>27.762</b> Height of Canopy Above Ground (H): <b>3.4</b> Date of Photography: <b>21 November 2016 at 4:53 PM</b> Orientation of View: <b>180</b> Associated Field of View: <b>52°</b> Camera Field of View: <b>55°</b>	
NOTES: Viewers are advised that views are simulated using 3D aerial 3D data. Responses shown are not from GIS data and are not intended for use. High quality aerial imagery was used. Photo: ANST 08a Overlook 03/17/16.0	
Photo Simulated by: <b>Created Using</b> Truescape 3D Project No.: <b>101-0013306-00</b> Provided by:	
<b>Truescape®</b>	
<a href="http://www.truescape.com">www.truescape.com</a>	
DATE: 05 January 2017	USER: 33

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Figure 3-49: Full Simulation, KOP ANST 08a, Regrowth 15-20 Years after Construction, with Indicative Restoration



ANST 08a - Three Ridges North Overlook, Looking South-Southeast - Existing View



ANST 08a - Three Ridges North Overlook, Looking South-Southeast - Proposed View: 75' Permanent ROW, 50' Temp. ROW (15-20 Year Tree Growth with indicative restoration)

**Atlantic Coast Pipeline**

ANST 08a  
Three Ridges North Overlook

■ Viewpoint Location    ■ View Area

Existing Project ID#	222004-0
Existing Project ID#	027074-0
Department of Transportation (DOT)	2016-2
Height of Camera Above Terrain (ft)	5.0
Date of Photograph	20 November 2016 at 08:33 PM
Resolution of View	500
Horizontal Field of View	120°
Vertical Field of View	90°

NOTES:  
 Viewport location has been established using a hand level. Degree of error is less than 1/2 degree and is within acceptable limits.  
 Heights are above mean sea level.  
 Horizontal and Vertical Error: 1/4" @ 1000'

Photo: TrueScape Camera System  
 Available for Renting  
 Phone: 303.434.1000

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Figure 3-50: Full Simulation, KOP ANST 08b, Regrowth Following Construction



ANST 08b - Three Ridges South Overlook, Looking East-Southeast - Existing View



ANST 08b - Three Ridges South Overlook, Looking East-Southeast - Proposed View: 75' Permanent ROW, 50' Temp. ROW

**Atlantic Coast Pipeline**

**ANST 08b**  
Three Ridges South Overlook

Environment
Proposed Area

Location (Project ID)	2227964-4
Nearest Project (ID)	1077606-1
Distance to Nearest Project (miles)	2706.0
Height of Camera Above Ground (feet)	5.9
Date of Photography	20 November 2016, 01:01:04
Distance to Edge of View	0.0
Horizontal Field of View	15.4
Vertical Field of View	9.0

NOTES:  
 Viewports to which this camera view is being used using 75-foot  
 All use - designations: 100-foot from 100-foot and the camera  
 proposed design  
 Height to use of view camera (feet)  
 Project Area (Project ID)  
 1077606-1

Photo Simulated Camera View  
 Simulation - See Settings  
 Project No.: US-0017006-01  
 Project No.

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Figure 3-51: Full Simulation, KOP ANST 08b, Regrowth 5 Years after Construction



ANST 08b - Three Ridges South Overlook, Looking East-Southeast - Existing View



ANST 08b - Three Ridges South Overlook, Looking East-Southeast - Proposed View: 75' Permanent ROW, 50' Temp. ROW (5 Year Tree Growth)

**Atlantic Coast Pipeline**

ANST 08b  
Three Ridges South Overlook

Three Ridges South Overlook  
 Three Ridges South Overlook

Existing Position (75' - 50' - 50')	222706.4
Existing Position (75' - 50' - 50')	107706.4
Existing Position (75' - 50' - 50')	2706.0
Height of 75' Permanent ROW (50' - 50')	5.0
Order of Priority	2706.0 (75' - 50' - 50')
Order of Priority	50'
Order of Priority	50'
Order of Priority	50'

NOTES

The proposed view is based on a 75-foot permanent right-of-way and a 50-foot temporary right-of-way with a 5-year tree regrowth. The view is based on a 75-foot permanent right-of-way and a 50-foot temporary right-of-way with a 5-year tree regrowth.

Photo Simulation - Concept Only  
Scale: 1:1000  
Project No.: 10-000-0000

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Figure 3-52: Full Simulation, KOP ANST 08b, Regrowth 15-20 Years after Construction



ANST 08b - Three Ridges South Overlook, Looking East-Southeast - Existing View



ANST 08b - Three Ridges South Overlook, Looking East-Southeast - Proposed View: 75' Permanent ROW, 50' Temp. ROW (15-20 Year Tree Growth)

**Atlantic Coast Pipeline**

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ANST 08b  
Three Ridges South Overlook

---

● Proposed Location    ● Project Area




---

Location (Project) (TM Zone 18)	222704.6
Location (Project) (TM Zone 18)	1077008.1
Elevation of Proposed Location (MGS)	3764.0
Height of Camera (meters) (mgs)	6.4
Line of Projection	azimuthal projection 60796
Coordinates of View	0.00
Horizontal Look of View	0.00
Vertical Look of View	0.00

---

**NOTES**

Viewports to display terrain are not aligned along 0° and 90° degrees (true) and not from 000° azimuth or 0° elevation. Use the 3D view to see terrain in context.

Project Area: ANST 08b  
Project Location: Three Ridges South Overlook  
View Date: 05/01/2017

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Photo Simulation Control Using  
 TrueScape<sup>®</sup> Software  
 Project No.: US-001-1500-03  
 Provided by:

TrueScape<sup>®</sup>

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Date: 05 January 2017	Sheet: 37
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Figure 3-53: Full Simulation, KOP ANST 08b, Regrowth 15-20 Years after Construction, with Indicative Restoration



ANST 08b - Three Ridges South Overlook, Looking East-Southeast - Existing View



ANST 08b - Three Ridges South Overlook, Looking East-Southeast - Proposed View: 75' Permanent ROW, 50' Temp. ROW (15-20 Year Tree Growth with indicative restoration)

**Atlantic Coast Pipeline**

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**ANST 08b**  
Three Ridges South Overlook

■ View of Interest    ■ Road Area

---

Looking From (Elev. / Azim. Dg)	22270000 / 100
Looking Through (Elev. / Azim. Dg)	22700000 / 100
Distance of Photo Point (Feet)	2000
Height of Camera Above Ground (Feet)	5.0
Date of Photography	2/16/2016 10:40:40 AM
Orientation of View	EWS
Horizontal Field of View	100
Vertical Field of View	50

---

NOTES:  
This view has been simulated using TruScape 3D as a digital camera view of the site and may contain some inaccuracies. Please refer to the project plan for more information. Project and dates are for reference only.

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Photo: TruScape - Coastal Utility  
Business: TruScape  
Project No.: 101000000000

Provided by:

**TruScape**

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Figure 3-54: Full Simulation, KOP SSF 01, Regrowth Following Construction



SSF 01 - Greenbrier River Trail, Looking South - Existing View



SSF 01 - Greenbrier River Trail, Looking South - Proposed View: 75' Permanent ROW, 50' Temp. ROW

**Atlantic Coast Pipeline**

SSF 01  
Greenbrier River Trail

● Proposed Corridor    ● Proposed ROW

Looking Position (°)    Date	000000.0
Looking Position (UTM)    Date	000000.0
Distance of Photograph (Miles)	0.0000
Height of Camera Above Ground (ft)	0.0
Date of Photograph	22 November 2016 at 09:07 AM
Orientation of Photo	0
Horizontal Field of View	52.0
Vertical Field of View	30.0

Note: This is a simulated view based on aerial imagery and a digital elevation model (DEM) derived from a 1:25,000 scale topographic map. The DEM is derived from a 1:25,000 scale topographic map. The DEM is derived from a 1:25,000 scale topographic map.

Photo Technology: TrueScape Imaging  
 Project No.: 10-100-000000  
 Produced by:

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Figure 3-55: Full Simulation, KOP SSF 01, Regrowth 5 Years after Construction



SSF 01 - Greenbrier River Trail, Looking South - Existing View



SSF 01 - Greenbrier River Trail, Looking South - Proposed View: 75' Permanent ROW, 50' Temp. ROW (5 Year Tree Growth)

**Atlantic Coast Pipeline**

SSF 01  
Greenbrier River Trail

● Permanent ROW    ● Temp. ROW

Existing Elevation (1/4" = 100' ft)	10000.0
Marking Elevation (1/4" = 100' ft)	10000.0
Elevation of Proposed Pipeline (1/4" = 100' ft)	10000.0
Height of Above Ground Pipeline (1/4" = 100' ft)	5.4
Clearance of Pipeline (1/4" = 100' ft)	33.6
Proposed Line Class	A
Maximum Elevation of Line	100
Vertical Profile of Line	00

**NOTES:**

1. All elevations are in feet above sea level (ASL).  
 2. All dimensions are in feet.  
 3. All dimensions are in feet.  
 4. All dimensions are in feet.  
 5. All dimensions are in feet.

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Figure 3-56: Full Simulation, KOP SSF 01, Regrowth 15-20 Years after Construction



SSF 01 - Greenbrier River Trail, Looking South - Existing View



SSF 01 - Greenbrier River Trail, Looking South - Proposed View: 75' Permanent ROW, 50' Temp. ROW (15-20 Year Tree Growth)

**Atlantic Coast Pipeline**

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SSF 01  
Greenbrier River Trail

---

● Home Location    ● Project Area




---

Jobing Project (1/19 - 2/20/17)	10/2016.7
Reference Point (1/19 - 2/20/17)	10/2016.7
Elevation of Proposed Project (ft)	2206.6
Height of Greenbrier River (ft)	5.6
Date of Photography	22 November 2016 at 10:17 AM
Horizontal Error	3'
Horizontal Error of View	10'
Vertical Error of View	10'

---

Notes:  
 This view is derived from the aerial imagery provided by the U.S. Department of the Interior, Bureau of Land Management, and is not intended to be used for any other purpose.  
 The accuracy of the data is not guaranteed.  
 UTM\_ZONE: 17

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Photo: TrueScape's Custom Imaging  
 Software™ Technology  
 Project No. 10-100-000-01

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Figure 3-57: Full Simulation, KOP SSF 02, Regrowth Following Construction, Permanent ROW Outlined



SSF 02 - Public Road 1/8, Looking North-Northwest - Existing View



SSF 02 - Public Road 1/8, Looking North-Northwest - Indicative Overlay: 75' Permanent ROW, 50' Temp. ROW

**Atlantic Coast Pipeline**

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**SSF 02**  
Public Road 1/8

---

■ Construction  
■ Road Way

---



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Existing Project ID: (N/A - Civil 01)	66000-000
Existing Project ID: (Civil 01)	66000-000
Location of Proposed Project (Mile)	07023
Height of Camera Above Ground (ft)	5.4
Date of Photo Date	22 November 2016 at 10:29 AM
Orientation of View	180°
Horizontal Field of View	10°
Vertical Field of View	30°

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NOTICE:  
 This image is a simulated view of the proposed project. It is not intended to be used as a substitute for a site visit or as a basis for any legal or regulatory action. The image is for informational purposes only.

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Figure 3-58: Full Simulation, KOP SSF 04, Regrowth Following Construction, Permanent ROW Outlined



SSF 04 - Public Loop Road 1/10, Looking North - Existing View



SSF 04 - Public Loop Road 1/10, Looking North - Indicative Overlay: 75' Permanent ROW, 50' Temp. ROW

**Atlantic Coast Pipeline**

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SSF 04  
Public Loop Road 1/10

---

● Permanent ROW    ● Temp. ROW

---

Location (Project LTM - 2017)	00000000
Location (Public LTM - 2017)	00000000
Location of Photo (Project LTM)	000000
Image File Name (Project LTM)	000000
Date of Photography	22 November 2016 at 04:10:00
Distance of View	M
Projected Path of View	N
View of Photo of View	N

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000000  
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 Equipment: "TruScape"  
 Project No: 100-00000000

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Figure 3-61: Full Simulation, KOP SSF 05, Regrowth 15-20 Years after Construction



SSF 05 - Existing Allegheny Trail East, Looking East - Existing View



SSF 05 - Existing Allegheny Trail East, Looking East - Proposed View: 75' Permanent ROW, 50' Temp. ROW (15-20 Year Tree Growth)

**Atlantic Coast Pipeline**

**SSF 05**  
Existing Allegheny Trail East

📍 Location
📅 Date

Existing Features (75' ROW)	8440000.0
Existing Features (50' ROW)	10000000.0
Location of Proposed Features (ROW)	2015.0
Height of Camera above Ground (ft)	5.4
Date of Photo Capture	22 November 2016 at 11:25 PM
Orientation of View	0
Horizontal Field of View	150
Vertical Field of View	50

This report is a simulation of the visual impact of the proposed project. It is not a guarantee of the actual visual impact. The simulation is based on the best available information and is subject to change. The simulation is not a substitute for a professional site visit.

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Figure 3-63: Full Simulation, KOP SSF 06, Regrowth 5 Years after Construction



SSF 06 - State Route 30, Looking South-Southeast - Existing View



SSF 06 - State Route 30, Looking South-Southeast - Proposed View: 75' Permanent ROW, 50' Temp. ROW (5 Year Tree Growth)

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<b>Atlantic Coast Pipeline</b>	
<b>SSF 06</b> State Route 30	
● Existing Location	● Proposed Area
Elevation (Feet) @ 75' ROW: 175 Elevation (Feet) @ 50' ROW: 160 Location of Proposed Pipeline (Miles): 234.4 Length of Current Access Road: 1.4 Date of Photography: 22 November 2016 at 10:16 AM Date of Report: 01/05/2017 Project No.: 175-010-1-000-010 Project Name: 17	<b>01/05/17</b> This report is for informational purposes only. It is not intended to be used for any other purpose. It is the property of Truescape, Inc. and is to be used only for the project and location indicated on the cover.
Photo Montage Created Using Esri ArcGIS Pro Project No.: 175-010-1-000-010 Provided by <b>Truescape</b> www.truescape.com	
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Figure 3-64: Full Simulation, KOP SSF 06, Regrowth 15-20 Years after Construction



SSF 06 - State Route 30, Looking South-Southeast - Existing View



SSF 06 - State Route 30, Looking South-Southeast - Proposed View: 75' Permanent ROW, 50' Temp. ROW (15-20 Year Tree Growth)

**Atlantic Coast Pipeline**

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**SSF 06**  
State Route 30

● Viewpoint Location   
 ● Project Area

---

Existing Features (15' - 20' Tree)	REMOVED
Existing Features (15' - 20' Tree)	REMOVED
Number of Temporary Construction	0
Height of Camera Above Ground (ft)	5.4
Date of Observation	28 November 2016 at 12:14 PM
Orientation of View	SSE
Horizontal Field of View	154°
Vertical Field of View	50°

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NOTES:  
Thispanorama was created using TrueScape 3D and 360° images were used to create the 3D environment. Some features may not be visible in this view.

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Photo Technology Credits: Thanks to TrueScape 3D, TrueScape 3D, and TrueScape 3D for providing the software used to create this view.

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Proximity:

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### **3.5.6 KOP SSF 07: Michael Mountain**

Figure 3-65 shows the full simulation images for KOP SSF 07, immediately following construction, and shows the permanent right-of-way outlined in yellow, for viewer clarity. KOP SSF 07 is located at the highest point along Crestline Trail, which traverses the ridge of Michael Mountain through heavily forested areas. The entire trail is within the forest and, although the trail runs along the ridgeline with multiple outcrops, there are no clear views to the east in the direction of the proposed pipeline right-of-way. The segment of the ACP represented by the yellow overlay corresponds to approximately MP 80.3 to 80.7, and would be 0.3 mile away from the viewer at its closest point. The yellow overlay in Figure 3-65 shows the location of the right-of-way if it could be seen through the existing dense vegetation. As shown in the Figures, this vegetation makes Project-related changes in color, line, texture, and other visual characteristics imperceptible from this KOP, even in leaf-off conditions (e.g., in late November, when the baseline imagery was captured).

### **3.5.7 KOP SSF 08: WV Route 92**

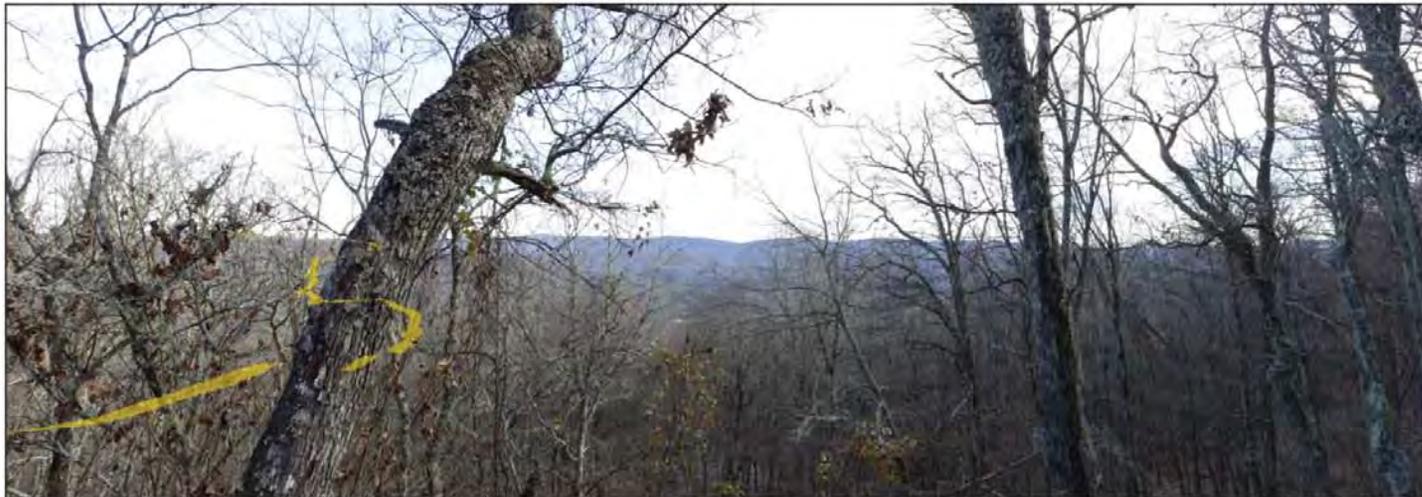
Figures 3-66, 3-67, and 3-68 show the full simulation images for KOP SSF 08. From this KOP, the ACP corridor would be visible at approximately MP 81.1, approximately 0.1 mile away, as it crosses WV 92. The corridor in this location would appear as a gap in the trees on the right (west) side of the road and another gap in the trees to the east of the agricultural field on the left (east) side of the road. Travelers on WV 92 would have a brief axial view along the corridor at the right-of-way crossing; however, as shown in the Figures, the corridor would be minimally perceptible from viewpoints not at or immediately adjacent to the crossing. As shown in the Figures, regrowth in the temporary right-of-way would further reduce the perceived size of the right-of-way. This KOP is approximately 0.6 mile south of the nearest SSF boundary, and is approximately 0.9 mile southeast of the point at which the ACP would cross the SSF boundary.

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Figure 3-65: Full Simulation, KOP SSF 07, Regrowth Following Construction, Permanent ROW Outlined



SSF 07 - Michael Ridge, Looking Southeast - Existing View



SSF 07 - Michael Ridge, Looking Southeast - Indicative Overlay: 75' Permanent ROW, 50' Temp. ROW

**Atlantic Coast Pipeline**

SSF 07  
Michael Ridge

► Permanent ROW
◀ Temp. ROW



Planning District (TPM #)	000000.0
Planning District (TPM #) - Zone 10	000000.0
Number of Proposed Features (KOP)	0000.0
Length of Proposed Feature (ft)	0.0
Number of Features	23 November 2016 at 10:20:04
Number of Users	10
Number of Layers of Users	10
Number of Features of Users	10

NOTES  
 Viewport for this tool is from [www.esri.com/arcgis/info/](http://www.esri.com/arcgis/info/) and  
 it can be used to view and edit data. For more information, see the  
[www.esri.com/arcgis/info/](http://www.esri.com/arcgis/info/) page.  
 For more information, see the [www.esri.com/arcgis/info/](http://www.esri.com/arcgis/info/) page.  
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Project Information  
 Location: SSF 07  
 Project ID: 1010100000

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Figure 3-67: Full Simulation, KOP SSF 08, Regrowth 5 Years after Construction



SSF 08 - State Route 96, Looking Northwest - Existing View



SSF 08 - State Route 96, Looking Northwest - Proposed View: 75' Permanent ROW, 50' Temp. ROW (5 Year Tree Growth)

<b>Atlantic Coast Pipeline</b>	
SSF 08 State Route 96	
<span style="color: green;">●</span> Viewpoint Location <span style="color: yellow;">●</span> Project Area	
Location/Viewpoint: 1700 - State 96 Viewing Direction: 170° - Northwest Acquisition of Photographic Product (date): 2016-11-22 Height of Camera Above Ground (ft): 15.4 Date of Photography: 22 November 2016 at 10:52 AM Resolution of image: 4000 Photo-cast Scale of Glass: 50% View at 1 Mile of View: 100	<b>SSF 08</b> November 22
NOTES: Viewpoint location has been verified against USGS 1:250,000 Digital Elevation Model (DEM) and other sources available at the time. Height of camera above ground and date Photo-cast Scale of Glass (1700, 1700, 11)	
Photo-cast by Truescape Living 1700 - State 96, North Carolina Phone No.: (757) 830-6300 (Toll-Free)	
Funded by: <b>Truescape</b> www.truescape.com	
(1700)	(1700) 11
05 January 2017	54

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## **4.0 DISCUSSION OF POTENTIAL IMPACTS**

This section discusses the potential visual impacts of the ACP on the Monongahela and George Washington National Forests, the NPS-managed Blue Ridge Parkway and Appalachian National Scenic Trail, and the Seneca State Forest. Visual assessments are based on the visual analyses presented in Section 3.0.

### **4.1 GEORGE WASHINGTON NATIONAL FOREST AND BLUE RIDGE PARKWAY**

#### **4.1.1 USFS Scenic Integrity Objectives**

Table 4-1 lists the KOPs in the GWNF for which visual analyses were conducted (see Section 3.0), as well as the SIO present and generally within the viewshed (the area visible to an observer at the KOP). All of the KOPs listed in Table 4-1 have a Concern Level of 1, meaning users are considered to have a high regard for scenery and they value the natural appearing landscape character. Figure 1-2 shows SIOs in the study area within the GWNF. Table 4-2 shows the length of ACP corridor centerline within the GWNF by SIO. Approximately 13.9 miles of the ACP corridor's 14.2 mile crossing of GWNF-owned land would be through areas with medium SIO. The remaining 0.1 mile would be through areas with High SIO (including less than 0.1 mile where there would be no aboveground evidence of the corridor, due to the HDD crossing of the BRP and ANST).

#### **4.1.2 Visual Impacts of the ACP in the GWNF and from the BRP**

This section discusses potential visual impacts in the GWNF. Section 4.1.3 discusses the measures that Atlantic will implement to mitigate these measures.

##### **4.1.2.1 Discussion**

The 21 KOPs for the GWNF presented in Table 2-1 were intended to be representative of a wide variety of publicly accessible views from USFS-owned land within the GWNF. As described in Section 2.3, only 7 of these 21 KOPs provided potential views of the ACP corridor. Views of the corridor may be available from other locations within GWNF boundaries (although not on USFS-owned land), such as public roads; however, topography and the screening effect of existing forests would greatly limit the number of such views (see Appendix A).

As shown in Figures 3-3 through 3-18, middleground and background views of the ACP corridor would be most likely to occur from the two BRP overlooks and gaps in vegetation along the Torry Ridge Trail. Potential views from the ANST as it crosses the summit of Bee Mountain (KOP 40) would be through existing vegetation. As demonstrated by Figures 3-15 through 3-18, the ACP corridor would be imperceptible from this location. No potential views of the ACP corridor would be available from this location during leaf-on conditions. No views would be available from the summit of Three Ridges Mountain (KOP 41) due to dense mature tree vegetation. Section 4.3 discusses the visual impacts from other locations along the ANST.

Post-construction the ACP corridor would be noticeable to casual observers at most of the modeled KOPs. The degree of contrast introduced by the project will vary by KOP, depending on the distance viewed, the extensiveness of the view and the scale of the right-of-way within that view, the angle of view, the aspect of view, and the terrain upon which the pipeline is located. For some KOPs that view a small area at a relatively close distance to the project area, the pipeline corridor would begin to dominate the characteristic landscape. For KOPs that have a relatively expansive view at a greater distance and with other alterations visible on the landscape, the project is not likely to dominate the characteristic landscape. .

The ACP corridor would be visible only from areas with open views of the potential right-of-way where it crosses forested areas. From the Torry Ridge Trail and BRP overlooks, these changes would take the form of a thin linear strip of open land in an otherwise forested area. Depending on the time of year a viewer would see this as a light green, tan, or brown stripe amid darker green (leaf-on) or gray-brown (leaf-off) forest, or a white stripe if snow cover were present.

TABLE 4-1		
<b>Summary of Scenic Integrity Objectives for KOPs</b>		
ID	Location	Scenic Integrity Objective in Viewshed
34	Torry Ridge Trail 1 (revised location, per Table 2-1)	High
35	Torry Ridge Trail 2 (revised location, per Table 2-1)	High
38	Blue Ridge Parkway: Ravens Roost Overlook	Moderate
39	Blue Ridge Parkway: Three Ridges Overlook	NA <sup>1</sup>
40	ANST: Bee Mountain, near Three Ridges Wilderness	Very High
64	Shenandoah Mountain Trail near MP 98.7	Moderate
65	Devil’s Knob (Wintergreen Resort)—Contingency only	NA <sup>1</sup>

<sup>1</sup> Lands viewed from this KOP are not part of the GWNF, and are therefore not assigned a SIO.

TABLE 4-2							
<b>Scenic Integrity Objectives crossed by ACP in GWNF</b>							
Begin Milepost	End Milepost	Miles Crossed	Scenic Integrity Objective	Begin Milepost	End Milepost	Miles Crossed	Scenic Integrity Objective
83.9	86.7	3.9	Moderate	115.8	116.2	0.4	Moderate
86.8	86.9	0.1	Moderate	116.4	116.5	0.1	Moderate
93.7	94.3	0.7	Moderate	116.8	120.6	3.8	Moderate
96.1	96.3	0.4	Moderate	121.1	122.4	1.3	Moderate
96.5	96.6	0.2	Moderate	122.4	122.7	0.3	Moderate
96.9	97.5	0.8	Moderate	122.7	123.2	0.5	Moderate
99.3	99.7	0.5	Moderate	154.0	155.1	1.1	Moderate
105.9	106.0	0.1	Moderate	158.0	158.1	0.1	High <sup>1</sup>

<sup>1</sup> The ACP corridor would cross this portion of the GWNF underground, as part of the HDD crossing of the Blue Ridge Parkway and ANST; as a result, there would be no aboveground evidence of the corridor in this location.

From the BRP Ravens Roost overlook (KOP 38), while the corridor would be visible within the forested area at the base of Torry Ridge (the ridge in the middle of Figure 3-6) and in areas further to the northwest, it would be one of several visible human-made features within the overall view, including roads and buildings. As such, the ACP corridor at KOP 38 would not be inconsistent with NPS management objectives for visual resources.

As viewed from KOP 38, a small portion of the pipeline corridor in the valley is on the GWNF. The pipeline right-of-way mimics the road corridor at the base of Torry Ridge, but will be wider. It will be more highly visible than the road as it sweeps to the north through a forested area where there are no other openings in the immediate vicinity. The length of the pipeline that would be visible is substantial. The contrast in color and line will attract the viewer's eye. The northwest portion of the pipeline closest to the KOP is less visible than the northern portion that is further away. This is due to the height and density of the trees in front of the right-of-way which hinder visibility from KP 38. As the right-of-way continues, turning northwest, the view from the KOP becomes axial, thereby increasing visibility of its width.

The corridor would be visible from the BRP Three Ridges overlook (KOP 39) approximately 0.75 to 1.0 mile from the viewer, in the middleground, as defined by the USFS (although the corridor in this location is not within the GWNF). With no additional vegetative plantings, the ACP corridor would be clearly visible from this location, to a greater degree than from the Ravens Roost overlook (KOP 38) or other KOPs. The corridor here would be a prominent landscape feature. With no mitigation, the ACP corridor at KOP 39 would likely be inconsistent with NPS management objectives for visual resources. Atlantic would plant additional shrubs along the right-of-way, as shown in Figure 3-14. These plantings would help to reduce the contrast between the right-of-way and surrounding areas, and would reduce the inconsistency with NPS management objectives.

Hikers along the southern end of the Shenandoah Mountain Trail would see the ACP corridor crossing in the immediate foreground and foreground, where the ACP crosses the trail. In this location, alteration of the landscape would include permanent replacement of existing forest with open land (typically grasses and low shrubs). This change in vegetation type would dominate the view, and would thus be inconsistent with SMS objectives in this location. As a result of ongoing consultations (see Section 2.1), GWNF concurred with Atlantic's conclusion (based on field surveys and review of aerial photography) that the viewing area for these changes would be relatively small—limited to the area immediately near each intersection of the corridor with an existing road or trail. Outside of this immediate viewing location, trees and terrain (as visible on publicly available aerial photography and topographic maps) would likely minimize or eliminate the ability to see the remainder of the ACP corridor, particularly during leaf-on conditions.

The Shenandoah Mountain Trail crossing is the only known case in the GWNF where the ACP corridor would be visible from USFS-owned land in the immediate foreground or foreground. To the degree that other similar crossings exist, the views and visual effects at such locations would be similar to those described for the Shenandoah Mountain Trail crossing. Middleground and background views and visual effects from other USFS-owned land would be similar in nature to those described above. The ACP pipeline route would have no aboveground facilities within the GWNF except for small, widely-spaced mainline valves.

#### 4.1.2.2 Summary

Based on the discussion above, the relationship between the ACP and SIOs in the GWNF would be as follows:

- Views from Torry Ridge (KOPs 34 and 35) would be somewhat inconsistent with the High SIO assigned to the area of the Blue Ridge Mountains visible from the Torry Ridge KOPs. The changes in form, line, color, texture, and pattern associated with the ACP right-of-way would be somewhat evident (although by no means dominant) on the landscape.
- Views of the ACP corridor from the Ravens Roost overlook (KOP 38) would not be inconsistent with NPS management objectives for visual resources, since the corridor would be one amongst other human-made features on the landscape.
- Views of the ACP corridor from the Three Ridges overlook (KOP 39) would likely be inconsistent with NPS management objectives, given the proximity to the viewer, the axial nature of the view, and the corridor's contrast with the surrounding forest. To mitigate this effect, Atlantic has committed to planting shrubs and other low vegetation in the right-of-way, to reduce visual contrast (see Figure 3-13).
- Views of the ACP corridor from Bee Mountain on the ANST (KOP 40) would be imperceptible.
- Views from KOP 64, the Shenandoah Mountain Trail near MP 98.7, would be inconsistent with the Moderate SIO designation, because views of the right-of-way where it intersects the trail would not be "visually subordinate to" the surrounding landscape character. The extent of such inconsistency would be limited to within a few hundred feet of the intersection location, due to the presence of dense forest.

The majority of GWNF-owned land crossed by the ACP has a Moderate SIO, a designation where human activities may be visible but where natural landscapes should be dominant. The ACP would be consistent with this designation: the corridor would be visible, but would not dominate the view, except in the area immediately surrounding any ACP crossings of public roads or trails.

#### 4.1.3 Mitigation of Visual Impacts in the GWNF

In addition to the site-specific plantings described above for Piney Mountain (visible from KOP 39), Atlantic is considering specific clearing and replanting actions within the GWNF. These mitigation measures are described below.

#### **4.1.3.1 Feathering Vegetation Clearing on the Right-of-Way**

At the request of the USFS, on Forest Service lands Atlantic is considering “feathering” the edges of the right-of-way during construction. Feathering the edges of the right-of-way refers to the selective clearing of trees and vegetation at specific locations along the edges of the right-of-way such that existing vegetation, including fully grown trees, are left up to 10 feet within the boundaries of the construction right-of-way to create a visually uneven edge along both sides of the right-of-way. When viewed axially or along the length of the right-of-way at these locations, there are no parallel, straight edges and the cleared right-of-way appears more natural. Atlantic is considering applying this process within long straight line tangents of pipeline corridor where immediate foreground and foreground views (i.e., from trail or road crossings) and middleground and background views (i.e., from highways) of the pipeline corridor would be visible from publicly accessible locations.

If implemented, vegetation that is left standing within the edges of the construction right-of-way would extend 5 to 10 feet into the right-of-way, and would occur periodically along both edges of the right-of-way in the selected areas. These areas would be identified and mapped by Atlantic on drawings, and the trees to be left standing would be flagged in the field and reviewed with the Forest Service prior to construction.

#### **4.1.3.2 Replanting the Right-of-Way**

Atlantic will replant the entire construction right-of-way with seed mixes that it has selected in consultation with the Forest. These seed mixes consists of a selection of warm season native grasses, some select cool season grasses in steep slope areas, and various native flowering forbs/pollinator species. Where it crosses U.S. Forest Service land, the temporary construction right-of-way will have a nominal width of 125 feet, including the 50-foot-wide permanent right-of-way that is centered on the installed pipeline.

To potentially reduce the visual contrast of the cleared construction right-of-way on Forest Service lands, Atlantic is also considering active replanting of the outer most 20 feet of the working side of the construction right-of-way and the remaining outer 15 feet of the spoil side of the construction right-of-way, including all additional temporary extra workspace areas, with a combination of indigenous tree and shrub seedlings. If replanting is conducted, tree and shrub species, seed stocks, and planting densities used within these areas would be selected based on availability within the project area, as well as consultations with Forest Service staff. Atlantic would monitor the planted areas for successful growth of the seedlings, but would not plan to actively maintain or manage the planted areas, which would allow natural revegetation from surrounding forest species and sprouting of stumps to occur and supplement the growing seedlings.

Additionally, in the area between the edge of the 50-foot-wide permanent right-of-way and the replanted area described above (about 40 feet on the working side of the construction right-of-way), Atlantic will allow the natural regrowth and succession of trees and shrubs following the initial planting of grasses and forbs after construction. During operation of the ACP pipeline, only the 50-foot-wide permanent right-of-way will be periodically mowed and maintained in an herbaceous state.

## 4.2 MONONGAHELA NATIONAL FOREST

This section discusses potential visual impacts in the GWNF. Section 4.2.3 discusses the measures that Atlantic is considering to mitigate these measures.

### 4.2.1 USFS Scenic Classes

The ten KOPs for the MNF in Table 2-1 were intended to be representative of a wide variety of publicly accessible views within the forest; however, field surveys (see Section 2.2) determined that none of these KOPs offered potential views of the ACP corridor, due to existing vegetation. Figure 1-4 shows Scenic Classes in the study area within the MNF,<sup>5</sup> while Table 4-3 shows the length of the ACP corridor centerline within USFS-owned portions of the MNF by Scenic Class. Of the approximately 6.9 miles of USFS-owned land crossed by the ACP in the MNF, approximately 5.8 miles would be through areas with high scenic value, another 1.1 miles would be through areas with medium-high scenic value, and less than 0.1 mile would be through an area with medium scenic value.

Begin Milepost	End Milepost	Miles Crossed	Scenic Class <sup>1</sup>
71.2	71.5	0.6	2
73.1	73.6	0.9	2
80.4	80.6	0.3	2
80.6	80.6	0.1	3
80.7	80.9	0.3	2
81.2	81.3	0.1	2
81.3	81.4	0.1	3
81.4	81.4	0.1	2
81.4	81.8	0.6	3
81.8	83.2	2.6	2
83.2	83.3	0.2	3
83.3	83.6	0.5	2
83.6	83.7	0.1	3
83.7	83.9	0.4	2
83.9	83.9	<0.1	4

<sup>1</sup> Scenic classes correspond to the following general definitions:  
<sup>2</sup> "high" scenic value.  
<sup>3</sup> "medium-high" scenic value.  
<sup>4</sup> "medium" scenic value.

### 4.2.2 Visual Impacts of the ACP in the MNF

Views of the ACP corridor may be available from USFS-owned land within the MNF, aside from the KOPs identified in Table 2-1. Middleground and background views of the ACP

<sup>5</sup> Mapping provided by USFS includes Scenic Class designations for the entire MNF, including USFS-owned land and private land not owned or managed by USFS.

corridor would be particularly sporadic in the MNF due to screening from existing forest. To the degree that such views exist, visual effects in such locations would be similar in nature to those described for the KOPs in the GWNF.

Views of the ACP corridor within the MNF would be most likely to occur where the corridor crosses or is collocated with a public road or trail in forested areas (although few such instances appear to exist on USFS-owned land). In such cases, alteration of the landscape would occur in the immediate foreground and foreground, where existing forest would be permanently replaced with open land (typically grasses and low shrubs), which would become narrower as regrowth occurs along the temporary right-of-way. The change in vegetation type would dominate the view, particularly where viewers are able to look down the axis of the ACP corridor. The viewing area for these changes would be relatively small—limited to the area immediately near each intersection of the corridor with an existing road or trail. Outside of this immediate viewing location, trees and terrain would likely minimize or eliminate the ability to see the ACP corridor, particularly during leaf-on conditions. The ACP pipeline route would have no aboveground facilities within the MNF except for small, widely-spaced mainline valves.

As discussed in Section 4.2.1, a portion of the ACP corridor would cross areas of the MNF with high Scenic Class designations. For purposes of analysis, this VIA assumes that a high or very high Scenic Class designation carries the same management intent as a High SIO designation: changes in landscape character associated with the ACP or other human activities are intended to be imperceptible.

In locations where the ACP crosses areas with high Scenic Class designations on MNF lands, the ACP would be inconsistent with MNF scenery management goals. In such locations, the removal of forest along the corridor would be clearly visible for observers at that location. That finding notwithstanding, public opportunities to view the ACP corridor from or on USFS-owned land within the MNF are limited. No such locations were identified through this process.

#### **4.2.3 Mitigation of Visual Impacts in the MNF**

In addition to the site-specific plantings described above for Piney Mountain (visible from KOP 39), Atlantic is considering specific clearing and replanting actions to mitigate the Project's visual impacts in the MNF. These potential mitigation measures are the same as those described for the GWNF in Section 4.1.3.

### **4.3 VISUAL IMPACTS OF THE ACP CONTINGENCY PLAN**

Under the HDD Contingency Plan, the ACP corridor would cross the BRP and ANST via a shorter, shallower tunnel. The right-of-way on the ground surface above this tunnel, including the crossing of the BRP and ANST, would not be disturbed or affected. Views of the corridor from other segments of the BRP and ANST would be similar to those under the Proposed Action, except that the extent of the cleared corridor on either side of the Blue Ridge would appear to be slightly longer.

As shown in the simulations in Figures 3-19 through 3-23, the contingency crossing area corridor would be visible from KOPs to the west of the crossing (i.e., Torry Ridge), but not from

KOPs to the east of the crossing. Comparing Proposed Action and contingency plan simulations from KOP 34 (Torrey Ridge) and KOP 40 (Bee Mountain) shows that the incremental difference in disturbed area during operations between Proposed Action and contingency plan is minimal. As with the proposed action, views of the ACP contingency corridor from KOP 40 would be minimal and only available during leaf-off conditions. Viewers on the ANST and BRP would not experience any changes in scenery conditions at the ACP crossing under either scenario. As a result, the visual impacts of the contingency plan would be essentially the same as the visual impacts of the proposed action.

#### **4.4 APPALACHIAN NATIONAL SCENIC TRAIL AND SENECA STATE FOREST**

##### **4.4.1 National Park Service Visual Impact Considerations**

As described in Section 1.3, there are no NPS management designations or visual impact guidance specific to the ANST. The ACP would drill under a segment of the ANST (approximately at MP 158.1) on GWNF land with a High SIO designation. (This crossing is adjacent to a segment of the BRP that is within the Scenic Character management zone, a designation whose objectives are generally consistent with High to Medium SIO). KOPs ANST 05, 06, and 07 are also on GWNF land with a High SIO designation, while KOPs ANST 02, 03, and 04 are near GWNF lands with High SIO designations. KOPs ANST 08a and 08b are part of the BRP; the management objectives for these locations are the same as for KOP 39 (the BRP's Scenic Character management designation), as discussed in Section 4.1.2.

Figure 1-4 shows Scenic Classes in the study area within the MNF, including for the SSF, which is within the MNF Proclamation Boundary, but is not owned by the USFS. Table 4-4 shows the length of the ACP corridor centerline within the SSF by Scenic Class. Of the approximately 3.3 miles of the SSF crossed by ACP, approximately 2.3 miles would be through areas with very high or high scenic value, another 0.4 mile would be through areas with medium or medium-high scenic value, and approximately 0.6 mile would be through areas with medium-low or very low scenic value.

Another 1.4 mile of the centerline would cross areas near, but not within SSF, which are visible from the KOPs listed in Section 3.5. These segments would cross approximately 3.4 miles of land with high or very high scenic value, 0.5 mile of land with medium-high or medium scenic value, 0.1 mile of land with medium-low scenic value, and 0.7 mile of very low scenic value.

##### **4.4.2 Visual Impacts of the ACP on the ANST**

###### **4.4.2.1 Discussion of Impacts**

The nine KOPs (including KOP 8a and 8b) for the ANST were identified by the ATC and NPS, and are intended to be representative of a wide variety of publicly accessible views from the ANST. As listed in Table 2-2, there is no view of the ACP from KOP ANST 01 (Afton Mountain), due to intervening topography and direction of view.

As shown in Figures 3-24 through 3-32, the corridor would be barely perceptible from KOPs ANST 02, 03, and 04, and would generally be visible from middleground distances (up to four miles away, as defined by the USFS) As shown in Figures 3-24 through 3-32, due to existing vegetation patterns, the corridor’s contrast in color and line would be difficult to distinguish from, would be generally consistent with the surrounding landscape—which includes roads, buildings, and cleared agricultural lands—and would not meaningfully affect the character of the existing landscape. Some views of the corridor may only be present during leaf-off conditions. As such, the corridor would not be inconsistent with nearby High SIO designations.

TABLE 4-4			
Summary of Scenic Classes crossed by ACP in SSF <sup>1</sup>			
Begin Milepost	End Milepost	Miles Crossed	Scenic Class <sup>2</sup>
76.6	76.9	0.3 <sup>3</sup>	1 and 2
76.9	77.0	0.1	1 and 2
77.0	77.1	0.1	3
77.1	77.2	0.1	5
77.2	77.3	0.1	7
77.3	77.4	0.1	3 and 4
77.4	78.7	1.3	2
78.7	78.8	0.1	3
78.8	79.2	0.4	7
79.2	79.4	0.2 <sup>3</sup>	7
79.4	79.5	0.1	3
79.5	80.4	0.9	2
80.4	80.6	0.2 <sup>3</sup>	2
80.6	80.7	0.1 <sup>3</sup>	3
80.7	81.3	0.6 <sup>3</sup>	2

<sup>1</sup> MNF has identified Scenic Classes for all areas within its Proclamation Boundary. While the SSF is within the MNF Proclamation Boundary, it is not owned by USFS.

<sup>2</sup> Scenic classes correspond to the following general definitions:

- 1 “very high” scenic value
- 2 “high” scenic value.
- 3 “medium-high” scenic value.
- 4 “medium” scenic value
- 5 “medium-low” scenic value
- 7 “very low” scenic value

<sup>3</sup> Segment is not within SSF, but may be visible from one or more KOP.

The ACP corridor would be clearly visible from KOPs ANST 05 (Cedar Cliffs) and ANST 06 (Little Ravens Roost). As shown in Figures 3-33 through 3-38, views from these locations would be similar to but closer to the corridor than the views described for KOP 38 (BRP Ravens Roost Overlook—see Section 4.1.2 and Figure 3-6). The corridor would be visible within the forested area at the base of Torry Ridge (the ridge in the middle of the Figures), approximately 0.6 mile from the viewer at the closest location, within the middleground, as defined by the USFS.

KOPs ANST 05 and 06 are on land with High SIO designation, although the corridor is not on USFS land. In such instances, the KOPs are considered to be located on Concern Level 1

National Scenic Trail. From these locations, the corridor would be clearly visible, and would be a prominent new feature within the view, although trees along the southeast side of the corridor, closer to KOP would obscure views of this portion of the corridor. Although the corridor is as close as 0.65 mile from KOP ANST 06, this closest segment would be viewed from a perpendicular angle. The closest axial view would be near MP 154, approximately 1.0 mile from KOP ANST 05 and 1.3 miles from KOP ANST 06. On its own, the corridor would be inconsistent with the High SIO designation's intent of preserving apparently "intact" landscapes; however, the landscapes in question are not on USFS-owned land, and are already affected by human activity, including linear features such as roads, as well as buildings and cleared agricultural areas. Within this context, the ACP corridor would not be inconsistent with USFS management intent, particularly as vegetation and trees regrow over time in the temporary right-of-way, reducing the scale of the corridor.

As shown in Figures 3-39 through 3-41, the ACP corridor at KOP ANST 07 would be only slightly visible through scattered vegetation in leaf-off-conditions, but likely would not be visible during leaf-on conditions. To the degree that it is visible (approximately 0.5 mile from the viewer, within the middleground, as defined by the USFS), the corridor would be similar in appearance to, but less prominent than the cleared corridor created by Mount Torrey Road, just above the corridor in the Figures. As a result of this limited contrast, the corridor in this location would not be inconsistent with the High SIO designation.

The ACP corridor would be clearly visible from KOPs ANST 8a and 8b (Figures 3-42 through 3-49), at the BRP Three Ridges Overlook, where the ANST crosses the BRP. Views here would be similar to those described for KOP 39 (see Section 4.1.2): the corridor would be visible approximately 0.75 to 1.0 mile from the viewer, in the middleground, as defined by the USFS. Viewers at the Three Ridges Overlook would have an axial view along the corridor, approximately at eye level, at the crest of a ridge. As a result, with no additional vegetative plantings, the ACP corridor would be clearly visible from this location, and would have a more distinct contrast with the surrounding landscape than is the case at other KOPs on the ANST. For example, KOP ANST 05 also offers a clear axial view of the corridor approximately 1.0 mile away; however, the corridor at that location would be within a larger and more complex vegetated and forested landscape, and would not be visible on the horizon.

With no mitigation, the ACP corridor at KOP 39 would likely be inconsistent with NPS management objectives for visual resources. Atlantic would plant additional shrubs along the right-of-way, as shown in Figure, 3-14. These plantings would help to reduce the contrast between the right-of-way and surrounding areas, and would reduce—but not eliminate—the inconsistency with NPS management objectives.

#### **4.4.2.2 Mitigation of Impacts**

The site-specific plantings described in Section 4.1.3 for Piney Mountain (visible from KOP 39), will mitigate impacts on views from KOP ANST 08a and 08b. In addition, Atlantic will actively replant the entire construction right-of-way visible from KOPs 38 (Ravens Roost), ANST 05 (Cedar Cliffs) and ANST 06 (Little Ravens Roost) with a combination of indigenous tree and shrub seedlings, leaving a 50-foot-wide permanent right-of-way, centered on the installed pipeline (compared to a nominal 75-foot-wide permanent right-of-way along the

remainder of the corridor). Figures 4-1 and 4-2 show the full simulation images for KOP 38 with a 50-foot-wide permanent right-of-way, instead of the 75-foot-wide right of way shown in the simulation images in Section 3. This image is representative of the visual mitigation effects from ANST viewpoints effects resulting from a 50-foot-wide permanent right-of-way.

Figure 4-1: Full Simulation, KOP 38, Regrowth 5 Years after Construction, 50-foot-wide Permanent Right-of-Way



KOP38 - Raven's Roost, Blue Ridge Parkway Overlook, Looking Northwest - Existing View



KOP38 - Raven's Roost, Blue Ridge Parkway Overlook, Looking Northwest - Proposed View 50' Permanent ROW (5 Year Tree Growth)



<b>Viewpoint KOP38</b> Raven's Roost, Blue Ridge Parkway Overlook	
<span style="color: blue;">■</span> Viewer's Location <span style="color: yellow;">■</span> 50' Permanent Right-of-Way	
<small>NOTE: The above picture is an algorithmically generated simulation of a 5-year tree regrowth simulation within the 50-foot permanent right-of-way. It is not a photograph of the actual site.</small>	
Sighting Position (N, E, Elev. FT)    2230003.4 North by (True/False) (N, S, E, W)    0.000/02.7 Direction of Photography (True/False)    208.8 Height of Camera Above Ground (ft)    3.4 Date of Photography    0 Hours: 00m: 00s PM Orientation of View    SW Vertical Field of View    0.0° Vertical Field of View    88°	
<small>NOTE: Viewpoints that have been surveyed by                  J. Engineering &amp; Survey                  101 (S + HW) (Berkley, WV) 40708                  Heights are above mean sea level                  Elevation Zone: Eastern                  UTM ZONE ID: 18QDG                  No part of this file shall be reproduced in any way                  Visualizations should be made from the full file "FullView" only.</small>	
Photos Generated Using TrueScape™ by TrueScape (www.truescape.com) Provided by	
<small>www.truescape.com</small>	
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Figure 4-2: Full Simulation, KOP 38, Regrowth 15-20 Years after Construction, 50-foot-wide Permanent Right-of-Way



KOP38 - Raven's Roost, Blue Ridge Parkway Overlook, Looking Northwest - Existing View



KOP38 - Raven's Roost, Blue Ridge Parkway Overlook, Looking Northwest - Proposed View 50' Permanent ROW (15/20 Year Tree Growth)

<b>Viewpoint KOP38</b> Raven's Roost, Blue Ridge Parkway Overlook	
<span style="color: blue;">●</span> Viewpoint Location <span style="color: orange;">●</span> Project Right-of-Way	
<small>NOTE: The above picture (CMP) shows the proposed project location for the 50-foot wide permanent right-of-way and does not show the final right-of-way of the pipeline ROW.</small>	
Sighting Position (NAD 83) Zone 18 Northing Position (NAD 83) Zone 18 Elevation of Sighting Position (NAD 83) Height of Camera Above Ground (ft) Date of Photography Orientation of View Horizontal Field of View Vertical Field of View	222,000.4 67,360.52.7 3,888.8 8.4 6/16/2016 2:08:42 PM 90° 52° 88°
<small>NOTES:                  Viewpoint locations have been surveyed by:                  G Engineering Solutions                  102 Sycamore Street, WV 26202                  Heights are above mean sea level!                  Elevation in Zone Data is                  UTM Zone 18, NAD 83                  No part of this picture should be treated as a survey.                  Viewpoint numbers should be made from the full size "Toolbox" only.</small>	
Photo Simulated Using TrueScape™ Technology (Patent No. US 8,534,902 B2) Provided by 	
<small>www.truescape.com</small>	
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Tree and shrub species and planting densities used within these areas would be selected based on availability within the project area, as well as consultations with Forest Service staff. Atlantic would monitor the planted areas for successful growth of the seedlings, but would not plan to actively maintain or manage the planted areas, which would allow natural revegetation from surrounding forest species and sprouting of stumps to occur and supplement the growing seedlings. During operation of the ACP pipeline, only the 50-foot-wide permanent right-of-way will be periodically mowed and maintained in an herbaceous state.

#### **4.4.3 Visual Impacts of the ACP in SSF**

The eight KOPs for the SSF were identified by the NPS, and are intended to be representative of a wide variety of publicly accessible views from the ANST.

As listed in Table 2-2, there is no view of the ACP from KOP SSF 03, due to intervening topography and vegetation. As shown in Figures 3-53, 3-54, and 3-61, views of the corridor from KOPs SSF 02, 04, and 07 (respectively) are effectively blocked by intervening vegetation. The ACP would have no visual impact in these locations.

Observers at from KOP SSF 01 would have a relatively clear view of the corridor as it climbs from the Greenbrier River toward the SSF. Because this KOP is not within, and does not have a meaningful view of the SSF or other federal or state lands, visual resources management considerations are not applicable here.

Among the SSF viewpoints, the clearest views of the ACP corridor would be from KOP SSF 05 (Figures 3-55 through 3-57), along the Allegheny Trail. As described in Section 3.5.4, the trail in this location would be relocated; nonetheless, the simulations in the Figures are consistent with what a viewer might see at the nearest Allegheny Trail crossing: alteration of the landscape would occur in the immediate foreground and foreground, where existing forest would be permanently replaced with a linear stretch of open land (typically grasses and low shrubs), which would become narrower as regrowth occurs along the temporary right-of-way. The change in vegetation type would dominate the view, particularly where viewers are able to look down the axis of the ACP corridor. The viewing area for these changes would be relatively small—limited to the area immediately near each intersection of the corridor with an existing road or trail. Outside of this immediate viewing location, trees and terrain would likely minimize or eliminate the ability to see the ACP corridor, particularly during leaf-on conditions.

MNF has identified the area around KOP ANST 05 as being in Scenic Class 2, equivalent to “high” scenic value. The ACP corridor at the trail crossing would be generally inconsistent with this designation, although this inconsistency would apply to a limited area as described above.

As shown in Figures 3-58 through 3-60 (KOP SSF 06) and Figures 3-62 through 3-64 (KOP SSF 08), views of corridor crossings of roadways would be minimally distinguishable, even at relatively close range. At the crossing itself, observers would have axial views along the corridor, where alteration of the landscape (replacement of trees with low vegetation) would be dominant, even after trees and other vegetation reclaim the temporary right-of-way. The viewing area for these changes would be relatively small—limited to the area immediately near each

intersection of the corridor with an existing road or trail. Outside of this immediate viewing location, trees and terrain would likely minimize or eliminate the ability to see the ACP corridor, particularly during leaf-on conditions.

The visual mitigation measures described in Section 4.2.3, including feathering of right-of-way edges and replanting, will also help to reduce contrast between the right-of-way and surrounding areas for all SSF KOPs.

## 5.0 REFERENCES

- National Park Service. 2008. Appalachian National Scenic Trail Resource Management Plan. September 2008. Accessed on January 3, 2017. Available online at: [https://www.nps.gov/appa/learn/management/upload/Appalachian\\_Trail\\_Resource\\_Management\\_Plan.pdf](https://www.nps.gov/appa/learn/management/upload/Appalachian_Trail_Resource_Management_Plan.pdf)
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- U.S. Forest Service. 2015. *Recommended Key Observation Points for Proposed Atlantic Coast Pipeline On the George Washington and Jefferson National Forests and the Monongahela National Forest*. E-mail from Ted Coffman, received on September 14, 2015.
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**ATLANTIC COAST PIPELINE ENVIRONMENTAL SURVEY**

**Visual Impact Assessment Report**

**APPENDIX A**

**Field Survey Photo Pages**

**Field Survey Photos, Monongahela National Forest**

Unless otherwise specified, all images are in the general direction of the nearest proposed portions of the ACP corridor.



**KOP 06: Highlands Scenic Highway near White Low Place**



**KOP 42: Highlands Scenic Highway at Red Lick Scenic Overlook**



**KOP 43: Highlands Scenic Highway at Little Laurel Scenic Overlook**



**KOP 44: WV 28 at ACP Crossing, Looking East (left) and Northwest (right)**



**KOP 45: Greenbrier River Trail near ACP Corridor Crossing looking East (left) and West (right)  
Note: Crossing location has shifted south of this position since photos were taken.**



KOP 46: Allegheny Trail Crossing, looking East (top) and West (bottom)



**KOP 47:**  
**Entrance to FR 1012 (view of ACP Corridor not accessible)**



**KOP 49: FR 1026**



**Slaty Fork, WV, looking in the direction of KOP 50.  
Actual KOP (FR 24) not accessible.**

**Field Survey Photos, George Washington National Forest**

Unless otherwise specified, all images are in the general direction of the nearest proposed portions of the ACP corridor.



**KOP 15: Shenandoah Mountain Trail 4, Looking West (ACP corridor no longer in this view)**



**KOP 39: Three Ridges Overlook**



**KOP 40: Bee Mountain (Appalachian Trail)**



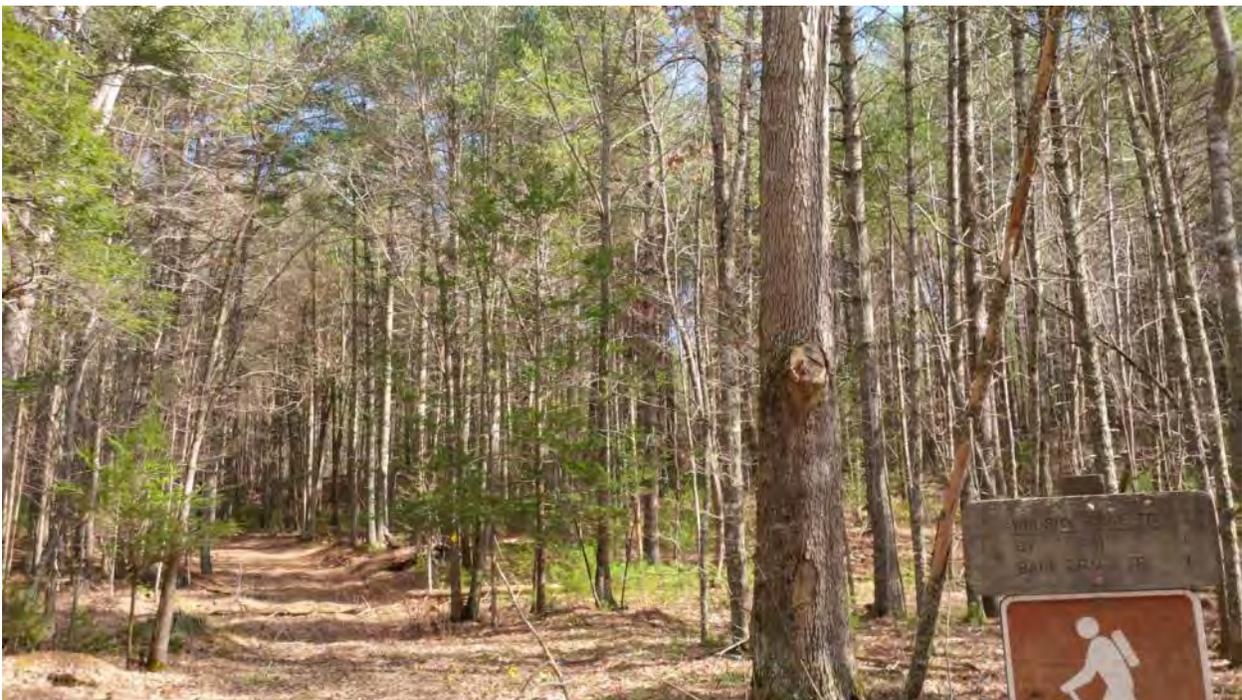
**KOP 41: Three Ridges ridge top, Three Ridges Wilderness Area**



**KOP 52: ACP crossing at FST 718 (Brushy Ridge Trail/Back Draft Trail), looking North (left) and South (top)**



**KOP 53: Trailhead of FST 717 (Short Ridge Trail)**



**KOP 54: Trailhead of FST 718 (Brushy Ridge Trail/Back Draft Trail)**



**KOP 58: Duncan Knob Lookout**



**KOP 61: Route 624 at Route 625 (Fort Lewis Area)**



**KOP 62: Route 625 at Route 678 (Fort Lewis Area)**



**KOP 63: ACP corridor in vicinity of Cowpasture River crossing (looking west)**



**KOP 64: Near Southern Terminus of Shenandoah Mountain Trail**



**KOP 65: Devil's Knob Overlook, Wintergreen Resort**

**Field Survey Photos, Appalachian National Scenic Trail**

Unless otherwise specified, all images are in the general direction of the nearest proposed portions of the ACP corridor.



**ANST 01: Afton Mountain**



**ANST 02: Humpback Rocks**



**ANST 03: Battery Cliffs**



**ANST 04: Laurel Springs**



**ANST 05: Cedar Cliffs**



**ANST 06: Little Ravens Roost**



**ANST 07: Sherando Valley**



**ANST 08a: Three Ridges Overlook (North)**



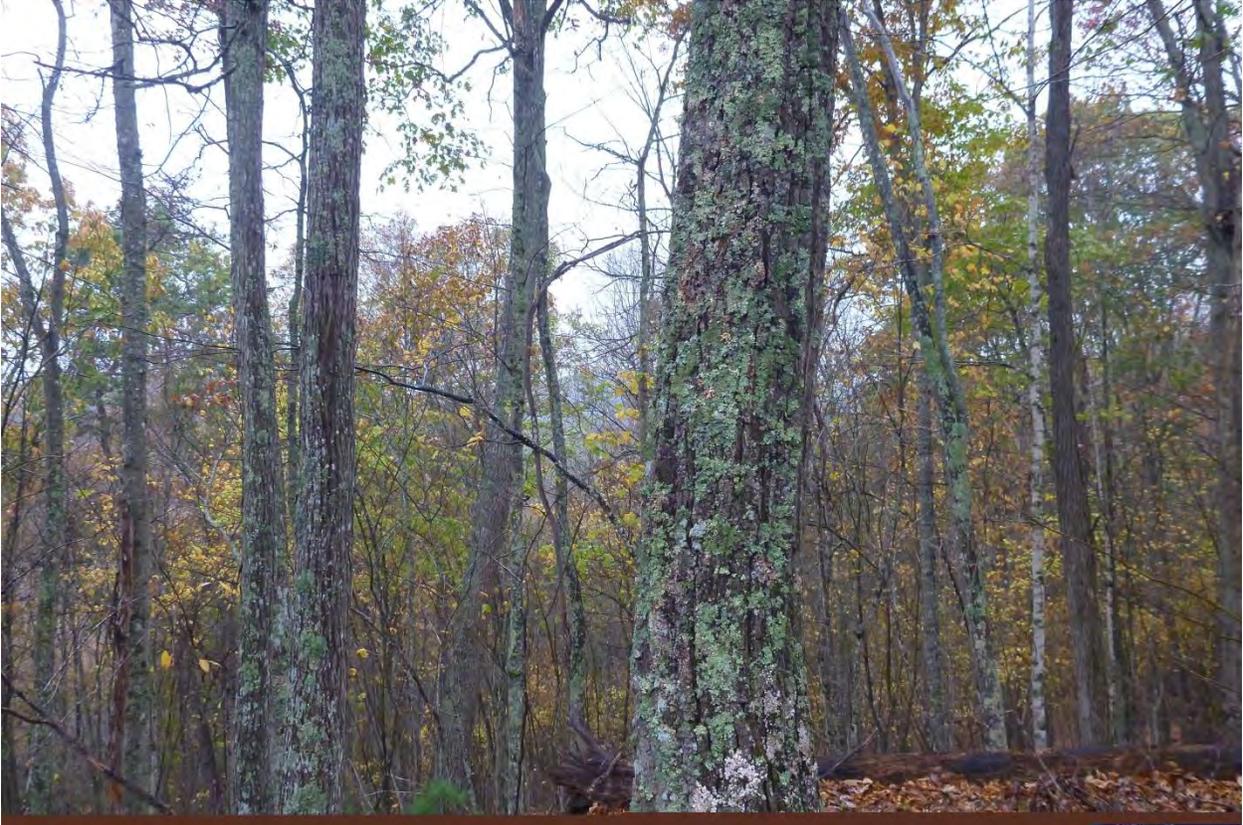
**ANST 08b: Three Ridges Overlook (South)—Original Location Identified by NPS**

**Field Survey Photos, Seneca State Forest**

Unless otherwise specified, all images are in the general direction of the nearest proposed portions of the ACP corridor.



**SSF 01: Greenbrier River**



SSF 02:Public Road 1/8



**SSF 03: Laurel Run Road**



**SSF 04: Loop Road (Public Road 1/10)**



**SSF 05: Allegheny Trail Looking East (top) and West (bottom)**



SSF 06: WV Route 28



SSF 08: WV Route 92

**ATLANTIC COAST PIPELINE ENVIRONMENTAL SURVEY**

**National Forest Visual Impact Assessment Report**

**APPENDIX B**

**High-Resolution, Large-Format Full Visual Simulation Images**



**KOP34 - Torry Ridge Trail 1, Looking Southeast - Existing View**



**KOP34 - Torry Ridge Trail 1, Looking Southeast - Following Construction**

For onscreen display:  
Scale bar to be 4 inches (10.16cm wide)  
Viewing Distance is 327 inches (8.3m)

# Atlantic Coast Pipeline

## ERM - ACP Pipeline ROW Additional Forestry

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**Viewpoint KOP34**  
Torry Ridge Trail 1  
with Contingency Right of Way (ROW) shown

● Viewpoint Location    ● Project Area

NOTE: The above pipeline ROW alignment has been exaggerated in width for visual purposes only and does not represent the actual width of the pipeline ROW.

Easting Position (UTM - Zone 17):	2214670.3
Northing Position (UTM - Zone 17):	13778971.8
Elevation of Photopoint Position (NAVD83):	2644.2
Height of Camera Above Ground (ft):	5.4
Date of Photography:	6 Nov 15 at 04:04 PM
Orientation of View:	SE
Horizontal Field of View:	124°
Vertical Field of View:	55°

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NOTES:

Viewpoint location has been terrain aligned using 1/8 and 1/3 arc degree terrain, sourced from USGS and with a camera mounted 5.4 units.

Heights are above mean sea level.  
Projection/Zone/Datum:  
UTM ZONE 17, NAD83

No part of this photo simulation shall be altered in any way.  
Visual assessments should be made from the full size TrueView™ only.

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TrueView™ Technology  
(Patent No.: US 8,184,946 B2)  
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**KOP34 - Torry Ridge Trail 1, Looking Southeast - Existing View**



**KOP34 - Torry Ridge Trail 1, Looking Southeast - Proposed View 75' Permanent ROW (5 Year Tree Growth)**

For onscreen display:  
Scale bar to be 4 inches (10.16cm wide)  
Viewing distance is 397 inches (10.1m)

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**KOP34**  
Torry Ridge Trail 1

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● Viewpoint Location   
 ● Pipeline Right-of-Way

NOTE: The above pipeline ROW alignment has been exaggerated in width for visual purposes only and does not represent the actual width of the pipeline ROW.

Easting Position (UTM - Zone 17):	2214670.3
Northing Position (UTM - Zone 17):	13778971.8
Elevation of Photograph Position (NAVD88):	2655.1
Height of Camera Above Ground (ft):	8.4
Date of Photography:	6 November 2015 at 10:58 AM
Orientation of View:	SE
Horizontal Field of View:	124°
Vertical Field of View:	55°

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NOTES:  
Viewpoint locations have been terrain-aligned using 19 and 13 arc degrees terrain, sourced from USGS and with a camera mounted gps unit.

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**KOP34 - Torry Ridge Trail 1, Looking Southeast - Existing View**



**KOP34 - Torry Ridge Trail 1, Looking Southeast - Proposed View 75' Permanent ROW (15/20 Year Tree Growth)**

For onscreen display:  
Scale bar to be 4 inches (10.16cm wide)  
Viewing distance is 397 inches (10.1m)

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**KOP34**  
Torry Ridge Trail 1

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● Viewpoint Location    ● Pipeline Right-of-Way

NOTE: The above pipeline ROW alignment has been exaggerated in width for visual purposes only and does not represent the actual width of the pipeline ROW.

Easting Position (UTM - Zone 17):	2214670.3
Northing Position (UTM - Zone 17):	13778971.8
Elevation of Photograph Position (NAVD88):	2655.1
Height of Camera Above Ground (ft):	5.4
Date of Photography:	6 November 2015 at 10:58 AM
Orientation of View:	SE
Horizontal Field of View:	124°
Vertical Field of View:	55°

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NOTES:  
Viewpoint locations have been terrain-aligned using 19 and 13 arc degrees terrain, sourced from USGS and with a camera mounted gps unit.

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**KOP35 - Torry Ridge Trail 2, Looking Southeast - Existing View**



**KOP35 - Torry Ridge Trail 2, Looking Southeast - Following Construction**

For onscreen display:  
Scale bar to be 4 inches (10.16cm wide)  
Viewing distance is 307 inches (7.8m)

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**Viewpoint 03**  
Torry Ridge Trail 2

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● Viewpoint Location    ● Pipeline Right-of-Way

NOTE: The above pipeline RCW alignment has been exaggerated in width for visual purposes only and does not represent the actual width of the pipeline RCW.

Easting Position (UTM - Zone 17)	2224536.8
Northing Position (UTM - Zone 17)	13785472.0
Elevation of Photograph Position (NAVD83)	2456.0
Height of Camera Above Ground (ft)	5.4
Date of Photography	6 November 2015 at 09:35 PM
Orientation of View	SE
Horizontal Field of View	124°
Vertical Field of View	55°

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NOTES:  
Viewpoint locations have been terrain-aligned using 19 and 13 arc degrees terrain, sourced from USGS and with a camera mounted gps unit.

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**KOP35 - Torry Ridge Trail 2, Looking Southeast - Existing View**



**KOP35 - Torry Ridge Trail 2, Looking Southeast - Proposed View 75' Permanent ROW (5 Year Tree Growth)**

For onscreen display:  
Scale bar to be 4 inches (10.16cm wide)  
Viewing distance is 397 inches (10.1m)

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**KOP35**  
Torry Ridge Trail 2

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● Viewpoint Location     ● Pipeline Right-of-Way

---

NOTE: The proposed pipeline ROW alignment shown on this map is for informational purposes only and does not represent the actual width of the pipeline ROW.

Easting Position (UTM - Zone 17):	2224536.8
Northing Position (UTM - Zone 17):	13785472.0
Elevation of Photograph Position (NAVD83):	2456.0
Height of Camera Above Ground (ft):	5.4
Date of Photography:	6 November 2015 at 12:35 PM
Orientation of View:	SE
Horizontal Field of View:	124°
Vertical Field of View:	55°

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NOTES:  
Viewpoint locations have been terrain-aligned using 19 and 1/3 arc degrees terrain, sourced from USGS and with a camera mounted gps unit.

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TrueView™ Technology  
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**KOP35 - Torry Ridge Trail 2, Looking Southeast - Existing View**



**KOP35 - Torry Ridge Trail 2, Looking Southeast - Proposed View 75' Permanent ROW (15/20 Year Tree Growth)**

For onscreen display:  
Scale bar to be 4 inches (10.16cm wide)  
Viewing distance is 307 inches (7.8m)

Atlantic Coast Pipeline™

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**KOP35**  
Torry Ridge Trail 2

---

● Viewpoint Location     ● Pipeline Right-of-Way

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NOTE: The proposed pipeline ROW alignment shown on this map is for informational purposes only and does not represent any final location of the pipeline ROW.

Easting Position (UTM - Zone 17):	<b>2224536.8</b>
Northing Position (UTM - Zone 17):	<b>13785472.0</b>
Elevation of Photograph Position (NAVD83):	<b>2456.0</b>
Height of Camera Above Ground (ft):	<b>5.4</b>
Date of Photography:	<b>6 November 2015 at 12:35 PM</b>
Orientation of View:	<b>SE</b>
Horizontal Field of View:	<b>124°</b>
Vertical Field of View:	<b>55°</b>

---

NOTES:  
Viewpoint locations have been terrain-aligned using 1/8 and 1/3 arc degree terrain, sourced from USGS and with a camera mounted gps unit.

---

Photo Simulation Created Using  
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**KOP38** - Raven's Roost, Blue Ridge Parkway Overlook, Looking Northwest - **Existing View**



**KOP38** - Raven's Roost, Blue Ridge Parkway Overlook, Looking Northwest - **Following Construction**

For onscreen display:  
Scale bar to be 4 inches (10.16cm wide)  
Viewing Distance is 397 inches (10.1m)

Atlantic Coast Pipeline™

---

**Viewpoint 05**  
Raven's Roost, Blue Ridge Parkway Overlook

● Viewpoint Location   ● Pipeline Right-of-Way

NOTE: The above pipeline ROW alignment has been exaggerated in width for visual purposes only and does not represent the actual width of the pipeline ROW.

Easting Position (UTM - Zone 17):	<b>2230689.4</b>
Northing Position (UTM - Zone 17):	<b>13780972.7</b>
Elevation of Photopoint Position (NAVD88):	<b>3188.8</b>
Height of Camera Above Ground (ft):	<b>5.4</b>
Date of Photography:	<b>6 November 2015 at 03:55 PM</b>
Orientation of View:	<b>NW</b>
Horizontal Field of View:	<b>124°</b>
Vertical Field of View:	<b>55°</b>

---

NOTES:  
Viewpoint locations have been surveyed by:  
J Engineering Sciences  
PO Box 8006, Bluefield, WV 24701  
Heights are above mean sea level.  
Projection/Coordinate:  
UTM ZONE 17, NAD83  
No part of this photosimulation shall be altered in any way.  
Visual assessments should be made from the full size TrueView™ only.

---

Photo Simulation Created Using  
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**KOP38** - Raven's Roost, Blue Ridge Parkway Overlook, Looking Northwest - **Existing View**



**KOP38** - Raven's Roost, Blue Ridge Parkway Overlook, Looking Northwest - **Proposed View 75' Permanent ROW (5 Year Tree Growth)**

For onscreen display:  
Scale bar to be 4 inches (10.16cm wide)  
Viewing Distance is 197 inches (5.0m)

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---

**KOP38**  
Raven's Roost,  
Blue Ridge Parkway Overlook

● Viewpoint Location    ● Pipeline Right-of-Way

NOTE: The above pipeline ROW alignment is a general representation for visual purposes only and does not represent the actual width of the pipeline ROW.

Easting Position (UTM - Zone 17):	<b>2230689.4</b>
Northing Position (UTM - Zone 17):	<b>13780972.7</b>
Elevation of Photopoint Position (NAVD88):	<b>3188.8</b>
Height of Camera Above Ground (ft):	<b>5.4</b>
Date of Photography:	<b>6 November 2015 at 02:55 PM</b>
Orientation of View:	<b>NW</b>
Horizontal Field of View:	<b>124°</b>
Vertical Field of View:	<b>55°</b>

---

NOTES:  
Viewpoint locations have been surveyed by:  
G Engineering Sciences  
PO Box 806, Bluefield, WV 24701  
Heights are above mean sea level.  
Projection/Coordinate:  
UTM ZONE 17, NAD83  
No part of this photosimulation shall be altered in any way.  
Visual assessments should be made from the full size TrueView™ only.

---

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**KOP38** - Raven's Roost, Blue Ridge Parkway Overlook, Looking Northwest - **Existing View**



**KOP38** - Raven's Roost, Blue Ridge Parkway Overlook, Looking Northwest - **Proposed View 75' Permanent ROW (15/20 Year Tree Growth)**

For onscreen display:  
Scale bar to be 4 inches (10.16cm wide)  
Viewing Distance is 197' (inches 10.0 cm)

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---

**KOP38**  
Raven's Roost,  
Blue Ridge Parkway Overlook

● Viewpoint Location   ● Pipeline Right-of-Way

NOTE: This shows pipeline ROW alignment that is subject to change. Width for visual purposes only and does not represent the actual width of the pipeline ROW.

Easting Position (UTM - Zone 17):	<b>2230689.4</b>
Northing Position (UTM - Zone 17):	<b>13780972.7</b>
Elevation of Photopoint Position (NAVD88):	<b>3188.8</b>
Height of Camera Above Ground (ft):	<b>5.4</b>
Date of Photography:	<b>6 November 2015 at 02:55 PM</b>
Orientation of View:	<b>NW</b>
Horizontal Field of View:	<b>124°</b>
Vertical Field of View:	<b>55°</b>

---

NOTES:  
Viewpoint locations have been surveyed by:  
i Engineering Sciences  
PO Box 8906, Bluefield, WV 24701  
Heights are above mean sea level.  
Projection/Coordinate:  
UTM ZONE 17, NAD83  
No part of this photosimulation shall be altered in any way.  
Visual assessments should be made from the full size TrueView™ only.

---

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**KOP 39 (REVISED) - Three Ridges Overlook (REVISED), Looking Southeast - Existing View**



**KOP 39 (REVISED) - Three Ridges Overlook (REVISED), Looking Southeast - Proposed View: 75' Permanent ROW, 50' Temp. ROW**

For onscreen display:  
Scale bar to be 4 inches (102.6mm wide)  
Viewing distance is 307 inches (7.8m)

Atlantic Coast Pipeline®

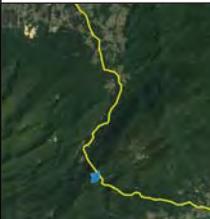
---

**KOP 39 (REVISED)**  
Three Ridges Overlook (REVISED)

---

● Viewpoint Location    ● Project Area

---




---

Existing Position (UTM - Zone 17):	2223337.4
Northing Position (UTM - Zone 17):	13771124.8
Elevation of Photopoint Position (AMSL):	2715.2
Height of Camera Above Ground (ft):	5.4
Date of Photography:	21 November 2016 at 02:41 PM
Orientation of View:	SE
Horizontal Field of View:	124°
Vertical Field of View:	55°

---

NOTES:  
Viewpoint location has been terrain aligned using 15 and 13 arc degrees terrain, sourced from USGS and with a camera mounted gas unit. Heights are above mean sea level.  
Projection/Zone/Datum:  
UTM ZONE 17

---

Photo Simulation Created Using  
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(Patent No.: US 8,184,946 B2)  
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**KOP 39 (REVISED) - Three Ridges Overlook (REVISED), Looking Southeast - Existing View**



**KOP 39 (REVISED) - Three Ridges Overlook (REVISED), Looking Southeast - Proposed View: 75' Permanent ROW, 50' Temp. ROW (5 Year Tree Growth)**

For onscreen display:  
Scale bar to be 4 inches (102.6mm wide)  
Viewing distance is 397 inches (10.1m)

Atlantic Coast Pipeline<sup>®</sup>

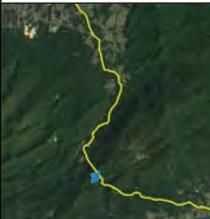
---

**KOP 39 (REVISED)**  
Three Ridges Overlook (REVISED)

---

● Viewpoint Location    ● Project Area

---




---

Existing Position (UTM - Zone 17):	2223337.4
Northing Position (UTM - Zone 17):	13771124.8
Elevation of Photopoint Position (AMSL):	2715.2
Height of Camera Above Ground (ft):	8.4
Date of Photography:	21 November 2016 at 02:41 PM
Orientation of View:	SE
Horizontal Field of View:	124°
Vertical Field of View:	55°

---

NOTES:  
Viewpoint location has been terrain aligned using 15 and 13 arc degrees terrain, sourced from USGS and with a camera mounted gas unit. Heights are above mean sea level.  
Projection/Zone/Datum:  
UTM ZONE 17

---

Photo Simulation Created Using  
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**KOP 39 (REVISED) - Three Ridges Overlook (REVISED), Looking Southeast - Existing View**



**KOP 39 (REVISED) - Three Ridges Overlook (REVISED), Looking Southeast - Proposed View: 75' Permanent ROW, 50' Temp. ROW (15-20 Year Tree Growth)**

For onscreen display:  
Scale bar to be 4 inches (102.6mm wide)  
Viewing distance is 307 inches (7.8m)

Atlantic Coast Pipeline®

---

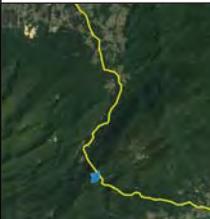
KOP 39 (REVISED)

Three Ridges Overlook (REVISED)

---

● Viewpoint Location    ● Project Area

---




---

Existing Position (UTM - Zone 17):	2223337.4
Northing Position (UTM - Zone 17):	13771124.8
Elevation of Photopoint Position (AMSL):	2715.2
Height of Camera Above Ground (ft):	5.4
Date of Photography:	21 November 2016 at 02:41 PM
Orientation of View:	SE
Horizontal Field of View:	124°
Vertical Field of View:	55°

---

NOTES:  
Viewpoint location has been terrain aligned using 1/8 and 1/3 arc degrees terrain, sourced from USGS and with a camera mounted gas unit. Heights are above mean sea level.  
Projection/Zone/Datum:  
UTM ZONE 17

---

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**KOP 39 (REVISED) - Three Ridges Overlook (REVISED), Looking Southeast - Existing View**



**KOP 39 (REVISED) - Three Ridges Overlook (REVISED), Looking Southeast - Proposed View: 75' Permanent ROW, 50' Temp. ROW (15-20 Year Tree Growth with indicative restoration)**

For onscreen display:  
Scale bar to be 4 inches (102.6mm wide)  
Viewing distance is 307 inches (7.8m)

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---

KOP 39 (REVISED)  
Three Ridges Overlook (REVISED)

---

● Viewpoint Location    ● Project Area

---



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Easting Position (UTM - Zone 17):	22233374
Northing Position (UTM - Zone 17):	1377124.8
Elevation of Photopoint Position (AMSL):	2715.2
Height of Camera Above Ground (ft):	5.4
Date of Photography:	21 November 2016 at 02:41 PM
Orientation of View:	SE
Horizontal Field of View:	124°
Vertical Field of View:	55°

---

NOTES:  
Viewpoint location has been terrain aligned using 1/8 and 1/3 arc degrees terrain, sourced from USGS and with a camera mounted gas unit. Heights are above mean sea level.  
Projection/Zone/Datum:  
UTM ZONE 17

---

Photo Simulation Created Using  
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**KOP40 - Bee Mountain, Appalachian Trail, Looking Northeast - Existing View**



**KOP40 - Bee Mountain, Appalachian Trail, Looking Northeast - Following Construction**

For onscreen display:  
Scale bar to be 4 inches (103.6mm wide)  
Viewing distance is 1977 inches (50.0m)

**Atlantic Coast Pipeline**

**ERM - ACP Pipeline ROW  
Additional Forestry**

---

**Viewpoint KOP40**

Bee Mountain, Appalachian Trail  
with Contingency Right of Way (ROW) shown

● Viewpoint Location
● Project Area



NOTE: The above pipeline ROW alignment has been suggested in width for visual purposes only and does not represent the actual width of the pipeline ROW.

Existing Position (UTM - Zone 17):	2219906.9
Northing Position (UTM - Zone 17):	13760771.3
Elevation of Photograph Position (NAVD83):	3068.4
Height of Camera Above Ground (ft):	9.4
Date of Photography:	5 Nov 15 at 2:04 a.m.
Orientation of View:	NE
Horizontal Field of View:	12.4°
Vertical Field of View:	55°

---

NOTES:

Viewpoint location has been terrain-aligned using 1/8 and 1/3 arc degree terrain, sourced from USGS and with a camera mounted 9m up.

Heights are above mean sea level.  
Projection/Zone/Datum:  
UTM ZONE 17, NAD83

No part of this photo simulation shall be altered in any way.  
Visual assessments should be made from the full size "TrueView" only.

---

Photo Simulation Created Using  
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<small>DATE</small>	<small>SHEET</small>
21 April 2016	5



**KOP40 - Bee Mountain, Appalachian Trail, Looking Northeast - Existing View**



**KOP40 - Bee Mountain, Appalachian Trail, Looking Northeast - Proposed View 75' Permanent ROW (5 Year Tree Growth)**

For onscreen display:  
Scale bar to be 4 inches (10.16cm wide)  
Viewing distance is 393 inches (10.1m)

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---

**KOP40**  
Bee Mountain,  
Appalachian Trail

● Viewpoint Location    ● Pipeline Right-of-Way

NOTE: The above pipeline ROW alignment has been exaggerated in width for visual purposes only and does not represent the actual width of the pipeline ROW.

Existing Position (UTM - Zone 17):	2219906.9
Northing Position (UTM - Zone 17):	13760771.3
Elevation of Photograph Position (NAVD88):	3015.0
Height of Camera Above Ground (ft):	5.4
Date of Photography:	9 November 2015 at 09:59 AM
Orientation of View:	NE
Horizontal Field of View:	124°
Vertical Field of View:	55°

---

NOTES:

Viewpoint locations have been terrain-aligned using 19 and 1/3 arc degree terrain, sourced from USGS and with a camera mounted gps unit.

---

Photo Simulation Created Using  
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**KOP40 - Bee Mountain, Appalachian Trail, Looking Northeast - Existing View**



**KOP40 - Bee Mountain, Appalachian Trail, Looking Northeast - Proposed View 75' Permanent ROW (15/20 Year Tree Growth)**

For onscreen display:  
Scale bar to be 4 inches (10.16cm wide)  
Viewing distance is 193 inches (50 cm)

Atlantic  
Coast  
Pipeline™

---

**KOP40**  
Bee Mountain,  
Appalachian Trail

---

● Viewpoint Location    ● Pipeline Right-of-Way



**NOTE:** The above pipeline ROW alignment has been exaggerated in width for visual purposes only and does not represent the actual width of the pipeline ROW.

Existing Position (UTM - Zone 17):	2219906.9
Northing Position (UTM - Zone 17):	13760771.3
Elevation of Photograph Position (NAVD88):	3015.0
Height of Camera Above Ground (ft):	5.4
Date of Photography:	9 November 2015 at 09:59 AM
Orientation of View:	NE
Horizontal Field of View:	124°
Vertical Field of View:	55°

---

**NOTES:**  
Viewpoint locations have been terrain-aligned using 19 and 1/3 arc degree terrain, sourced from USGS and with a camera mounted gps unit.

---

Photo Simulation Created Using  
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**KOP40 - Bee Mountain, Appalachian Trail, Looking Northeast - Existing View**



**KOP40 - Bee Mountain, Appalachian Trail, Looking Northeast - Proposed View (Permanent Right-of-Way Overlaid)**

For onscreen display:  
Scale bar to be 4 inches (10.16cm wide)  
Viewing distance is 327 inches (8.3m)

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---

**Viewpoint 01**  
Bee Mountain, Appalachian Trail

---

● Viewpoint Location    ● Pipeline Right-of-Way

NOTE: The above pipeline RCW alignment has been exaggerated in width for visual purposes only and does not represent the actual width of the pipeline RCW.

Existing Position (UTM - Zone 17):	2219906.9
Northing Position (UTM - Zone 17):	13760771.3
Elevation of Photograph Position (NAVD88):	3011.0
Height of Camera Above Ground (ft):	5.4
Date of Photography:	9 November 2015 at 09:59 AM
Orientation of View:	NE
Horizontal Field of View:	12.4°
Vertical Field of View:	55°

---

NOTES:  
Viewpoint locations have been terrain-aligned using 19 and 1/3 arc degrees terrain, sourced from USGS and with a camera mounted gps unit.

---

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**KOP34 - Torry Ridge Trail 1, Looking Southeast - Existing View**



**KOP34 - Torry Ridge Trail 1, Looking Southeast - Proposed View- Contingency Plan**

For onscreen display:  
Scale bar to be 4 inches (10.16cm wide)  
Viewing Distance is 327 inches (8.3m)

**Atlantic Coast Pipeline**

**ERM - ACP Pipeline ROW  
Additional Forestry**

---

**Viewpoint KOP34**  
Torry Ridge Trail 1  
with Contingency Right of Way (ROW) shown

---

● Viewpoint Location    ● Project Area



NOTE: The above pipeline ROW alignment has been exaggerated in width for visual purposes only and does not represent the actual width of the pipeline ROW.

Easting Position (UTM - Zone 17):	2214670.3
Northing Position (UTM - Zone 17):	13778971.8
Elevation of Photopoint Position (NAVD83):	2644.2
Height of Camera Above Ground (ft):	5.4
Date of Photography:	6 Nov 15 at 04:04 PM
Orientation of View:	SE
Horizontal Field of View:	124°
Vertical Field of View:	55°

---

**NOTES:**

Viewpoint location has been terrain aligned using 1/8 and 1/3 arc degrees terrain, sourced from USGS and with a camera mounted 5m up.

Heights are above mean sea level.  
Projection/Zone/Datum:  
UTM ZONE 17, NAD83

No part of this photo simulation shall be altered in any way.  
Visual assessments should be made from the full size TrueView™ only.

---

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**KOP34 - Torry Ridge Trail 1, Looking Southeast - Existing View**



**KOP34 - Torry Ridge Trail 1, Looking Southeast - Proposed View (Right Of Way Overlayed) - Contingency Plan**

For onscreen display:  
Scale bar to be 4 inches (101.6mm wide)  
Viewing Distance is 397 inches (10.1m)



**ERM - ACP Pipeline ROW  
Additional Forestry**

---

**Viewpoint KOP34**  
Torry Ridge Trail 1  
with Contingency Right of Way (ROW) shown

● Viewpoint Location    ● Project Area



NOTE: The above pipeline ROW alignment has been exaggerated in width for visual purposes only and does not represent the actual width of the pipeline ROW.

Easting Position (UTM - Zone 17):	2214670.3
Northing Position (UTM - Zone 17):	13778971.8
Elevation of Photopoint Position (NAVD83):	2644.2
Height of Camera Above Ground (ft):	5.4
Date of Photography:	6 Nov 15 at 04:04 PM
Orientation of View:	SE
Horizontal Field of View:	124°
Vertical Field of View:	55°

---

NOTES:

Viewpoint location has been terrain aligned using 1/9 and 1/3 arc degrees terrain, sourced from USGS and with a camera mounted 5m up.

Heights are above mean sea level.  
Projection/Zone/Datum:  
UTM ZONE 17, NAD83

No part of this photo simulation shall be altered in any way.  
Visual assessments should be made from the full size "TrueView" only.

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**KOP40 - Bee Mountain, Appalachian Trail, Looking Northeast - Existing View**



**KOP40 - Bee Mountain, Appalachian Trail, Looking Northeast - Proposed View - Contingency Plan**

For onscreen display:  
Scale bar to be 4 inches (10.16cm wide)  
Viewing distance is 197 inches (5.0m)



**Atlantic Coast Pipeline**

**ERM - ACP Pipeline ROW  
Additional Forestry**

---

**Viewpoint KOP40**

Bee Mountain, Appalachian Trail  
with Contingency Right of Way (ROW) shown

● Viewpoint Location    ● Project Area



NOTE: The above pipeline ROW alignment has been suggested in width for visual purposes only and does not represent the actual width of the pipeline ROW.

Existing Position (UTM - Zone 17):	2219906.9
Northing Position (UTM - Zone 17):	13760771.3
Elevation of Photograph Position (NAVD88):	3068.4
Height of Camera Above Ground (ft):	9.4
Date of Photography:	5 Nov 15 at 2:04 a.m.
Orientation of View:	NE
Horizontal Field of View:	12.4°
Vertical Field of View:	55°

---

NOTES:

Viewpoint location has been terrain-aligned using 1/8 and 1/3 arc degree terrain, sourced from USGS and with a camera mounted on a pole.

Heights are above mean sea level.  
Projection/Zone/Datum:  
UTM ZONE 17, NAD83

No part of this photo simulation shall be altered in any way.  
Visual assessments should be made from the full size "TrueView" only.

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**Viewpoint KOP40 - Bee Mountain, Appalachian Trail, Looking Northeast - Existing View**



**Viewpoint KOP40 - Bee Mountain, Appalachian Trail, Looking Northeast - Proposed View (Right Of Way Overlaid) - Contingency Plan**

For onscreen display:  
Scale bar to be 4 inches (10.16cm wide)  
Viewing distance is 197 inches (5.0m)

**Atlantic Coast Pipeline**

**ERM - ACP Pipeline ROW  
Additional Forestry**

---

**Viewpoint KOP40**  
Bee Mountain, Appalachian Trail  
with Contingency Right of Way (ROW) shown

● Viewpoint Location    ● Project Area



NOTE: The above pipeline ROW alignment has been suggested in width for visual purposes only and does not represent the actual width of the pipeline ROW.

Existing Position (UTM - Zone 17):	2219906.9
Northing Position (UTM - Zone 17):	13760771.3
Elevation of Photopoint Position (NAVD88):	3068.4
Height of Camera Above Ground (ft):	5.4
Date of Photography:	5 Nov 15 at 2:04 a.m.
Orientation of View:	NE
Horizontal Field of View:	12.4°
Vertical Field of View:	55°

---

NOTES:

Viewpoint location has been terrain-aligned using 1/8 and 1/3 arc degree terrain, sourced from USGS and with a camera mounted gps unit.

Heights are above mean sea level.  
Projection/Zone/Datum:  
UTM ZONE 17, NAD83

No part of this photo simulation shall be altered in any way.  
Visual assessments should be made from the full size "TrueView" only.

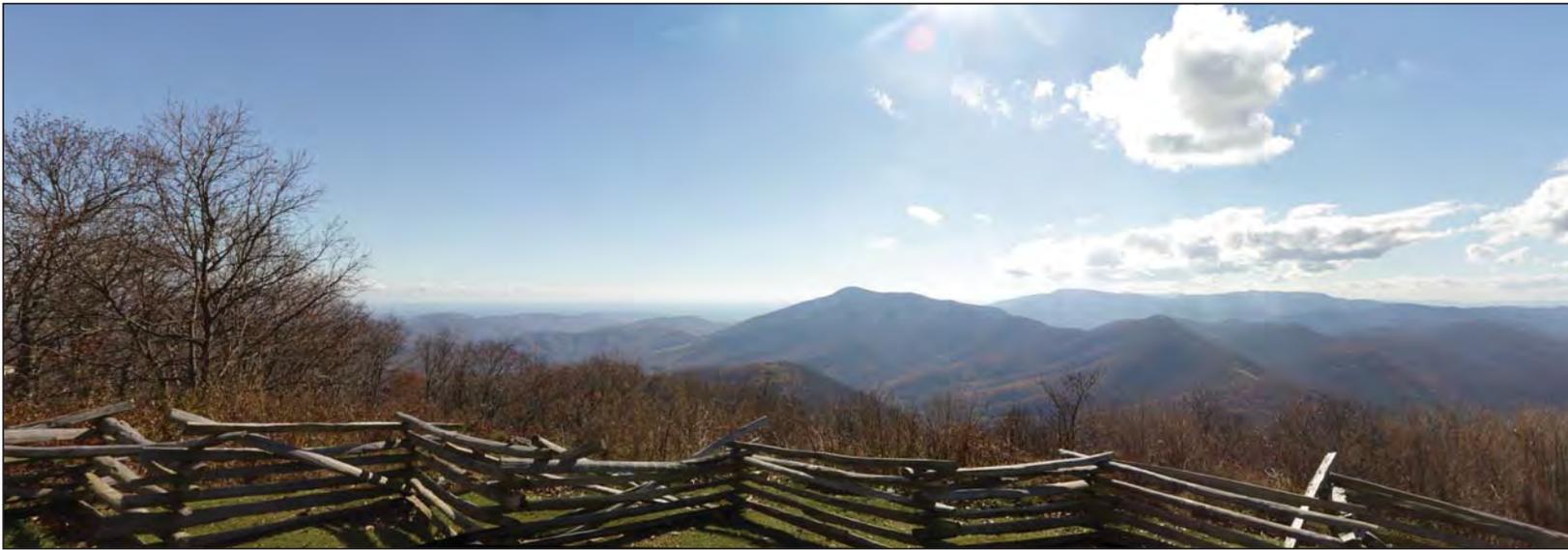
---

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**KOP65 - Devil's Knob, Looking South - Existing View**



**KOP65 - Devil's Knob, Looking South - Proposed View (Right Of Way Overlayed) - Contingency Plan**

For onscreen display:  
Scale bar to be 4 inches (10.16cm wide)  
Viewing Distance is 327 inches (8.3m)



**ERM - ACP Pipeline ROW  
Additional Forestry**

---

**Viewpoint KOP65**  
Devil's Knob  
with Contingency Right of Way (ROW) shown

● Viewpoint Location    ● Project Area



---

NOTE: The above pipeline ROW alignment has been exaggerated in width for visual purposes only and does not represent the actual width of the pipeline ROW.

Existing Position (UTM - Zone 17):	22292511
Northing Position (UTM - Zone 17):	11374276.5
Elevation of Photopoint Position (NAVD88):	3729.3
Height of Camera Above Ground (ft):	5.4
Date of Photography:	5 Nov 15 at 2:50 p.m.
Orientation of View:	S
Horizontal Field of View:	124°
Vertical Field of View:	55°

---

NOTES:

Viewpoint locations have been precision surveyed by:  
**Rick Costel & Adam Bosley**  
GIS Engineering  
LLC

Heights are above mean sea level.  
Projection Zone Datum:  
UTM ZONE 17NAD83

No part of this photo simulation shall be altered in any way.  
Visual assessments should be made from the full size TrueView™ only.

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T-1176



ANST 01 - Afton Mountain, Looking North - Existing View



ANST 01 - Afton Mountain, Looking North - Proposed View: No View of ROW

For onscreen display:  
Scale bar to be 4 inches (101.6mm wide)  
Viewing distance is 307 inches (7.8m)

**Atlantic Coast Pipeline**

ANST 01  
Afton Mountain

Viewpoint Location    Project Area

Easting Position (UTM - Zone 17)	2250788.8
Northing Position (UTM - Zone 17)	13798708.6
Elevation of Photopoint Position (AMSL)	2012.6
Height of Camera Above Ground (ft)	5.4
Date of Photography	21 November 2016 at 03:52 PM
Orientation of View	N
Horizontal Field of View	124°
Vertical Field of View	55°

NOTES:  
Viewpoint location has been terrain aligned using 1/8 and 1/3 arc degrees terrain, sourced from USGS and with a camera mounted gps unit.  
Heights are above mean sea level.  
Projection/Zone/Datum:  
UTM ZONE 17

Photo Simulation Created Using  
TrueView™ Technology  
(Patent No. - US 8,184,946 B2)  
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T-1177



**ANST 02 - Humpback Rocks, Looking Northwest - Existing View**



**ANST 02 - Humpback Rocks, Looking Northwest - Proposed View: 75' Permanent ROW, 50' Temp. ROW**

For onscreen display:  
Scale bar to be 4 inches (101.6mm wide)  
Viewing distance is 307 inches (7.8m)

Atlantic Coast Pipeline<sup>®</sup>

---

ANST 02

Humpback Rocks

---

● Viewpoint Location    ● Project Area

---




---

Existing Position (UTM - Zone 17):	2245449.9
Northing Position (UTM - Zone 17):	13791328.7
Elevation of Photopoint Position (AMSL):	3114.2
Height of Camera Above Ground (ft):	5.4
Date of Photography:	21 November 2016 at 05:21 PM
Orientation of View:	NW
Horizontal Field of View:	124°
Vertical Field of View:	55°

---

**NOTES:**

Viewpoint location has been terrain aligned using 1/8 and 1/3 arc degrees terrain, sourced from USGS and with a camera mounted gas unit. Heights are above mean sea level. Projection/Zone/Datum: UTM ZONE 17

---

Photo Simulation Created Using  
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**ANST 02 - Humpback Rocks, Looking Northwest - Existing View**



**ANST 02 - Humpback Rocks, Looking Northwest - Indicative Overlay: 75' Permanent ROW, 50' Temp. ROW**

For onscreen display:  
Scale bar to be 4 inches (101.6mm wide)  
Viewing distance is 927 inches (23.5m)

Atlantic Coast Pipeline<sup>®</sup>

---

ANST 02

Humpback Rocks

---

● Viewpoint Location    ● Project Area

---




---

Easting Position (UTM - Zone 17):	<b>2245449.9</b>
Northing Position (UTM - Zone 17):	<b>13791328.7</b>
Elevation of Photopoint Position (AMSL):	<b>3114.2</b>
Height of Camera Above Ground (ft):	<b>5.4</b>
Date of Photography:	<b>21 November 2016 at 05:21 PM</b>
Orientation of View:	<b>NW</b>
Horizontal Field of View:	<b>124°</b>
Vertical Field of View:	<b>55°</b>

---

**NOTES:**  
Viewpoint location has been terrain aligned using 1/8 and 1/3 arc degrees terrain, sourced from USGS and with a camera mounted gas unit.  
Heights are above mean sea level.  
Projection/Zone/Datum:  
UTM ZONE 17

---

Photo Simulation Created Using  
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(Patent No. - US 8,184,946 B2)  
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**ANST 02 - Humpback Rocks, Looking Northwest - Existing View**



**ANST 02 - Humpback Rocks, Looking Northwest - Proposed View: 75' Permanent ROW, 50' Temp. ROW (5 Year Tree Growth)**

For onscreen display:  
Scale bar to be 4 inches (101.6mm wide)  
Viewing distance is 927 inches (23.5m)

Atlantic Coast Pipeline<sup>®</sup>

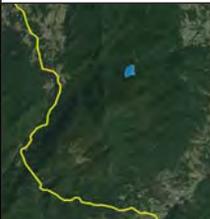
---

ANST 02

Humpback Rocks

---

● Viewpoint Location    ● Project Area




---

Easting Position (UTM - Zone 17):	2245449.9
Northing Position (UTM - Zone 17):	13791328.7
Elevation of Photopoint Position (AMSL):	3114.2
Height of Camera Above Ground (ft):	5.4
Date of Photography:	21 November 2016 at 05:21 PM
Orientation of View:	NW
Horizontal Field of View:	124°
Vertical Field of View:	55°

---

**NOTES:**

Viewpoint location has been terrain aligned using 1/8 and 1/3 arc degrees terrain, sourced from USGS and with a camera mounted 5.4 feet.

Heights are above mean sea level.

Projection/Zone/Datum:  
UTM ZONE 17

---

Photo Simulation Created Using  
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**ANST 02 - Humpback Rocks, Looking Northwest - Existing View**



**ANST 02 - Humpback Rocks, Looking Northwest - Proposed View: 75' Permanent ROW, 50' Temp. ROW (15-20 Year Tree Growth)**

For onscreen display:  
Scale bar to be 4 inches (101.6mm wide)  
Viewing distance is 937 inches (23.8m)

Atlantic Coast Pipeline<sup>®</sup>

---

ANST 02

Humpback Rocks

---

● Viewpoint Location    ● Project Area

---




---

Easting Position (UTM - Zone 17):	2245449.9
Northing Position (UTM - Zone 17):	13791328.7
Elevation of Photopoint Position (AMSL):	3114.2
Height of Camera Above Ground (ft):	5.4
Date of Photography:	21 November 2016 at 05:21 PM
Orientation of View:	NW
Horizontal Field of View:	124°
Vertical Field of View:	55°

---

**NOTES:**

Viewpoint location has been terrain aligned using 1/8 and 1/3 arc degrees terrain, sourced from USGS and with a camera mounted gps unit. Heights are above mean sea level. Projection/Zone/Datum: UTM ZONE 17

---

Photo Simulation Created Using  
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**ANST 03 - Battery Cliffs, Looking West-Northwest - Existing View**



**ANST 03 - Battery Cliffs, Looking West-Northwest - Proposed View: 75' Permanent ROW, 50' Temp. ROW**

For onscreen display:  
Scale bar to be 4 inches (102.6mm wide)  
Viewing distance is 307 inches (7.8m)

Atlantic Coast Pipeline<sup>®</sup>

---

ANST 03  
Battery Cliffs

---

● Viewpoint Location     ● Project Area

---




---

Easting Position (UTM - Zone 17):	2242516.9
Northing Position (UTM - Zone 17):	13785131.6
Elevation of Photograph Position (AMSL):	3542.0
Height of Camera Above Ground (ft):	5.4
Date of Photography:	1 December 2016 at 10:38 AM
Orientation of View:	WNW
Horizontal Field of View:	124°
Vertical Field of View:	55°

---

NOTES:  
Viewpoint location has been terrain aligned using 1/8 and 1/3 arc degrees terrain, sourced from USGS and with a camera mounted gps unit.  
Heights are above mean sea level.  
Projection/Zone/Datum:  
UTM ZONE 17

---

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**ANST 03 - Battery Cliffs, Looking West-Northwest - Existing View**



**ANST 03 - Battery Cliffs, Looking West-Northwest - Indicative Overlay: 75' Permanent ROW, 50' Temp. ROW**

For onscreen display.  
 Scale bar to be 4 inches (102.6mm wide)  
 Viewing distance is 937 inches (23.8m)

Atlantic Coast Pipeline<sup>®</sup>

---

ANST 03  
Battery Cliffs

---

● Viewpoint Location     ● Project Area

---




---

Easting Position (UTM - Zone 17):	2242516.9
Northing Position (UTM - Zone 17):	13785131.6
Elevation of Photograph Position (AMSL):	3542.0
Height of Camera Above Ground (RG):	5.4
Date of Photography:	1 December 2016 at 10:38 AM
Orientation of View:	WNW
Horizontal Field of View:	124°
Vertical Field of View:	55°

---

NOTES:  
 Viewpoint location has been terrain aligned using 1/8 and 1/3 arc degrees terrain, sourced from USGS and with a camera mounted gps unit.  
 Heights are above mean sea level.  
 Projection/Zone/Datum:  
 UTM ZONE 17

---

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**ANST 03 - Battery Cliffs, Looking West-Northwest - Existing View**



**ANST 03 - Battery Cliffs, Looking West-Northwest - Proposed View: 75' Permanent ROW, 50' Temp. ROW (5 Year Tree Growth)**

For onscreen display:  
Scale bar to be 4 inches (102.6mm wide)  
Viewing distance is 927 inches (23.5m)

Atlantic Coast Pipeline<sup>®</sup>

---

ANST 03  
Battery Cliffs

---

● Viewpoint Location     ● Project Area

---




---

Easting Position (UTM - Zone 17):	2242516.9
Northing Position (UTM - Zone 17):	13785131.6
Elevation of Photograph Position (AMSL):	3542.0
Height of Camera Above Ground (RG):	5.4
Date of Photography:	1 December 2016 at 10:38 AM
Orientation of View:	WNW
Horizontal Field of View:	124°
Vertical Field of View:	55°

---

NOTES:  
Viewpoint location has been terrain aligned using 1/8 and 1/3 arc degrees terrain, sourced from USGS and with a camera mounted gps unit.  
Heights are above mean sea level.  
Projection/Zone/Datum:  
UTM ZONE 17

---

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**ANST 03 - Battery Cliffs, Looking West-Northwest - Existing View**



**ANST 03 - Battery Cliffs, Looking West-Northwest - Proposed View: 75' Permanent ROW, 50' Temp. ROW (15-20 Year Tree Growth)**

For onscreen display:  
Scale bar to be 4 inches (102.6mm wide)  
Viewing distance is 927 inches (23.5m)

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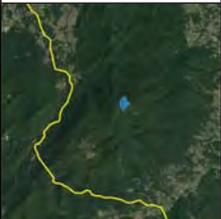
---

ANST 03  
Battery Cliffs

---

● Viewpoint Location     ● Project Area

---




---

Easting Position (UTM - Zone 17):	2242516.9
Northing Position (UTM - Zone 17):	13785131.6
Elevation of Photograph Position (AMSL):	3542.0
Height of Camera Above Ground (RG):	5.4
Date of Photography:	1 December 2016 at 10:38 AM
Orientation of View:	WNW
Horizontal Field of View:	124°
Vertical Field of View:	55°

---

NOTES:  
Viewpoint location has been terrain aligned using 1/8 and 1/3 arc degrees terrain, sourced from USGS and with a camera mounted gps unit.  
Heights are above mean sea level.  
Projection/Zone/Datum:  
UTM ZONE 17

---

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**ANST 04 - Laurel Springs, Looking Northwest - Existing View**



**ANST 04 - Laurel Springs, Looking Northwest - Proposed View: 75' Permanent ROW, 50' Temp. ROW**

For onscreen display.  
Scale bar to be 4 inches (102mm wide)  
Viewing distance is 307 inches (7.8m)

Atlantic Coast Pipeline<sup>®</sup>

---

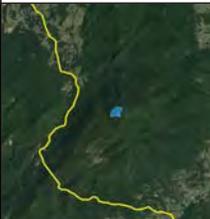
ANST 04

Laurel Springs

---

● Viewpoint Location    ● Project Area

---




---

Easting Position (UTM - Zone 17):	2238677.3
Northing Position (UTM - Zone 17):	13783641.2
Elevation of Photograph Position (AMSL):	3315.6
Height of Camera Above Ground (ft):	5.4
Date of Photography:	1 December 2016 at 11:18 AM
Orientation of View:	NW
Horizontal Field of View:	124°
Vertical Field of View:	55°

---

NOTES:  
Viewpoint location has been terrain aligned using 1/8 and 1/3 arc degrees terrain, sourced from USGS and with a camera mounted gps unit.  
Heights are above mean sea level.  
Projection/Zone/Datum:  
UTM ZONE 17

---

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**ANST 04 - Laurel Springs, Looking Northwest - Existing View**



**ANST 04 - Laurel Springs, Looking Northwest - Indicative Overlay: 75' Permanent ROW, 50' Temp. ROW**

For onscreen display.  
Scale bar to be 4 inches (102mm wide)  
Viewing distance is 307 inches (500m)

Atlantic Coast Pipeline<sup>®</sup>

---

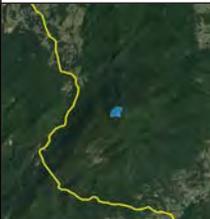
ANST 04

Laurel Springs

---

● Viewpoint Location    ● Project Area

---




---

Easting Position (UTM - Zone 17):	2238677.3
Northing Position (UTM - Zone 17):	13783641.2
Elevation of Photograph Position (AMSL):	3315.6
Height of Camera Above Ground (ft):	5.4
Date of Photography:	1 December 2016 at 11:18 AM
Orientation of View:	NW
Horizontal Field of View:	124°
Vertical Field of View:	55°

---

NOTES:  
Viewpoint location has been terrain aligned using 1/8 and 1/3 arc degrees terrain, sourced from USGS and with a camera mounted gps unit.  
Heights are above mean sea level.  
Projection/Zone/Datum:  
UTM ZONE 17

---

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**ANST 04 - Laurel Springs, Looking Northwest - Existing View**



**ANST 04 - Laurel Springs, Looking Northwest - Proposed View: 75' Permanent ROW, 50' Temp. ROW (5 Year Tree Growth)**

For onscreen display:  
Scale bar to be 4 inches (102mm wide)  
Viewing distance is 307 inches (80m)

Atlantic Coast Pipeline<sup>®</sup>

---

ANST 04

Laurel Springs

---

● Viewpoint Location    ● Project Area

Easting Position (UTM - Zone 17):	2238677.3
Northing Position (UTM - Zone 17):	13783641.2
Elevation of Photopoint Position (AMSL):	3315.6
Height of Camera Above Ground (ft):	5.4
Date of Photography:	1 December 2016 at 11:18 AM
Orientation of View:	NW
Horizontal Field of View:	124°
Vertical Field of View:	55°

---

NOTES:  
Viewpoint location has been terrain aligned using 1/8 and 1/3 arc degrees terrain, sourced from USGS and with a camera mounted gps unit.  
Heights are above mean sea level.  
Projection/Zone/Datum:  
UTM ZONE 17

---

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**ANST 04 - Laurel Springs, Looking Northwest - Existing View**



**ANST 04 - Laurel Springs, Looking Northwest - Proposed View: 75' Permanent ROW, 50' Temp. ROW (15-20 Year Tree Growth)**

For onscreen display.  
Scale bar to be 4 inches (102.5mm wide)  
Viewing distance is 307 inches (7.8m)

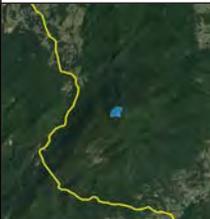
**Atlantic Coast Pipeline**

---

**ANST 04**  
Laurel Springs

---

● Viewpoint Location    ● Project Area




---

Easting Position (UTM - Zone 17):	2238677.3
Northing Position (UTM - Zone 17):	13783641.2
Elevation of Photopoint Position (AMSL):	3315.6
Height of Camera Above Ground (ft):	5.4
Date of Photography:	1 December 2016 at 11:18 AM
Orientation of View:	NW
Horizontal Field of View:	124°
Vertical Field of View:	55°

---

NOTES:

Viewpoint location has been terrain aligned using 1/8 and 1/3 arc degrees terrain, sourced from USGS and with a camera mounted gps unit. Heights are above mean sea level. Projection/Zone/Datum: UTM ZONE 17

---

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**ANST 05 - Cedar Cliffs B, Looking Northwest - Existing View**



**ANST 05 - Cedar Cliffs B, Looking Northwest - Proposed View: 75' Permanent ROW, 50' Temp. ROW**

For onscreen display:  
Scale bar to be 4 inches (102.6mm wide)  
Viewing distance is 9.77 inches (248cm)

Atlantic Coast Pipeline<sup>®</sup>

---

ANST 05  
Cedar Cliffs B

---

● Viewpoint Location    
 ● Project Area

---

Easting Position (UTM - Zone 17):	2233562.7
Northing Position (UTM - Zone 17):	13785356.2
Elevation of Photopoint Position (AMSL):	2829.7
Height of Camera Above Ground (ft):	5.4
Date of Photography:	1 December 2016 at 02:44 PM
Orientation of View:	NW
Horizontal Field of View:	124°
Vertical Field of View:	55°

---

**NOTES:**  
 Viewpoint location has been terrain aligned using 1/8 and 1/3 arc degrees terrain, sourced from USGS and with a camera mounted gps unit.  
 Heights are above mean sea level.  
 Projection/Zone/Datum:  
 UTM ZONE 17

---

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**ANST 05 - Cedar Cliffs B, Looking Northwest - Existing View**



**ANST 05 - Cedar Cliffs B, Looking Northwest - Proposed View: 75' Permanent ROW, 50' Temp. ROW (5 Year Tree Growth)**

For onscreen display:  
Scale bar to be 4 inches (102.6mm wide)  
Viewing distance is 927 inches (23.5m)

Atlantic Coast Pipeline<sup>®</sup>

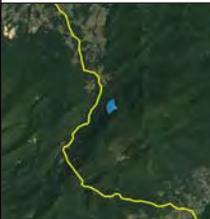
---

**ANST 05**  
Cedar Cliffs B

---

● Viewpoint Location    ● Project Area

---




---

Easting Position (UTM - Zone 17):	<b>2233562.7</b>
Northing Position (UTM - Zone 17):	<b>13785356.2</b>
Elevation of Photopoint Position (AMSL):	<b>2829.7</b>
Height of Camera Above Ground (ft):	<b>5.4</b>
Date of Photography:	<b>1 December 2016 at 02:44 PM</b>
Orientation of View:	<b>NW</b>
Horizontal Field of View:	<b>124°</b>
Vertical Field of View:	<b>55°</b>

---

**NOTES:**  
Viewpoint location has been terrain aligned using 15 and 13 arc degrees terrain, sourced from USGS and with a camera mounted 5.4 feet high. Heights are above mean sea level.  
Projection/Zone/Datum:  
UTM ZONE 17

---

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**ANST 05 - Cedar Cliffs B, Looking Northwest - Existing View**



**ANST 05 - Cedar Cliffs B, Looking Northwest - Proposed View: 75' Permanent ROW, 50' Temp. ROW (15-20 Year Tree Growth)**

For onscreen display.  
Scale bar to be 4 inches (102.5mm wide)  
Viewing distance is 9.77 inches (249cm)

Atlantic Coast Pipeline<sup>®</sup>

---

ANST 05  
Cedar Cliffs B

---

● Viewpoint Location    ● Project Area

---



---

Easting Position (UTM - Zone 17):	<b>2233562.7</b>
Northing Position (UTM - Zone 17):	<b>13785356.2</b>
Elevation of Photopoint Position (AMSL):	<b>2829.7</b>
Height of Camera Above Ground (ft):	<b>8.4</b>
Date of Photography:	<b>1 December 2016 at 02:44 PM</b>
Orientation of View:	<b>NW</b>
Horizontal Field of View:	<b>124°</b>
Vertical Field of View:	<b>55°</b>

---

NOTES:  
Viewpoint location has been terrain aligned using 1/8 and 1/3 arc degrees terrain, sourced from USGS and with a camera mounted gps unit.  
Heights are above mean sea level.  
Projection/Zone/Datum:  
UTM ZONE 17

---

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**ANST 06 - Little Ravens Roost A, Looking West-Northwest - Existing View**



**ANST 06 - Little Ravens Roost A, Looking West-Northwest - Proposed View: 75' Permanent ROW, 50' Temp. ROW**

For onscreen display:  
Scale bar to be 4 inches (102mm wide)  
Viewing distance is 927 inches (20m)

Atlantic Coast Pipeline<sup>®</sup>

---

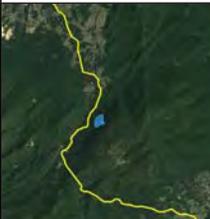
ANST 06

Little Ravens Roost A

---

● Viewpoint Location     ● Project Area

---




---

Easting Position (UTM - Zone 17):	<b>2230807.3</b>
Northing Position (UTM - Zone 17):	<b>13782727.6</b>
Elevation of Photopoint Position (AMSL):	<b>2708.7</b>
Height of Camera Above Ground (R):	<b>5.4</b>
Date of Photography:	<b>10 December 2016 at 12:39 PM</b>
Orientation of View:	<b>WNW</b>
Horizontal Field of View:	<b>124°</b>
Vertical Field of View:	<b>55°</b>

---

NOTES:  
Viewpoint location has been terrain aligned using 1/8 and 1/3 arc degrees terrain, sourced from USGS and with a camera mounted gps unit.  
Heights are above mean sea level.  
Projection/Zone/Datum:  
UTM ZONE 17

---

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**ANST 06 - Little Ravens Roost A, Looking West-Northwest - Existing View**



**ANST 06 - Little Ravens Roost A, Looking West-Northwest - Proposed View: 75' Permanent ROW, 50' Temp. ROW (5 Year Tree Growth)**

For onscreen display:  
Scale bar to be 4 inches (102.6mm wide)  
Viewing distance is 937 inches (23.8m)

Atlantic Coast Pipeline<sup>®</sup>

---

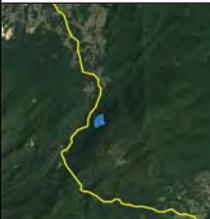
ANST 06

Little Ravens Roost A

---

● Viewpoint Location    ● Project Area

---




---

Easting Position (UTM - Zone 17):	<b>2230807.3</b>
Northing Position (UTM - Zone 17):	<b>13782727.6</b>
Elevation of Photopoint Position (AMSL):	<b>2708.7</b>
Height of Camera Above Ground (R):	<b>5.4</b>
Date of Photography:	<b>10 December 2016 at 12:39 PM</b>
Orientation of View:	<b>WNW</b>
Horizontal Field of View:	<b>124°</b>
Vertical Field of View:	<b>55°</b>

---

NOTES:  
Viewpoint location has been terrain aligned using 1/8 and 1/3 arc degrees terrain, sourced from USGS and with a camera mounted 5.4m high.  
Heights are above mean sea level.  
Projection/Zone/Datum:  
UTM ZONE 17

---

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DATE 05 January 2017	SHEET 21
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**ANST 06 - Little Ravens Roost A, Looking West-Northwest - Existing View**



**ANST 06 - Little Ravens Roost A, Looking West-Northwest - Proposed View: 75' Permanent ROW, 50' Temp. ROW (15-20 Year Tree Growth)**

For onscreen display:  
Scale bar to be 4 inches (102.5mm wide)  
Viewing distance is 307 inches (7.8m)

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---

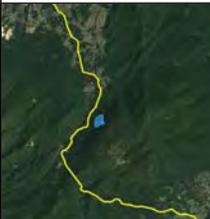
ANST 06

Little Ravens Roost A

---

● Viewpoint Location     ● Project Area

---




---

Easting Position (UTM - Zone 17):	<b>2230807.3</b>
Northing Position (UTM - Zone 17):	<b>13782727.6</b>
Elevation of Photopoint Position (AMSL):	<b>2708.7</b>
Height of Camera Above Ground (R):	<b>5.4</b>
Date of Photography:	<b>10 December 2016 at 12:39 PM</b>
Orientation of View:	<b>WNW</b>
Horizontal Field of View:	<b>124°</b>
Vertical Field of View:	<b>55°</b>

---

NOTES:  
Viewpoint location has been terrain aligned using 1/8 and 1/3 arc degrees terrain, sourced from USGS and with a camera mounted gps unit.  
Heights are above mean sea level.  
Projection/Zone/Datum:  
UTM ZONE 17

---

Photo Simulation Created Using  
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**ANST 07 - Sherando Valley B, Looking North - Existing View**



**ANST 07 - Sherando Valley B, Looking North - Proposed View: 75' Permanent ROW, 50' Temp. ROW**

For onscreen display:  
Scale bar to be 4 inches (102.6mm wide)  
Viewing distance is 937 inches (23.9m)

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---

ANST 07

Sherando Valley B

---

● Viewpoint Location     ● Project Area

---



---

Easting Position (UTM - Zone 17):	<b>2226843.8</b>
Northing Position (UTM - Zone 17):	<b>13778401.3</b>
Elevation of Photograph Position (AMSL):	<b>2721.5</b>
Height of Camera Above Ground (R):	<b>5.4</b>
Date of Photography:	<b>1 December 2016 at 09:29 PM</b>
Orientation of View:	<b>N</b>
Horizontal Field of View:	<b>124°</b>
Vertical Field of View:	<b>55°</b>

---

NOTES:  
Viewpoint location has been terrain aligned using 1/8 and 1/3 arc degree terrain, sourced from USGS and with a camera mounted gps unit.  
Heights are above mean sea level.  
Projection/Zone/Datum:  
UTM ZONE 17

---

Photo Simulation Created Using  
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**ANST 07 - Sherando Valley B, Looking North - Existing View**



**ANST 07 - Sherando Valley B, Looking North - Indicative Overlay: 75' Permanent ROW, 50' Temp. ROW**

For onscreen display:  
Scale bar to be 4 inches (102.6mm wide)  
Viewing distance is 937 inches (23.8m)

Atlantic Coast Pipeline<sup>®</sup>

---

ANST 07

Sherando Valley B

---

● Viewpoint Location     ● Project Area

---




---

Easting Position (UTM - Zone 17):	2226843.8
Northing Position (UTM - Zone 17):	13778401.3
Elevation of Photograph Position (AMSL):	2721.5
Height of Camera Above Ground (R):	5.4
Date of Photography:	1 December 2016 at 09:29 PM
Orientation of View:	N
Horizontal Field of View:	124°
Vertical Field of View:	55°

---

**NOTES:**  
 Viewpoint location has been terrain aligned using 1/8 and 1/3 arc degree terrain, sourced from USGS and with a camera mounted gps unit.  
 Heights are above mean sea level.  
 Projection/Zone/Datum:  
 UTM ZONE 17

---

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**ANST 07 - Sherando Valley B, Looking North - Existing View**



**ANST 07 - Sherando Valley B, Looking North - Proposed View: 75' Permanent ROW, 50' Temp. ROW (5 Year Tree Growth)**

For onscreen display:  
Scale bar to be 4 inches (102.6mm wide)  
Viewing distance is 937 inches (23.8m)

Atlantic  
Coast  
Pipeline<sup>®</sup>

---

ANST 07

Sherando Valley B

---

● Viewpoint Location    ● Project Area

---



---

Easting Position (UTM - Zone 17):	<b>2226843.8</b>
Northing Position (UTM - Zone 17):	<b>13778401.3</b>
Elevation of Photograph Position (AMSL):	<b>2721.5</b>
Height of Camera Above Ground (R):	<b>5.4</b>
Date of Photography:	<b>10 December 2016 at 09:29 PM</b>
Orientation of View:	<b>N</b>
Horizontal Field of View:	<b>124°</b>
Vertical Field of View:	<b>55°</b>

---

NOTES:  
Viewpoint location has been terrain aligned using 1/8 and 1/3 arc degree terrain, sourced from USGS and with a camera mounted gps unit. Heights are above mean sea level.  
Projection/Zone/Datum:  
UTM ZONE 17

---

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**ANST 07 - Sherando Valley B, Looking North - Existing View**



**ANST 07 - Sherando Valley B, Looking North - Proposed View: 75' Permanent ROW, 50' Temp. ROW (15-20 Year Tree Growth)**

For onscreen display.  
Scale bar to be 4 inches (102.6mm wide)  
Viewing distance is 937 inches (23.9m)

Atlantic  
Coast  
Pipeline<sup>®</sup>

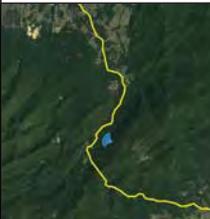
---

ANST 07

Sherando Valley B

---

● Viewpoint Location   
 ● Project Area




---

Easting Position (UTM - Zone 17):	2226843.8
Northing Position (UTM - Zone 17):	13778401.3
Elevation of Photograph Position (AMSL):	2721.5
Height of Camera Above Ground (R):	5.4
Date of Photography:	10 December 2016 at 09:29 PM
Orientation of View:	N
Horizontal Field of View:	124°
Vertical Field of View:	55°

---

**NOTES:**  
 Viewpoint location has been terrain aligned using 1/8 and 1/3 arc degrees terrain, sourced from USGS and with a camera mounted gps unit.  
 Heights are above mean sea level.  
 Projection/Zone/Datum:  
 UTM ZONE 17

---

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DATE	SHEET
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T-199



**KOP 39 (REVISED) - Three Ridges Overlook (REVISED), Looking Southeast - Existing View**



**KOP 39 (REVISED) - Three Ridges Overlook (REVISED), Looking Southeast - Proposed View: 75' Permanent ROW, 50' Temp. ROW**

For onscreen display:  
Scale bar to be 4 inches (102.6mm wide)  
Viewing distance is 307 inches (7.8m)

Atlantic Coast Pipeline<sup>®</sup>

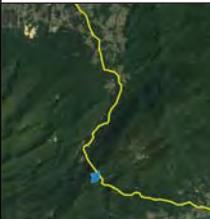
---

**KOP 39 (REVISED)**  
Three Ridges Overlook (REVISED)

---

● Viewpoint Location    ● Project Area

---




---

Existing Position (UTM - Zone 17):	2223337.4
Northing Position (UTM - Zone 17):	13771124.8
Elevation of Photopoint Position (AMSL):	2715.2
Height of Camera Above Ground (ft):	5.4
Date of Photography:	21 November 2016 at 02:41 PM
Orientation of View:	SE
Horizontal Field of View:	124°
Vertical Field of View:	55°

---

NOTES:  
Viewpoint location has been terrain aligned using 1/8 and 1/3 arc degrees terrain, sourced from USGS and with a camera mounted gas unit. Heights are above mean sea level.  
Projection/Zone/Datum:  
UTM ZONE 17

---

Photo Simulation Created Using  
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T-200



**KOP 39 (REVISED) - Three Ridges Overlook (REVISED), Looking Southeast - Existing View**



**KOP 39 (REVISED) - Three Ridges Overlook (REVISED), Looking Southeast - Proposed View: 75' Permanent ROW, 50' Temp. ROW (5 Year Tree Growth)**

For onscreen display:  
Scale bar to be 4 inches (102.6mm wide)  
Viewing distance is 397 inches (10.1m)

Atlantic Coast Pipeline<sup>®</sup>

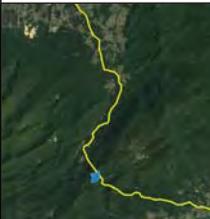
---

KOP 39 (REVISED)  
Three Ridges Overlook (REVISED)

---

● Viewpoint Location    ● Project Area

---




---

Existing Position (UTM - Zone 17):	2223337.4
Northing Position (UTM - Zone 17):	13771124.8
Elevation of Photopoint Position (AMSL):	2715.2
Height of Camera Above Ground (ft):	5.4
Date of Photography:	21 November 2016 at 02:41 PM
Orientation of View:	SE
Horizontal Field of View:	124°
Vertical Field of View:	55°

---

NOTES:  
Viewpoint location has been terrain aligned using 1/8 and 1/3 arc degrees terrain, sourced from USGS and with a camera mounted gas unit.  
Heights are above mean sea level.  
Projection/Zone/Datum:  
UTM ZONE 17

---

Photo Simulation Created Using  
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**KOP 39 (REVISED) - Three Ridges Overlook (REVISED), Looking Southeast - Existing View**



**KOP 39 (REVISED) - Three Ridges Overlook (REVISED), Looking Southeast - Proposed View: 75' Permanent ROW, 50' Temp. ROW (15-20 Year Tree Growth)**

For onscreen display:  
Scale bar to be 4 inches (102.6mm wide)  
Viewing distance is 307 inches (7.8m)

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---

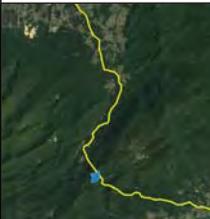
KOP 39 (REVISED)

Three Ridges Overlook (REVISED)

---

● Viewpoint Location    ● Project Area

---




---

Existing Position (UTM - Zone 17):	2223337.4
Northing Position (UTM - Zone 17):	13771124.8
Elevation of Photopoint Position (AMSL):	2715.2
Height of Camera Above Ground (ft):	5.4
Date of Photography:	21 November 2016 at 02:41 PM
Orientation of View:	SE
Horizontal Field of View:	124°
Vertical Field of View:	55°

---

NOTES:  
Viewpoint location has been terrain aligned using 15 and 13 arc degrees terrain, sourced from USGS and with a camera mounted gas unit. Heights are above mean sea level.  
Projection/Zone/Datum:  
UTM ZONE 17

---

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**KOP 39 (REVISED) - Three Ridges Overlook (REVISED), Looking Southeast - Existing View**



**KOP 39 (REVISED) - Three Ridges Overlook (REVISED), Looking Southeast - Proposed View: 75' Permanent ROW, 50' Temp. ROW (15-20 Year Tree Growth with indicative restoration)**

For onscreen display:  
Scale bar to be 4 inches (102.6mm wide)  
Viewing distance is 307 inches (7.8m)

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---

KOP 39 (REVISED)  
Three Ridges Overlook (REVISED)

---

● Viewpoint Location    ● Project Area

---



---

Easting Position (UTM - Zone 17):	2223337.4
Northing Position (UTM - Zone 17):	1377124.8
Elevation of Photopoint Position (AMSL):	2715.2
Height of Camera Above Ground (ft):	5.4
Date of Photography:	21 November 2016 at 02:41 PM
Orientation of View:	SE
Horizontal Field of View:	124°
Vertical Field of View:	55°

---

NOTES:  
Viewpoint location has been terrain aligned using 15 and 13 arc degrees terrain, sourced from USGS and with a camera mounted 5.4 feet.  
Heights are above mean sea level.  
Projection/Zone/Datum:  
UTM ZONE 17

---

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**ANST 08a - Three Ridges North Overlook, Looking South-Southeast - Existing View**



**ANST 08a - Three Ridges North Overlook, Looking South-Southeast - Proposed View: 75' Permanent ROW, 50' Temp. ROW**

For onscreen display:  
Scale bar to be 4 inches (102.6mm wide)  
Viewing distance is 307 inches (7.8m)

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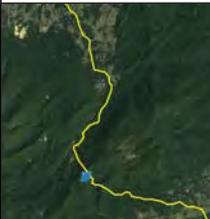
---

ANST 08a

Three Ridges North Overlook

---

● Viewpoint Location     ● Project Area



---

Easting Position (UTM - Zone 17):	2223364.0
Northing Position (UTM - Zone 17):	1377174.9
Elevation of Photograph Position (AMSL):	2715.2
Height of Camera Above Ground (ft):	5.4
Date of Photography:	21 November 2016 at 02:33 PM
Orientation of View:	85E
Horizontal Field of View:	124°
Vertical Field of View:	55°

---

NOTES:  
Viewpoint location has been terrain aligned using 1/8 and 1/3 arc degrees terrain, sourced from USGS and with a camera mounted gps unit. Heights are above mean sea level.  
Projection/Zone/Datum:  
UTM ZONE 17

---

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**ANST 08a - Three Ridges North Overlook, Looking South-Southeast - Existing View**



**ANST 08a - Three Ridges North Overlook, Looking South-Southeast - Proposed View: 75' Permanent ROW, 50' Temp. ROW (5 Year Tree Growth)**

For onscreen display.  
Scale bar to be 4 inches (102.6mm wide)  
Viewing distance is 307 inches (7.8m)

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---

ANST 08a

Three Ridges North Overlook

---

● Viewpoint Location    ● Project Area



---

Easting Position (UTM - Zone 17):	2223364.0
Northing Position (UTM - Zone 17):	13771174.9
Elevation of Photograph Position (AMSL):	2715.2
Height of Camera Above Ground (ft):	5.4
Date of Photography:	21 November 2016 at 02:33 PM
Orientation of View:	85E
Horizontal Field of View:	124°
Vertical Field of View:	55°

---

NOTES:  
Viewpoint location has been terrain aligned using 15 and 13 arc degrees terrain, sourced from USGS and with a camera mounted gps unit.  
Heights are above mean sea level.  
Projection/Zone/Datum:  
UTM ZONE 17

---

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**ANST 08a - Three Ridges North Overlook, Looking South-Southeast - Existing View**



**ANST 08a - Three Ridges North Overlook, Looking South-Southeast - Proposed View: 75' Permanent ROW, 50' Temp. ROW (15-20 Year Tree Growth)**

For onscreen display:  
Scale bar to be 4 inches (102.6mm wide)  
Viewing distance is 307 inches (7.8m)

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---

ANST 08a

Three Ridges North Overlook

---

● Viewpoint Location     ● Project Area



---

Easting Position (UTM - Zone 17):	<b>2223364.0</b>
Northing Position (UTM - Zone 17):	<b>1377174.9</b>
Elevation of Photograph Position (AMSL):	<b>2715.2</b>
Height of Camera Above Ground (ft):	<b>5.4</b>
Date of Photography:	<b>21 November 2016 at 02:33 PM</b>
Orientation of View:	<b>85E</b>
Horizontal Field of View:	<b>124°</b>
Vertical Field of View:	<b>55°</b>

---

NOTES:  
Viewpoint location has been terrain aligned using 1/8 and 1/3 arc degrees terrain, sourced from USGS and with a camera mounted gps unit.  
Heights are above mean sea level.  
Projection/Zone/Datum:  
UTM ZONE 17

---

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**ANST 08a - Three Ridges North Overlook, Looking South-Southeast - Existing View**



**ANST 08a - Three Ridges North Overlook, Looking South-Southeast - Proposed View: 75' Permanent ROW, 50' Temp. ROW (15-20 Year Tree Growth with indicative restoration)**

For onscreen display:  
Scale bar to be 4 inches (102.6mm wide)  
Viewing distance is 307 inches (7.8m)

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---

**ANST 08a**  
Three Ridges North Overlook

---

● Viewpoint Location    ● Project Area

---

Easting Position (UTM - Zone 17):	2223364.0
Northing Position (UTM - Zone 17):	1377174.9
Elevation of Photograph Position (AMSL):	2715.2
Height of Camera Above Ground (ft):	5.4
Date of Photography:	21 November 2016 at 02:23 PM
Orientation of View:	85E
Horizontal Field of View:	124°
Vertical Field of View:	55°

---

NOTES:  
Viewpoint location has been terrain aligned using 1/8 and 1/3 arc degrees terrain, sourced from USGS and with a camera mounted gps unit.  
Heights are above mean sea level.  
Projection/Zone/Datum:  
UTM ZONE 17

---

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**ANST 08b - Three Ridges South Overlook, Looking East-Southeast - Existing View**



**ANST 08b - Three Ridges South Overlook, Looking East-Southeast - Proposed View: 75' Permanent ROW, 50' Temp. ROW**

For onscreen display.  
Scale bar to be 4 inches (102.6mm wide)  
Viewing distance is 307 inches (7.8m)

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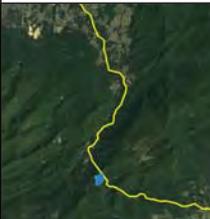
ANST 08b

Three Ridges South Overlook

---

● Viewpoint Location     ● Project Area

---




---

Easting Position (UTM - Zone 17):	2223166.6
Northing Position (UTM - Zone 17):	13770395.1
Elevation of Photograph Position (AMSL):	2706.0
Height of Camera Above Ground (ft):	5.4
Date of Photography:	21 November 2016 at 04:45 PM
Orientation of View:	ESE
Horizontal Field of View:	124°
Vertical Field of View:	55°

---

NOTES:  
Viewpoint location has been terrain aligned using 1/8 and 1/3 arc degrees terrain, sourced from USGS and with a camera mounted gas unit. Heights are above mean sea level. Projection/Zone/Datum: UTM ZONE 17

---

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**ANST 08b - Three Ridges South Overlook, Looking East-Southeast - Existing View**



**ANST 08b - Three Ridges South Overlook, Looking East-Southeast - Proposed View: 75' Permanent ROW, 50' Temp. ROW (5 Year Tree Growth)**

For onscreen display:  
Scale bar to be 4 inches (102.6mm wide)  
Viewing distance is 307 inches (7.8m)

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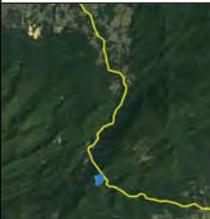
---

ANST 08b

Three Ridges South Overlook

---

● Viewpoint Location     ● Project Area



---

Easting Position (UTM - Zone 17):	2223166.6
Northing Position (UTM - Zone 17):	13770395.1
Elevation of Photograph Position (AMSL):	2706.0
Height of Camera Above Ground (ft):	5.4
Date of Photography:	21 November 2016 at 04:45 PM
Orientation of View:	ESE
Horizontal Field of View:	124°
Vertical Field of View:	55°

---

NOTES:  
Viewpoint location has been terrain aligned using 1/8 and 1/3 arc degrees terrain, sourced from USGS and with a camera mounted gas unit. Heights are above mean sea level. Projection/Zone/Datum: UTM ZONE 17

---

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**ANST 08b - Three Ridges South Overlook, Looking East-Southeast - Existing View**



**ANST 08b - Three Ridges South Overlook, Looking East-Southeast - Proposed View: 75' Permanent ROW, 50' Temp. ROW (15-20 Year Tree Growth)**

For onscreen display:  
Scale bar to be 4 inches (102.6mm wide)  
Viewing distance is 307 inches (7.8m)

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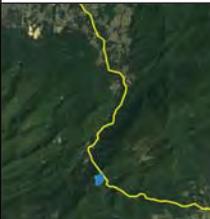
---

ANST 08b

Three Ridges South Overlook

---

● Viewpoint Location    ● Project Area




---

Easting Position (UTM - Zone 17):	2223166.6
Northing Position (UTM - Zone 17):	13770395.1
Elevation of Photograph Position (AMSL):	2706.0
Height of Camera Above Ground (ft):	5.4
Date of Photography:	21 November 2016 at 04:45 PM
Orientation of View:	ESE
Horizontal Field of View:	124°
Vertical Field of View:	55°

---

NOTES:  
Viewpoint location has been terrain aligned using 1/8 and 1/3 arc degrees terrain, sourced from USGS and with a camera mounted gps unit. Heights are above mean sea level.  
Projection/Zone/Datum:  
UTM ZONE 17

---

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**ANST 08b - Three Ridges South Overlook, Looking East-Southeast - Existing View**



**ANST 08b - Three Ridges South Overlook, Looking East-Southeast - Proposed View: 75' Permanent ROW, 50' Temp. ROW (15-20 Year Tree Growth with indicative restoration)**

For onscreen display:  
Scale bar to be 4 inches (102.6mm wide)  
Viewing distance is 307 inches (7.8m)

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---

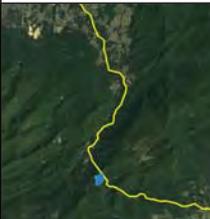
ANST 08b

Three Ridges South Overlook

---

● Viewpoint Location     ● Project Area

---




---

Easting Position (UTM - Zone 17):	2223166.6
Northing Position (UTM - Zone 17):	13770395.1
Elevation of Photopoint Position (AMSL):	2706.0
Height of Camera Above Ground (ft):	5.4
Date of Photography:	21 November 2016 at 04:45 PM
Orientation of View:	ESE
Horizontal Field of View:	124°
Vertical Field of View:	55°

---

NOTES:  
Viewpoint location has been terrain aligned using 1/8 and 1/3 arc degrees terrain, sourced from USGS and with a camera mounted gas unit. Heights are above mean sea level. Projection/Zone/Datum: UTM ZONE 17

---

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SSF 01 - Greenbrier River Trail, Looking South - Existing View



SSF 01 - Greenbrier River Trail, Looking South - Proposed View: 75' Permanent ROW, 50' Temp. ROW

For onscreen display:  
Scale bar to be 4 inches (102.6mm wide)  
Viewing distance is 307 inches (7.8m)

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---

**SSF 01**  
Greenbrier River Trail

---

● Viewpoint Location     ● Project Area

---




---

Existing Position (UTM - Zone 17):	1936156.7
Northing Position (UTM - Zone 17):	13922577.1
Elevation of Photopoint Position (AMSL):	2286.4
Height of Camera Above Ground (ft):	5.4
Date of Photography:	22 November 2016 at 11:07 AM
Orientation of View:	S
Horizontal Field of View:	124°
Vertical Field of View:	55°

---

NOTES:  
Viewpoint location has been terrain aligned using 1/8 and 1/3 arc degrees terrain, sourced from USGS and with a camera mounted gas unit.  
Heights are above mean sea level.  
Projection/Zone/Datum:  
UTM ZONE 17

---

Photo Simulation Created Using  
TrueView<sup>™</sup> Technology  
(Patent No.: US 8,184,946 B2)  
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**SSF 01 - Greenbrier River Trail, Looking South - Existing View**



**SSF 01 - Greenbrier River Trail, Looking South - Proposed View: 75' Permanent ROW, 50' Temp. ROW (5 Year Tree Growth)**

For onscreen display:  
Scale bar to be 4 inches (102.5mm wide)  
Viewing distance is 307 inches (7.8m)

Atlantic Coast Pipeline<sup>®</sup>

---

**SSF 01**  
Greenbrier River Trail

---

● Viewpoint Location     ● Project Area

---




---

Existing Position (UTM - Zone 17):	1936156.7
Northing Position (UTM - Zone 17):	13922577.1
Elevation of Photopoint Position (AMSL):	2286.4
Height of Camera Above Ground (ft):	5.4
Date of Photography:	22 November 2016 at 11:07 AM
Orientation of View:	S
Horizontal Field of View:	124°
Vertical Field of View:	55°

---

NOTES:  
Viewpoint location has been terrain aligned using 1/8 and 1/3 arc degrees terrain, sourced from USGS and with a camera mounted gas unit.  
Heights are above mean sea level.  
Projection/Zone/Datum:  
UTM ZONE 17

---

Photo Simulation Created Using  
TrueView<sup>™</sup> Technology  
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SSF 01 - Greenbrier River Trail, Looking South - Existing View



SSF 01 - Greenbrier River Trail, Looking South - Proposed View: 75' Permanent ROW, 50' Temp. ROW (15-20 Year Tree Growth)

For onscreen display:  
Scale bar to be 4 inches (102.6mm wide)  
Viewing distance is 307 inches (7.8m)

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---

**SSF 01**  
Greenbrier River Trail

---

● Viewpoint Location   
 ● Project Area

---




---

Easting Position (UTM - Zone 17):	1936156.7
Northing Position (UTM - Zone 17):	13922577.1
Elevation of Photopoint Position (AMSL):	2286.4
Height of Camera Above Ground (ft):	5.4
Date of Photography:	22 November 2016 at 11:07 AM
Orientation of View:	S
Horizontal Field of View:	124°
Vertical Field of View:	55°

---

NOTES:  
Viewpoint location has been terrain aligned using 1/8 and 1/3 arc degrees terrain, sourced from USGS and with a camera mounted gps unit.  
Heights are above mean sea level.  
Projection/Zone/Datum:  
UTM ZONE 17

---

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**SSF 02 - Public Road 1/8, Looking North-Northwest - Existing View**



**SSF 02 - Public Road 1/8, Looking North-Northwest - Indicative Overlay: 75' Permanent ROW, 50' Temp. ROW**

For onscreen display:  
Scale bar to be 4 inches (102.6mm wide)  
Viewing distance is 307 inches (7.8m)

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---

SSF 02  
Public Road 1/8

---

● Viewpoint Location    ● Project Area

---




---

Easting Position (UTM - Zone 17):	1939976.0
Northing Position (UTM - Zone 17):	13919490.1
Elevation of Photopoint Position (AMSL):	2702.1
Height of Camera Above Ground (ft):	5.4
Date of Photography:	22 November 2016 at 11:39 AM
Orientation of View:	NNW
Horizontal Field of View:	124°
Vertical Field of View:	55°

---

NOTES:  
Viewpoint location has been terrain aligned using 1/8 and 1/3 arc degrees terrain, sourced from USGS and with a camera mounted gps unit. Heights are above mean sea level.  
Projection/Zone/Datum:  
UTM ZONE 17

---

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SSF 03 - Laurel Run Road, Looking South - Existing View



SSF 03 - Laurel Run Road, Looking South - Proposed View: No View of ROW

For onscreen display:  
 Scale bar to be 4 inches (101.6mm wide)  
 Viewing distance is 307 inches (7.8m)

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---

SSF 03  
Laurel Run Road

---

● Viewpoint Location   
 ● Project Area

---




---

Easting Position (UTM - Zone 17):	1944055.6
Northing Position (UTM - Zone 17):	13922340.1
Elevation of Photopoint Position (AMSL):	2542.3
Height of Camera Above Ground (ft):	5.4
Date of Photography:	23 November 2016 at 10:38 AM
Orientation of View:	S
Horizontal Field of View:	124°
Vertical Field of View:	55°

---

**NOTES:**  
 Viewpoint location has been terrain aligned using 1/8 and 1/3 arc degrees terrain, sourced from USGS and with a camera mounted gps unit.  
 Heights are above mean sea level.  
 Projection/Zone/Datum:  
 UTM ZONE 17

---

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**SSF 04 - Public Loop Road 1/10, Looking North - Existing View**



**SSF 04 - Public Loop Road 1/10, Looking North - Proposed View: 75' Permanent ROW, 50' Temp. ROW**

For onscreen display:  
Scale bar to be 4 inches (102mm wide)  
Viewing distance is 307 inches (500 cm)

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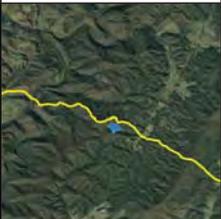
---

**SSF 04**  
Public Loop Road 1/10

---

● Viewpoint Location    ● Project Area

---




---

Easting Position (UTM - Zone 17):	1948003.5
Northing Position (UTM - Zone 17):	13917023.2
Elevation of Photopoint Position (AMSL):	3135.2
Height of Camera Above Ground (ft):	5.4
Date of Photography:	22 November 2016 at 12:41 PM
Horizontal Field of View:	N
Vertical Field of View:	124°
Vertical Field of View:	55°

---

NOTES:  
Viewpoint location has been terrain aligned using 1/8 and 1/3 arc degrees terrain, sourced from USGS and with a camera mounted gas unit.  
Heights are above mean sea level.  
Projection/Zone/Datum:  
UTM ZONE 17

---

Photo Simulation Created Using  
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SSF 04 - Public Loop Road 1/10, Looking North - Existing View



SSF 04 - Public Loop Road 1/10, Looking North - Indicative Overlay: 75' Permanent ROW, 50' Temp. ROW

For onscreen display:  
Scale bar to be 4 inches (102.6mm wide)  
Viewing distance is 307 inches (7.8m)

Atlantic  
Coast  
Pipeline<sup>®</sup>

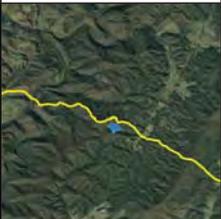
---

**SSF 04**  
Public Loop Road 1/10

---

● Viewpoint Location     
 ● Project Area

---




---

Easting Position (UTM - Zone 17):	1948003.5
Northing Position (UTM - Zone 17):	13917023.2
Elevation of Photopoint Position (AMSL):	3135.2
Height of Camera Above Ground (ft):	5.4
Date of Photography:	22 November 2016 at 12:41 PM
Orientation of View:	N
Horizontal Field of View:	124°
Vertical Field of View:	55°

---

**NOTES:**  
 Viewpoint location has been terrain aligned using 1/8 and 1/3 arc degrees terrain, sourced from USGS and with a camera mounted gas unit.  
 Heights are above mean sea level.  
 Projection/Zone/Datum:  
 UTM ZONE 17

---

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**SSF 05 - Existing Allegheny Trail East, Looking East - Existing View**



**SSF 05 - Existing Allegheny Trail East, Looking East - Proposed View: 75' Permanent ROW, 50' Temp. ROW**

For onscreen display:  
Scale bar to be 4 inches (102.6mm wide)  
Viewing distance is 307 inches (7.8m)

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---

**SSF 05**  
Existing Allegheny Trail East

---

● Viewpoint Location    ● Project Area

---




---

Easting Position (UTM - Zone 17):	1948198.9
Northing Position (UTM - Zone 17):	13919252.0
Elevation of Photopoint Position (AMSL):	3177.8
Height of Camera Above Ground (ft):	5.4
Date of Photography:	22 November 2016 at 09:35 PM
Orientation of View:	E
Horizontal Field of View:	124°
Vertical Field of View:	55°

---

**NOTES:**  
 Viewpoint location has been terrain aligned using 1% and 1/3 arc degrees terrain, sourced from USGS and with a camera mounted gas unit.  
 Heights are above mean sea level.  
 Projection/Zone/Datum:  
 UTM ZONE 17

---

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**SSF 05 - Existing Allegheny Trail East, Looking East - Existing View**



**SSF 05 - Existing Allegheny Trail East, Looking East - Proposed View: 75' Permanent ROW, 50' Temp. ROW (5 Year Tree Growth)**

For onscreen display:  
Scale bar to be 4 inches (102.6mm wide)  
Viewing distance is 307 inches (7.8m)

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---

**SSF 05**  
Existing Allegheny Trail East

---

● Viewpoint Location    ● Project Area

---




---

Easting Position (UTM - Zone 17):	1948198.9
Northing Position (UTM - Zone 17):	13919252.0
Elevation of Photopoint Position (AMSL):	3177.8
Height of Camera Above Ground (ft):	5.4
Date of Photography:	22 November 2016 at 09:35 PM
Orientation of View:	E
Horizontal Field of View:	124°
Vertical Field of View:	55°

---

NOTES:  
Viewpoint location has been terrain aligned using 15 and 1/3 arc degrees terrain, sourced from USGS and with a camera mounted 5.4 feet above ground level. Heights are above mean sea level.  
Projection/Zone/Datum:  
UTM ZONE 17

---

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**SSF 05 - Existing Allegheny Trail East, Looking East - Existing View**



**SSF 05 - Existing Allegheny Trail East, Looking East - Proposed View: 75' Permanent ROW, 50' Temp. ROW (15-20 Year Tree Growth)**

For onscreen display:  
Scale bar to be 4 inches (102.6mm wide)  
Viewing distance is 307 inches (7.8m)

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---

**SSF 05**  
Existing Allegheny Trail East

---

● Viewpoint Location   
 ● Project Area

---




---

Easting Position (UTM - Zone 17):	1948198.9
Northing Position (UTM - Zone 17):	13919252.0
Elevation of Photopoint Position (AMSL):	3177.8
Height of Camera Above Ground (ft):	5.4
Date of Photography:	22 November 2016 at 09:35 PM
Orientation of View:	E
Horizontal Field of View:	124°
Vertical Field of View:	55°

---

NOTES:  
Viewpoint location has been terrain aligned using 1% and 1/3 arc degrees terrain, sourced from USGS and with a camera mounted 5.4 feet.  
Heights are above mean sea level.  
Projection/Zone/Datum:  
UTM ZONE 17

---

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**SSF 06 - State Route 30, Looking South-Southeast - Existing View**



**SSF 06 - State Route 30, Looking South-Southeast - Proposed View: 75' Permanent ROW, 50' Temp. ROW**

For onscreen display:  
Scale bar to be 4 inches (102.6mm wide)  
Viewing distance is 307 inches (7.8m)

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---

**SSF 06**  
State Route 30

---

● Viewpoint Location     ● Project Area

---



---

Easting Position (UTM - Zone 17):	1952812.9
Northing Position (UTM - Zone 17):	13917022.0
Elevation of Photopoint (AMSL):	2584.6
Height of Camera Above Ground (ft):	5.4
Date of Photography:	22 November 2016 at 12:14 PM
Orientation of View:	85E
Horizontal Field of View:	124°
Vertical Field of View:	55°

---

**NOTES:**  
Viewpoint location has been terrain aligned using 1/8 and 1/3 arc degrees terrain, sourced from USGS and with a camera mounted gps unit. Heights are above mean sea level. Projection/Zone/Datum: UTM ZONE 17

---

Photo Simulation Created Using  
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**SSF 06 - State Route 30, Looking South-Southeast - Existing View**



**SSF 06 - State Route 30, Looking South-Southeast - Proposed View: 75' Permanent ROW, 50' Temp. ROW (5 Year Tree Growth)**

For onscreen display:  
Scale bar to be 4 inches (102.6mm wide)  
Viewing distance is 307 inches (7.8m)

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---

SSF 06

State Route 30

---

● Viewpoint Location     ● Project Area

---




---

Easting Position (UTM - Zone 17):	1952812.9
Northing Position (UTM - Zone 17):	13917022.0
Elevation of Photopoint Position (AMSL):	2584.6
Height of Camera Above Ground (ft):	5.4
Date of Photography:	22 November 2016 at 12:14 PM
Orientation of View:	85E
Horizontal Field of View:	124°
Vertical Field of View:	55°

---

NOTES:

Viewpoint location has been terrain aligned using 1/8 and 1/3 arc degrees terrain, sourced from USGS and with a camera mounted gps unit. Heights are above mean sea level. Projection/Zone/Datum: UTM ZONE 17

---

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**SSF 06 - State Route 30, Looking South-Southeast - Existing View**



**SSF 06 - State Route 30, Looking South-Southeast - Proposed View: 75' Permanent ROW, 50' Temp. ROW (15-20 Year Tree Growth)**

For onscreen display.  
Scale bar to be 4 inches (102.6mm wide)  
Viewing distance is 307 inches (7.8m)

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---

SSF 06

State Route 30

---

● Viewpoint Location     ● Project Area

---




---

Easting Position (UTM - Zone 17):	1952812.9
Northing Position (UTM - Zone 17):	13917022.0
Elevation of Photopoint Position (AMSL):	2584.6
Height of Camera Above Ground (ft):	5.4
Date of Photography:	22 November 2016 at 12:14 PM
Orientation of View:	85E
Horizontal Field of View:	124°
Vertical Field of View:	55°

---

NOTES:

Viewpoint location has been terrain aligned using 1/8 and 1/3 arc degrees terrain, sourced from USGS and with a camera mounted gps unit. Heights are above mean sea level. Projection/Zone/Datum: UTM ZONE 17

---

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SSF 07 - Michael Ridge, Looking Southeast - Existing View



SSF 07 - Michael Ridge, Looking Southeast - Indicative Overlay: 75' Permanent ROW, 50' Temp. ROW

For onscreen display:  
Scale bar to be 4 inches (102.5mm wide)  
Viewing distance is 307 inches (50.0m)

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SSF 07  
Michael Ridge

Viewpoint Location    Project Area

Easting Position (UTM - Zone 17):	1959196.6
Northing Position (UTM - Zone 17):	13911313.0
Elevation of Photopoint Position (AMSL):	3556.8
Height of Camera Above Ground (ft):	5.4
Date of Photography:	22 November 2016 at 09:30 PM
Orientation of View:	SE
Horizontal Field of View:	124°
Vertical Field of View:	55°

NOTES:  
Viewpoint location has been terrain aligned using 1% and 1/3 arc degrees terrain, sourced from USGS and with a camera mounted 5.4 feet above ground level.  
Heights are above mean sea level.  
Projection/Zone/Datum:  
UTM ZONE 17

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**SSF 08 - State Route 96, Looking Northwest - Existing View**



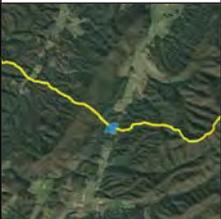
**SSF 08 - State Route 96, Looking Northwest - Proposed View: 75' Permanent ROW, 50' Temp. ROW**

For onscreen display:  
Scale bar to be 4 inches (102.5mm wide)  
Viewing distance is 307 inches (80m)

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**SSF 08**  
State Route 96

● Viewpoint Location
● Project Area



Easting Position (UTM - Zone 17):	1964416.9
Northing Position (UTM - Zone 17):	13909400.8
Elevation of Photograph Position (AMSL):	2695.5
Height of Camera Above Ground (ft):	5.4
Date of Photography:	23 November 2016 at 10:02:28
Orientation of View:	NW
Horizontal Field of View:	124°
Vertical Field of View:	55°

**NOTES:**  
Viewpoint location has been terrain aligned using 1/8 and 1/3 arc degrees terrain, sourced from USGS and with a camera mounted gps unit.  
Heights are above mean sea level.  
Projection/Zone/Datum:  
UTM ZONE 17

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**SSF 08 - State Route 96, Looking Northwest - Existing View**



**SSF 08 - State Route 96, Looking Northwest - Proposed View: 75' Permanent ROW, 50' Temp. ROW (5 Year Tree Growth)**

For onscreen display:  
Scale bar to be 4 inches (102.5mm wide)  
Viewing distance is 307 inches (50m)

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---

SSF 08

State Route 96

---

● Viewpoint Location    ● Project Area

---




---

Easting Position (UTM - Zone 17):	1964416.9
Northing Position (UTM - Zone 17):	13909400.8
Elevation of Photograph Position (AMSL):	2695.5
Height of Camera Above Ground (ft):	5.4
Date of Photography:	23 November 2016 at 10:02:28
Orientation of View:	NW
Horizontal Field of View:	124°
Vertical Field of View:	55°

---

NOTES:  
Viewpoint location has been terrain aligned using 1/8 and 1/3 arc degrees terrain, sourced from USGS and with a camera mounted gps unit.  
Heights are above mean sea level.  
Projection/Zone/Datum:  
UTM ZONE 17

---

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**SSF 08 - State Route 96, Looking Northwest - Existing View**



**SSF 08 - State Route 96, Looking Northwest - Proposed View: 75' Permanent ROW, 50' Temp. ROW (15-20 Year Tree Growth)**

For onscreen display:  
Scale bar to be 4 inches (102.9mm wide)  
Viewing distance is 307 inches (7.8m)

## Atlantic Coast Pipeline<sup>®</sup>

**SSF 08**  
State Route 96

● Viewpoint Location
● Project Area



Easting Position (UTM - Zone 17):	1964416.9
Northing Position (UTM - Zone 17):	13909400.8
Elevation of Photograph Position (AMSL):	2695.5
Height of Camera Above Ground (ft):	5.4
Date of Photography:	23 November 2016 at 10:02:28
Orientation of View:	NW
Horizontal Field of View:	124°
Vertical Field of View:	55°

NOTES:  
Viewpoint location has been terrain aligned using 1% and 1/3 arc degrees terrain, sourced from USGS and with a camera mounted 5.4 feet.  
Heights are above mean sea level.  
Projection/Zone/Datum:  
UTM ZONE 17

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**KOP38 - Raven's Roost, Blue Ridge Parkway Overlook, Looking Northwest - Existing View**



**KOP38 - Raven's Roost, Blue Ridge Parkway Overlook, Looking Northwest - Proposed View 50' Permanent ROW (5 Year Tree Growth)**

For onscreen display:  
Scale bar to be 4 inches (102.5mm wide)  
Viewing distance is 927 inches (20m)

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---

**Viewpoint KOP38**  
Raven's Roost,  
Blue Ridge Parkway Overlook

● Viewpoint Location   ● Pipeline Right-of-Way

NOTE: The above pipeline ROW alignment is shown as a yellow line for visual purposes only and does not represent the actual width of the pipeline ROW.

Easting Position (UTM - Zone 17):	2230689.4
Northing Position (UTM - Zone 17):	13780972.7
Elevation of Photopoint Position (NAVD83):	3188.8
Height of Camera Above Ground (ft):	5.4
Date of Photography:	6 November 2015 at 02:55 PM
Orientation of View:	NW
Horizontal Field of View:	124°
Vertical Field of View:	55°

---

NOTES:  
Viewpoint locations have been surveyed by:  
J Engineering Sciences  
PO Box 1906, Bluefield, WV 24701  
Heights are above mean sea level.  
Projection/Coordinate:  
UTM ZONE 17, NAD83  
No part of this photostimulation shall be altered in any way.  
Visual assessments should be made from the full size TrueView™ only.

---

Photo Simulation Created Using  
TrueView™ Technology  
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**KOP38 - Raven's Roost, Blue Ridge Parkway Overlook, Looking Northwest - Existing View**



**KOP38 - Raven's Roost, Blue Ridge Parkway Overlook, Looking Northwest - Proposed View 50' Permanent ROW (15/20 Year Tree Growth)**

For onscreen display:  
Scale bar to be 4 inches (102.5mm wide)  
Viewing distance is 927 inches (23.6m)

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Coast  
Pipeline™

---

**Viewpoint KOP38**  
Raven's Roost,  
Blue Ridge Parkway Overlook

● Viewpoint Location   ● Pipeline Right-of-Way

NOTE: The above pipeline ROW alignment is shown as a yellow line for visual purposes only and does not represent the actual width of the pipeline ROW.

Easting Position (UTM - Zone 17):	<b>2230689.4</b>
Northing Position (UTM - Zone 17):	<b>13780972.7</b>
Elevation of Photopoint Position (NAVD83):	<b>3188.8</b>
Height of Camera Above Ground (ft):	<b>5.4</b>
Date of Photography:	<b>6 November 2015 at 02:55 PM</b>
Orientation of View:	<b>NW</b>
Horizontal Field of View:	<b>124°</b>
Vertical Field of View:	<b>55°</b>

---

NOTES:  
Viewpoint locations have been surveyed by:  
J Engineering Sciences  
PO Box 1908, Bluefield, WV 24701  
Heights are above mean sea level.  
Projection/Coordinate:  
UTM ZONE 17, NAD83  
No part of this photostimulation shall be altered in any way.  
Visual assessments should be made from the full size TrueView™ only.

---

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## **APPENDIX U**

**RACIAL, ETHNIC, AND POVERTY STATISTICS FOR CENSUS  
TRACTS WITHIN 1 MILE OF THE ATLANTIC COAST PIPELINE  
AND SUPPLY HEADER PROJECT**

TABLE U-1

## Racial, Ethnic, and Poverty Statistics for Census Tracts Within 1 Mile of the Atlantic Coast Pipeline and Supply Header Project

Project/Location	Total population a	White (%) <sup>a</sup> b	Black or African American (%) <sup>a</sup>	American Indian and Alaska Native (%) <sup>a</sup>	Asian (%) <sup>a</sup>	Native Hawaiian and Other Pacific Islander (%) <sup>a</sup>	Some other race (%) <sup>a</sup>	Two or more races (%) <sup>a</sup>	Hispanic or Latino origin (of any race) (%) <sup>a</sup>	Total Minority Population (%) <sup>a</sup>	Median income (dollars) <sup>a</sup>	Percent Below Poverty Level (%) <sup>a</sup>
<b>United States</b>	314,107,084	73.8	12.6	0.8	5	0.2	4.7	2.9	16.9	26.2	\$26,714	15.6
<b>ATLANTIC COAST PIPELINE</b>												
<b>West Virginia</b>	1,853,881	93.6	3.2	0.2	0.7	0	0.3	2	1.3	6.4	\$22,148	18.1
Harrison	69,069	95.8	1.7	0.4	0.5	0.2	0.1	1.3	1.4	4.2	N/A	N/A
CT 313	2,595	98.3	0.7	0	0	0	0.2	0.8	1	1.7	\$25,184	12.5
CT 314 <sup>c</sup>	2,860	94.7	0	0	1.5	0	0.3	3.5	0.3	5.3	\$20,998	15.5
Lewis	16,412	97.2	0.9	0	0.2	0.1	0	1.7	0.2	2.9	N/A	N/A
CT 9672 <sup>c</sup>	3,549	95.5	0	0	0.3	0	0	4.2	0	4.5	\$19,656	22
CT 9673	3,818	98.7	0.1	0	0	0.5	0	0.7	0	1.3	\$24,754	9.8
CT 9674	2,596	99.2	0	0	0.3	0	0	0.4	0.8	0.7	\$20,677	19.5
Pocahontas <sup>f</sup>	8,710	96.7	1.5	0.1	0	0	0	1.7	0.4	3.3	N/A	N/A
CT 9601.01 <sup>d</sup>	1,186	99.9	0	0	0	0	0.1	0	0.8	0.1	\$23,185	13
CT 9601.02	1,172	93.1	5.5	0	0	0	0	1.4	0	6.9	\$20,815	15.1
CT 9602 <sup>d</sup>	3,800	95.8	1	0	0	0	0	3.2	0.4	4.2	\$17,764	23
Randolph	29,446	97	1.4	0.2	0.3	0.1	0.1	0.9	0.7	3	N/A	N/A
CT 9659 <sup>c</sup>	4,087	97.2	1.8	1	0	0	0	0	1	2.8	\$18,578	16.1
CT 9664 <sup>d</sup>	5,579	98.8	0.3	0	0	0	0	0.9	0.2	1.2	\$23,344	12.4
CT 9665 <sup>d</sup>	4,541	96.9	2.8	0.1	0	0	0	0.2	0.1	3.1	\$15,620	21.7
Upshur	24,487	97.6	0.9	0.1	0.2	0.2	0.1	0.9	1.1	2.4	N/A	N/A
CT 9666 <sup>d</sup>	4,690	97.8	0	0.3	0	0	0	1.9	0	2.2	\$20,761	20.9
CT 9668	3,673	99.5	0.5	0	0	0	0	0	3.6	0.5	\$17,829	27.1
CT 9669	3,347	98.6	0	0	1.4	0	0	0	0	1.4	\$26,125	17.1
CT 9670	4,870	96.4	2.1	0	0	1	0	0.5	0	3.6	\$20,640	17.4
CT 9671	4,361	98.9	0	0	0	0	0	1.1	0	1.1	\$20,290	16.7
<b>Virginia</b>	8,185,131	69.3	19.3	0.3	5.8	0.1	2.2	3.1	8.4	30.8	\$31,329	11.5
Amelia <sup>e</sup>	12,764	72.5	24.9	0.5	0.1	0.1	0.5	1.4	0.9	27.5	N/A	N/A
CT 9301	6,697	71.3	26.1	0.2	0.2	0	0.7	1.4	1.4	28.6	\$30,589	10.8
Augusta <sup>f</sup>	73,707	93	4.1	0.3	0.6	0	1	1	2.3	7	N/A	N/A
CT 701 <sup>d</sup>	5,477	74.5	22.6	0	0.6	0	1.5	0.8	2.8	25.5	\$15,487	13.2
CT 702	3,666	90.9	0.8	0	0.3	0.1	7	0.8	9.4	9	\$28,977	12.4
CT 708	5,868	96.2	2.6	0	0.3	0	0	0.9	0.3	3.8	\$28,306	8.1
CT 709	4,822	94.9	3.4	0	0	0	0	1.7	1.5	5.1	\$27,757	9.9

TABLE U-1 (cont'd)

Racial, Ethnic, and Poverty Statistics for Census Tracts Within 1 Mile of the Atlantic Coast Pipeline and Supply Header Project

Project/Location	Total population a	White (%) <sup>a</sup> b	Black or African American (%) <sup>a</sup>	American Indian and Alaska Native (%) <sup>a</sup>	Asian (%) <sup>a</sup>	Native Hawaiian and Other Pacific Islander (%) <sup>a</sup>	Some other race (%) <sup>a</sup>	Two or more races (%) <sup>a</sup>	Hispanic or Latino origin (of any race) (%) <sup>a</sup>	Total Minority Population (%) <sup>a</sup>	Median income (dollars) <sup>a</sup>	Percent Below Poverty Level (%) <sup>a</sup>
CT 711.01	4,163	93.7	3.2	0	0	0	1.1	2	1.5	6.3	\$26,220	18.7
CT 711.02	5,934	97.5	2.1	0.5	0	0	0	0	2	2.6	\$26,604	3.8
CT 712	5,876	93.6	3.8	0.1	1.2	0	0.3	1	0.4	6.4	\$27,698	7.3
Bath <sup>f</sup>	4,644	91.7	5.9	0	0	0	0	2.3	1.8	8.2	N/A	N/A
CT 9201 <sup>c, d</sup>	4,644	91.7	5.9	0	0	0	0	2.3	1.8	8.2	\$26,429	9.3
Brunswick	16,961	41.7	56.4	0.3	0	0	0.5	1.1	1.9	58.3	N/A	N/A
CT 9301	3,511	43.7	52.3	1.5	0	0	0	2.5	0	56.3	\$22,048	16.9
CT 9302.01	2,301	24	75.2	0	0.2	0	0.2	0.3	0.8	75.9	\$14,922	20.8
CT 9302.03 <sup>c, d</sup>	4,321	34.9	63.2	0	0	0	1.1	0.8	5.4	65.1	\$18,389	28.9
CT 9303	5,231	60.1	39.3	0	0	0	0.1	0.5	0.4	39.9	\$19,258	24.6
Buckingham	17,072	62.2	34.7	0	0.2	0	0.7	2.1	2	37.7	N/A	N/A
CT 9301.01 <sup>c</sup>	4,200	68.3	27.9	0	0	0	2.1	1.8	5.6	31.8	\$22,752	26.6
CT 9302.01	5,954	54.4	42.7	0.1	0.3	0.1	0.4	2	1.2	45.6	\$16,396	20.7
CT 9302.02 <sup>d</sup>	4,239	71.7	23.7	0	0.6	0	0.3	3.7	0.6	28.3	\$23,583	22.5
Cumberland	9,916	63.1	34.4	0.7	0	0	0	1.8	0.1	36.9	N/A	N/A
CT 9301	6,375	64.3	33.4	1.1	0	0	0	1.1	0	35.6	\$22,036	15.5
CT 9302	3,541	60.8	36.3	0	0	0	0	2.9	0.3	39.2	\$26,778	24
Dinwiddie	27,993	64.8	32.7	0.1	0.3	0	0.4	1.6	2.7	35.1	N/A	N/A
CT 8401	5,446	71.7	27.1	0	0.4	0	0	0.7	0.3	28.2	\$25,418	17.6
CT 9801	-	-	-	-	-	-	-	-	-	0	-	-
Greenville	11,911	38.2	59.7	0.4	0.4	0	0.4	1	2	61.9	N/A	N/A
CT 8801.01 <sup>c</sup>	4,253	41.8	57	0.5	0	0	0.3	0.4	1.3	58.2	\$20,532	18.4
CT 8802 <sup>c</sup>	4,391	37.6	60.9	0.1	1.1	0	0	0.3	0	62.4	\$20,473	21.5
Highland <sup>f</sup>	2,258	99.8	0	0	0	0	0	0.2	0	0.2	N/A	N/A
CT 9701 <sup>d</sup>	2,258	99.8	0	0	0	0	0	0.2	0	0.2	\$23,482	12.5
Isle of Wight <sup>e</sup>	35,518	71.4	23.4	0.1	1.1	0	1	3	2.3	28.6	N/A	N/A
CT 2804	3,773	84.2	15.6	0.2	0	0	0	0	0.5	15.8	\$24,411	13.2
Nelson <sup>f</sup>	14,892	83.6	13.6	0.2	0.4	0	1.6	0.5	3.3	16.3	N/A	N/A
CT 9501	5,588	79.7	18.7	0.3	0.7	0	0.1	0.5	1.3	20.3	\$25,272	19.8
CT 9502	4,965	90.2	7.2	0	0.6	0	1	1	2.8	9.8	\$30,657	6.9
CT 9503	4,339	81.1	14.5	0.2	0	0	4.1	0	6.5	18.8	\$23,182	15
Nottoway	15,756	56.4	39.4	0.3	0.3	0	2.1	1.6	3.9	43.7	N/A	N/A
CT 1	6,395	50.3	43.5	0.6	0.5	0	3.6	1.5	5.9	49.7	\$19,181	20.8

TABLE U-1 (cont'd)

## Racial, Ethnic, and Poverty Statistics for Census Tracts Within 1 Mile of the Atlantic Coast Pipeline and Supply Header Project

Project/Location	Total population a	White (%) <sup>a</sup> b	Black or African American (%) <sup>a</sup>	American Indian and Alaska Native (%) <sup>a</sup>	Asian (%) <sup>a</sup>	Native Hawaiian and Other Pacific Islander (%) <sup>a</sup>	Some other race (%) <sup>a</sup>	Two or more races (%) <sup>a</sup>	Hispanic or Latino origin (of any race) (%) <sup>a</sup>	Total Minority Population (%) <sup>a</sup>	Median income (dollars) <sup>a</sup>	Percent Below Poverty Level (%) <sup>a</sup>
CT 2	2,731	71.6	26.3	0	0	0	1	1.2	1	28.5	\$26,161	20.3
CT 3	6,620	56	40.6	0.2	0.2	0	1.2	1.8	3.3	44	\$20,084	21.3
CT 9801	10	0	100	0	0	0	0	0	0	100	-	0
Prince Edward	23,140	63.7	33.6	0.1	1.2	0	0.5	1	2.4	36.4	N/A	N/A
CT 9301	7,241	53.3	42.6	0	3.4	0	0.3	0.3	1	46.6	\$16,842	36
Rockbridge <sup>f</sup>	22,367	93.9	2.9	0.2	0.7	0.1	0.7	1.6	1.5	6.2	N/A	N/A
CT 9301 <sup>d</sup>	8,117	94.1	2.7	0	1.2	0.2	0	1.7	0.9	5.8	\$24,280	14.5
CT 9302	4,087	96.7	0.5	0	0.6	0	1.3	0.9	1.8	3.3	\$20,586	15.2
Southampton	18,364	61	36.3	0.3	0.1	0	0.3	2.1	1.3	39.1	N/A	N/A
CT 2004	6,298	61.4	36.2	0.3	0	0	0.7	1.4	1	38.6	\$27,520	16.4
CT 2005	3,516	53.1	42.7	0	0.5	0	0.1	3.7	0.3	47	\$22,512	13.3
Chesapeake, City of	228,168	62.5	29.8	0.3	3.2	0.1	1.1	2.9	4.9	37.4	N/A	N/A
CT 205	1,381	47.7	28.2	0	2.4	0	21.4	0.3	29.5	52.3	\$21,671	7.1
CT 206	4,240	82	15	0	0.3	0	0	2.7	7.1	18	\$29,805	7.3
CT 207	5,305	22.3	75.1	0	0	0	0	2.5	5.7	77.6	\$22,972	15.5
CT 209.03 <sup>c</sup>	2,588	26	70.5	0.2	1.8	0	0	1.5	4.7	74	\$32,525	9.9
CT 209.04	8,616	59.9	31.7	0	4.3	0	0.2	3.9	2.9	40.1	\$41,867	10.2
CT 209.05	2,753	78.7	17.1	0	3.9	0	0	0.3	12.5	21.3	\$34,107	7.7
CT 213.01	5,401	68.1	27.8	0.2	1.4	0.2	1.1	1.4	3.5	32.1	\$36,708	7.8
CT 213.02	9,740	59.1	33	0	2.1	0	1.2	4.5	5.8	40.8	\$42,722	6.5
CT 214.01	1,884	65.9	28.3	0.5	0	0	2.3	3	2.3	34.1	\$39,132	8.3
CT 214.02	6,534	75.2	19.7	0	1.8	0	0.2	3.2	0.9	24.9	\$34,986	10
CT 214.03	4,586	59.2	30.6	0.8	0	0	6.6	2.7	8.3	40.7	\$23,675	12.8
CT 214.04	7,620	22	75	0	1.5	0	1.4	0.2	6.7	78.1	\$26,045	14.9
CT 215.01	10,725	51.1	38.6	0.5	3.9	0	1.9	4.1	6.8	49	\$36,667	10.5
Franklin, City of	8,534	38.8	58	0	0.9	0	0.2	2.2	0.6	61.3	N/A	N/A
CT 901 <sup>d</sup>	4,830	60.4	35	0	1.4	0	0.3	3	1	39.7	\$26,535	7.7
CT 902	3,704	10.7	87.9	0	0.2	0	0	1.2	0	89.3	\$12,684	48.9
Suffolk, City of	85,477	52.3	41.9	0.1	1.4	0	0.6	3.8	3.3	47.8	N/A	N/A
CT 753.02	2,271	71.8	20.4	0.4	1	0	1.1	5.3	1.7	28.2	\$34,259	19.2
CT 754.02	4,117	53.7	40	0	0.8	0	1.6	4	6.8	46.4	\$44,191	5.2
CT 754.03	4,314	46	46	0	1.2	0	3.1	3.8	4.4	54.1	\$41,023	5.8
CT 754.04	971	90.7	9.3	0	0	0	0	0	0	9.3	\$41,773	1.3

TABLE U-1 (cont'd)

## Racial, Ethnic, and Poverty Statistics for Census Tracts Within 1 Mile of the Atlantic Coast Pipeline and Supply Header Project

Project/Location	Total population a	White (%) <sup>a</sup> b	Black or African American (%) <sup>a</sup>	American Indian and Alaska Native (%) <sup>a</sup>	Asian (%) <sup>a</sup>	Native Hawaiian and Other Pacific Islander (%) <sup>a</sup>	Some other race (%) <sup>a</sup>	Two or more races (%) <sup>a</sup>	Hispanic or Latino origin (of any race) (%) <sup>a</sup>	Total Minority Population (%) <sup>a</sup>	Median income (dollars) <sup>a</sup>	Percent Below Poverty Level (%) <sup>a</sup>
CT 754.05	2,192	92.5	6.9	0	0	0.4	0	0.2	0.5	7.5	\$36,129	1.7
CT 755.01	4,735	46.2	48.2	0	0.7	0	0.1	4.8	1.2	53.8	\$26,866	20.4
CT 755.02	4,370	51.8	40.5	0	5	0	0.7	2	2.3	48.2	\$36,964	7
CT 757.02	3,555	74.6	22.4	0	0	0	0	3	2.4	25.4	\$37,386	7.6
CT 757.03	1,344	70.3	29.7	0	0	0	0	0	0	29.7	\$26,313	4.9
CT 758.01	2,872	80.2	17.2	0.9	0.3	0	0.2	1.2	0.6	19.8	\$26,891	4.7
CT 758.02	1,677	53.5	44.1	0	1	0	0	1.4	0	46.5	\$24,979	7.9
CT 758.03	1,343	75.9	20.5	0	0	0	0	3.6	2.6	24.1	\$33,772	15.3
<b>North Carolina</b>	<b>9,750,405</b>	<b>69.6</b>	<b>21.5</b>	<b>1.2</b>	<b>2.4</b>	<b>0.1</b>	<b>3</b>	<b>2.3</b>	<b>8.7</b>	<b>30.5</b>	<b>\$24,957</b>	<b>17.6</b>
Cumberland	324,002	52	36.2	1.2	2.3	0.3	2.5	5.4	10.4	47.9	N/A	N/A
CT 14 <sup>d</sup>	6,038	47.7	45.4	3.1	0	0	0.3	3.5	5.4	52.3	\$20,906	23.6
CT 26 <sup>c</sup>	4,041	69	25.7	1.5	1.2	0	0.1	2.5	0.4	31	\$27,145	17.2
CT 27	8,742	69.8	20.7	0	2.3	0.4	2.5	4.3	6.3	30.2	\$28,829	8.2
CT 28	6,538	80.2	12.1	1.7	0.2	0.7	0.8	4.3	2.3	19.8	\$26,374	12.2
CT 29	4,639	67.3	24	1.3	1.8	0	0	5.7	5.6	32.8	\$26,484	17.1
CT 30.01	11,543	65	19.3	5.5	1.2	0	3.7	5.3	10.5	35	\$31,878	8.9
CT 30.02	2,789	69.2	24.1	3.4	0	0	1	2.3	9.5	30.8	\$25,432	13.4
CT 37	7,035	72.4	22.2	1.1	0.2	0	0	4.2	6.3	27.7	\$29,625	13.1
Halifax	53,803	40	51.6	3.3	0.8	0	0.9	3.4	2.4	60	N/A	N/A
CT 9306	4,085	36.4	57	0.7	1.2	0	1.2	3.5	2	63.6	\$17,943	26.6
CT 9308	5,667	8.3	51	29.3	1.2	0.1	1.6	8.5	3.4	91.7	\$15,304	29.7
CT 9309	5,026	9.1	88.6	0.1	1.6	0	0	0.7	0	91	\$13,533	34
CT 9310 <sup>d</sup>	3,285	25.4	67.1	1.3	0.2	0	0	6	1.1	74.6	\$18,516	17.3
CT 9301	3,272	24.4	73.8	0.1	0	0	0	1.7	0.3	75.6	\$14,967	40.2
Johnston	175,343	78.5	15.1	0.4	0.7	0	3.1	2.2	13.1	21.5	N/A	N/A
CT 401	6,263	85.5	13.2	0	0	0	0.9	0.4	8.8	14.5	\$22,975	22.8
CT 403.01	3,535	53.7	20.7	1.8	0	0	22.6	1.2	40	46.3	\$15,600	41.2
CT 404	4,335	82.6	10.5	0	0.1	0	6	0.7	16.7	17.3	\$22,165	20.3
CT 406 <sup>d</sup>	3,354	59.1	27.6	0	0.6	0	11.6	1.1	15.5	40.9	\$17,420	23.6
CT 407 <sup>c</sup>	3,399	60.9	27	0.2	7.1	0	2.5	2.2	6.4	39	\$18,182	18.3
CT 412.02	5,413	87.4	7.5	0.5	0.1	0	4.4	0	31.2	12.5	\$17,267	35.7
CT 413	5,686	76.8	14.7	0.4	0	0	3.9	4.2	9.4	23.2	\$20,622	23.1
CT 414	6,768	71	14.5	0	1	0	11.5	2.1	17.3	29.1	\$20,698	26.8

TABLE U-1 (cont'd)

## Racial, Ethnic, and Poverty Statistics for Census Tracts Within 1 Mile of the Atlantic Coast Pipeline and Supply Header Project

Project/Location	Total population a	White (%) <sup>a</sup> b	Black or African American (%) <sup>a</sup>	American Indian and Alaska Native (%) <sup>a</sup>	Asian (%) <sup>a</sup>	Native Hawaiian and Other Pacific Islander (%) <sup>a</sup>	Some other race (%) <sup>a</sup>	Two or more races (%) <sup>a</sup>	Hispanic or Latino origin (of any race) (%) <sup>a</sup>	Total Minority Population (%) <sup>a</sup>	Median income (dollars) <sup>a</sup>	Percent Below Poverty Level (%) <sup>a</sup>
Nash	95,174	55.1	37.8	0.7	0.8	0	3.4	2.3	6.4	45	N/A	N/A
CT 107	2,538	39.1	55.1	0	1.3	0	0	4.4	1.8	60.8	\$22,102	11.4
CT 108	7,087	79.1	20.2	0.3	0.1	0	0.2	0.2	0.8	21	\$30,743	9.9
CT 111.01	5,582	49.5	43.7	0	0	0	3	3.9	7.7	50.6	\$26,202	11.7
CT 111.02	7,647	65.8	29	3.2	0	0	0.9	0.9	1.6	34	\$22,013	19.1
CT 113	5,163	72.9	9.4	0	0	0	15.4	2.2	23.6	27	\$22,208	13.4
CT 114	4,748	52	27.9	0.5	0.4	0	18.1	1.1	24.6	48	\$23,612	18.1
Northampton	21,310	40.1	56.4	0.2	0.1	0.1	0.2	2.9	1.7	59.9	N/A	N/A
CT 9201	5,141	65.1	32.6	0	0	0	0	2.4	1.8	35	\$24,813	16.4
CT 9203 <sup>c</sup>	6,180	19.1	75.6	0.2	0.1	0	0	5.1	0.4	81	\$17,625	32.3
Robeson	134,913	30.8	24.1	37.6	0.8	0.1	3.8	2.9	8.1	69.3	N/A	N/A
CT 9601.01	4,057	54	34.4	5.3	0	0	4.1	2.1	22.1	45.9	\$17,859	43
CT 9601.02	4,970	54.9	21.5	16.7	0.5	0	2.5	3.8	9.3	45	\$17,449	23.3
CT 9602.01	5,879	46.4	30.7	16	0	0	2.9	4	5	53.6	\$19,557	22.5
CT 9602.02	4,446	22.5	9.8	58.5	0.9	0	4.4	3.9	19.6	77.5	\$18,844	33.1
CT 9603	7,167	36.6	35.9	22.1	0.3	0.5	2.2	2.3	20.7	63.3	\$16,283	43.8
CT 9604.01	7,782	9.1	2	82.4	0.7	0	0.6	5.2	0.7	90.9	\$17,623	36.3
CT 9604.02	3,654	11.2	7.3	73.9	1.3	0	4.3	2	5.8	88.8	\$19,864	29.4
CT 9605.01 <sup>c</sup>	3,612	4.5	9.3	81.3	0	0	0.2	4.7	0.7	95.5	\$17,737	32.3
CT 9606	6,920	16	10.9	67.3	1.1	0	4.1	0.7	6.5	84.1	\$17,718	29.8
CT 9607.01	6,253	22.4	6.1	54.2	1	0	12.7	3.5	20.2	77.5	\$19,694	36.3
Sampson	63,842	58.5	26	1.7	0.3	0	10.8	2.7	17.5	41.5	N/A	N/A
CT 9703.01	5,932	75.2	15.2	0.1	0.3	0	5.2	4.1	13.4	24.9	\$25,698	18.7
Wilson	81,499	51.1	38.6	0.4	0.9	0.1	6.9	2.1	9.8	49	N/A	N/A
CT 15	5,668	69.6	15.2	0	0.1	0	12.4	2.6	17	30.3	\$26,142	13.1
CT 16	3,179	69.2	20.4	1.1	0.4	0	8.8	0	8.8	30.7	\$26,047	17.6
<b>SUPPLY HEADER PROJECT</b>												
<b>Pennsylvania</b>	12,758,729	81.9	10.9	0.2	3	0	2	2	6.1	18.1	\$26,729	13.5
Greene	38,171	92.3	5.4	0.5	0.2	0	0.3	1.3	1.3	7.7	N/A	N/A
CT 9702	3,204	93.2	6.5	0	0.1	0	0	0.3	0.9	6.9	\$23,707	10.4
CT 9703 <sup>d</sup>	4,520	98.9	0.2	0	0.2	0	0.1	0.6	0.3	1.1	\$26,172	12.4
CT 9705.01	5,130	57.3	33.3	2.8	0.3	0.1	2.1	4.2	7.2	42.8	\$15,159	4.2

TABLE U-1 (cont'd)

## Racial, Ethnic, and Poverty Statistics for Census Tracts Within 1 Mile of the Atlantic Coast Pipeline and Supply Header Project

Project/Location	Total population a	White (%) <sup>a</sup> b	Black or African American (%) <sup>a</sup>	American Indian and Alaska Native (%) <sup>a</sup>	Asian (%) <sup>a</sup>	Native Hawaiian and Other Pacific Islander (%) <sup>a</sup>	Some other race (%) <sup>a</sup>	Two or more races (%) <sup>a</sup>	Hispanic or Latino origin (of any race) (%) <sup>a</sup>	Total Minority Population (%) <sup>a</sup>	Median income (dollars) <sup>a</sup>	Percent Below Poverty Level (%) <sup>a</sup>
Westmoreland	362,587	95.1	2.3	0.1	0.9	0	0.2	1.3	1	4.8	N/A	N/A
CT 8017.02	4,607	99.9	0	0.1	0	0	0	0	0.3	0.1	\$32,063	4.2
CT 8017.03	2,750	99.8	0.2	0	0	0	0	0	0.4	0.2	\$24,167	4.3
CT 8019 <sup>d</sup>	6,605	95.6	1	0	1.1	0	0	2.2	0.3	4.3	\$25,504	4.7
CT 8020.01 <sup>c</sup>	2,562	96.1	1	0	2.5	0	0.1	0.4	0.8	4	\$29,909	3.1
CT 8020.02	7,673	94.8	0.7	0.2	3.3	0	0.1	1	1.2	5.3	\$31,727	6.6
CT 8021.02 <sup>c</sup>	6,048	96.5	0	0	1.8	0	0	1.6	3.2	3.4	\$37,182	5.7
<b>West Virginia</b>	<b>1,853,881</b>	<b>93.6</b>	<b>3.2</b>	<b>0.2</b>	<b>0.7</b>	<b>0</b>	<b>0.3</b>	<b>2</b>	<b>1.3</b>	<b>6.4</b>	<b>\$22,148</b>	<b>18.1</b>
Doddridge	8,282	97.2	0.9	0.1	0	0	0	1.8	1	2.8	N/A	N/A
CT 9650 <sup>d</sup>	3,906	97.8	0.4	0.3	0	0	0	1.6	0.7	2.3	\$19,244	11
Harrison	69,069	95.8	1.7	0.4	0.5	0.2	0.1	1.3	1.4	4.2	N/A	N/A
CT 314 <sup>c</sup>	2,860	94.7	0	0	1.5	0	0.3	3.5	0.3	5.3	\$20,998	15.5
Lewis	16,412	97.2	0.9	0	0.2	0.1	0	1.7	0.2	2.9	N/A	N/A
CT 9672 <sup>c</sup>	3,549	95.5	0	0	0.3	0	0	4.2	0	4.5	\$19,656	22
Marshall	32,716	97.8	0.9	0.3	0.4	0	0.2	0.5	0.9	2.3	N/A	N/A
CT 209	4,435	98.1	1.1	0.1	0.3	0	0	0.3	0	1.8	\$22,830	11.4
Ritchie	10,221	98.3	0.4	0	0	0	0	1.3	0.6	1.7	N/A	N/A
CT 9623 <sup>d</sup>	4,333	98.5	0.3	0	0	0	0	1.2	1.2	1.5	\$19,398	21
Tyler	9,084	98.8	0.2	0.1	0	0	0	0.8	0.6	1.1	N/A	18
CT 9620	2,161	99.4	0	0.4	0	0	0	0.3	0	0.7	\$18,830	16.8
Wetzel	16,314	98.6	0.1	0	0.5	0.1	0	0.7	0.6	1.4	N/A	N/A
CT 304	2,936	99.5	0	0.2	0	0	0	0.3	0.5	0.5	\$18,190	24.6
CT 305 <sup>c, d</sup>	4,251	98.6	0	0	0.6	0.3	0	0.5	0	1.4	\$19,390	23.6

## Sources:

<sup>a</sup> U.S. Census Bureau 2014.<sup>b</sup> White Alone, Not Hispanic or Latino<sup>c</sup> Census tract contains permanent aboveground facility.<sup>d</sup> Census tract contains contractor yard.<sup>e</sup> Includes census tracts within one mile of the proposed pipeline facilities and major aboveground facilities, but does not contain any project facilities.<sup>f</sup> Counties with federal lands crossed by the projects.

Grey highlighted values indicate percentage exceeds thresholds defined in text, and is an environmental justice population.

## **APPENDIX V**

**SUMMARY OF COMMUNICATIONS WITH FEDERALLY AND  
STATE RECOGNIZED INDIAN TRIBES FOR THE ATLANTIC  
COAST PIPELINE AND SUPPLY HEADER PROJECT**

TABLE V-1

**Summary of Communications with Federally Recognized Indian Tribes for the Atlantic Coast Pipeline and Supply Header Project**

Tribe	Date	Summary	Filed to the Docket
Absentee-Shawnee Tribe of Indians of Oklahoma	7/29/2014	Initial letter from Atlantic to the Tribe requesting comments on the ACP.	9/18/2015
	10/17/2014	Follow-up letter from Atlantic to the Tribe requesting comments on the ACP.	9/18/2015
	10/28/2014	Initial letter from DETI to the Tribe requesting comments on the SHP.	9/18/2015
	12/4/2014	Follow-up telephone phone call (message) from Atlantic and DETI to the Tribe requesting comments on the ACP and SHP.	9/18/2015
	3/25/2015	Consultation letter from FERC to the Tribe requesting comments on the ACP and SHP.	9/18/2015
	10/28/2015	Letter from Atlantic to the Tribe, a MNF Tribal Partner, transmitting a draft archaeological survey report and draft unanticipated discoveries plan for the MNF.	10/30/2015
	6/21/2016	Email from FERC to the Tribe requesting comments on the ACP and SHP.	9/15/2016
	8/29/2016	Letter from Atlantic to the Tribe, a MNF Tribal Partner, transmitting an updated draft archaeological survey report for the MNF. (Note: this letter also references an updated unanticipated discoveries plan for the MNF; however, a copy of the plan inadvertently was omitted from this submittal.)	9/15/2016
	10/4/2016	Letter from Atlantic to the Tribe, a MNF Tribal Partner, transmitting an updated unanticipated discoveries plan for the MNF. (Note: the updated plan inadvertently was omitted from a submittal on 8/29/2016.)	10/31/2016
	10/18/2016	Letter from Atlantic and DETI to the Tribe transmitting updated route maps and renewing requests for comments for the ACP and SHP.	10/31/2016
Catawba Indian Nation	10/17/2014	Initial letter from Atlantic to the Tribe requesting comments on the ACP.	9/18/2015
	11/12/2014	Letter from the Tribe to Atlantic requesting a cultural resources survey for the ACP.	9/18/2015
	3/25/2015	Consultation letter from FERC to the Tribe requesting comments on the ACP and SHP.	9/18/2015
	6/21/2016	Email from FERC to the Tribe requesting comments on the ACP and SHP.	9/15/2016
	6/22/2016	Email from the Tribe to FERC requesting additional information on the ACP and SHP.	9/15/2016
	8/8/2016	Letter from Atlantic and DETI to the Tribe (sent at FERC's request) providing updated project descriptions and maps for the ACP and SHP.	8/15/2016
	8/25/2016	Letter from the Tribe to Atlantic/DETI in which the Tribe states there are no concerns regarding cultural resource sites in the ACP and SHP project areas. The Tribe additionally asked to be notified in the event of an unanticipated find.	9/1/2016
	10/18/2016	Letter from Atlantic and DETI to the Tribe transmitting updated route maps and renewing requests for comments on the ACP and SHP.	10/31/2016

TABLE V-1 (cont'd)

**Summary of Communications with Federally Recognized Indian Tribes for the Atlantic Coast Pipeline and Supply Header Project**

Tribe	Date	Summary	Filed to the Docket
Cherokee Nation	7/29/2014	Initial letter from Atlantic to the Tribe requesting comments on the ACP.	9/18/2015
	10/17/2014	Follow-up letter from Atlantic to the Tribe requesting comments on the ACP.	9/18/2015
	12/4/2014	Follow-up telephone call (message) from Atlantic to the Tribe requesting comments on the ACP.	9/18/2015
	12/19/2014	Voicemail message from the Tribe regarding the ACP.	9/18/2015
	12/19/2014	Email from Atlantic to the Tribe transmitting copies of Atlantic's 7/29/14 and 10/17/14 letters requesting comments on the ACP.	9/18/2015
	3/25/2015	Consultation letter from FERC to the Tribe requesting comments on the ACP and SHP.	9/18/2015
	10/28/2015	Letter from Atlantic to the Tribe, a MNF Tribal Partner, transmitting a draft archaeological survey report and draft unanticipated discoveries plan for the MNF.	10/30/2015
	6/21/2016	Email from FERC to the Tribe requesting comments on the ACP and SHP.	9/15/2016
	8/29/2016	Letter from Atlantic to the Tribe, a MNF Tribal Partner, transmitting an updated draft archaeological survey report for the MNF. (Note: this letter also references an updated unanticipated discoveries plan for the MNF; however, a copy of the plan inadvertently was omitted from this submittal.)	9/15/2016
	10/4/2016	Letter from Atlantic to the Tribe, a MNF Tribal Partner, transmitting an updated unanticipated discoveries plan for the MNF. (Note: the updated plan inadvertently was omitted from a submittal on 8/29/2016.)	10/31/2016
10/18/2016	Letter from Atlantic and DETI to the Tribe transmitting updated route maps and renewing requests for comments on the ACP and SHP.	10/31/2016	
Delaware Nation	7/29/2014	Initial letter from Atlantic to the Tribe requesting comments on the ACP.	9/18/2015
	10/17/2014	Follow-up letter from Atlantic to the Tribe requesting comments on the ACP.	9/18/2015
	10/28/2014	Initial letter from DETI to the Tribe requesting comments on the SHP.	9/18/2014
	12/1/2014	Letter from the Tribe to FERC in which the Tribe states that no sites of interest to the Tribe will be affected by the ACP. The Tribe additionally asked to be notified in the event of an unanticipated find.	9/18/2015
	2/11/2015	Letter from the Tribe to DETI in which the Tribe states that no sites of interest to the Tribe will be affected by the SHP. The Tribe additionally asked to be notified in the event of an unanticipated find.	9/18/2015
	3/25/2015	Consultation letter from FERC to the Tribe requesting comments on the ACP and SHP.	9/18/2015
	10/28/2015	Letter from Atlantic to the Tribe, a MNF Tribal Partner, transmitting a draft archaeological survey report and draft unanticipated discoveries plan for the MNF.	10/30/2015
	1/8/2016	Email from the Tribe to Atlantic concurring with the unanticipated discoveries plan for the MNF.	1/29/2016
6/21/2016	Email from FERC to the Tribe requesting comments on the ACP and SHP.	9/15/2016	

TABLE V-1 (cont'd)

**Summary of Communications with Federally Recognized Indian Tribes for the Atlantic Coast Pipeline and Supply Header Project**

Tribe	Date	Summary	Filed to the Docket
Delaware Tribe of Indians	8/29/2016	Letter from Atlantic to the Tribe, a MNF Tribal Partner, transmitting an updated draft archaeological survey report for the MNF. (Note: this letter also references an updated unanticipated discoveries plan for the MNF; however, a copy of the plan inadvertently was omitted from this submittal.)	9/15/2016
	10/4/2016	Letter from Atlantic to the Tribe, a MNF Tribal Partner, transmitting an updated unanticipated discoveries plan for the MNF. (Note: the updated plan inadvertently was omitted from a submittal on 8/29/2016.)	10/31/2016
	10/18/2016	Letter from Atlantic and DETI to the Tribe transmitting updated route maps and renewing requests for comments on the ACP and SHP.	10/31/2016
	7/29/2014	Initial letter from Atlantic to the Tribe requesting comments on the ACP.	9/18/2015
	10/17/2014	Follow-up letter from Atlantic to the Tribe requesting comments on the ACP.	9/18/2015
	10/28/2014	Initial letter from DETI to the Tribe requesting comments on the SHP.	9/18/2014
	12/4/2014	Follow-up telephone phone call (message) from Atlantic/DETI to the Tribe requesting comments on the ACP and SHP.	9/18/2015
	3/25/2015	Consultation letter from FERC to the Tribe requesting comments on the ACP and SHP.	9/18/2015
	10/28/2015	Letter from Atlantic to the Tribe, a MNF Tribal Partner, transmitting a draft archaeological survey report and draft unanticipated discoveries plan for the MNF.	10/30/2015
	6/21/2016	Email from FERC to the Tribe requesting comments on the ACP and SHP.	9/15/2016
	6/21/2016	Email from the Tribe to FERC in which the Tribe states that its land interests in Virginia are in Accomack and Northampton Counties and its land interests in West Virginia are in Brooke, Hancock, Marshall, and Ohio Counties. (Note: the ACP and SHP do not cross these Counties.)	9/15/2016
	8/10/2016	Letter from Atlantic and DETI to the Tribe (sent at FERC's request) providing updated project descriptions and maps for the ACP and SHP and copies of survey reports for Pennsylvania and West Virginia.	8/15/2016
	8/29/2016	Letter from Atlantic to the Tribe, a MNF Tribal Partner, transmitting an updated draft archaeological survey report for the MNF. (Note: this letter also references an updated unanticipated discoveries plan for the MNF; however, a copy of the plan inadvertently was omitted from this submittal.)	9/15/2016
	10/4/2016	Letter from Atlantic to the Tribe, a MNF Tribal Partner, transmitting an updated unanticipated discoveries plan for the MNF. (Note: the updated plan inadvertently was omitted from a submittal on 8/29/2016.)	10/31/2016
10/18/2016	Letter from Atlantic and DETI to the Tribe transmitting updated route maps and renewing requests for comments on the ACP and SHP.	10/31/2016	
Eastern Band of Cherokee Indians	2/9/2017	Letter from Atlantic and DETI to the Tribe transmitting recent Phase I archaeological survey reports and requesting comments on the ACP and SHP.	
	7/29/2014	Initial letter from Atlantic to the Tribe requesting comments on the ACP.	9/18/2015
	10/17/2014	Follow-up letter from Atlantic to the Tribe requesting comments on the ACP.	9/18/2015

TABLE V-1 (cont'd)

**Summary of Communications with Federally Recognized Indian Tribes for the Atlantic Coast Pipeline and Supply Header Project**

Tribe	Date	Summary	Filed to the Docket
	11/5/2014	Email from the Tribe to FERC in which the Tribe states that the ACP is outside the aboriginal territory of the Cherokee people.	9/18/2015
	3/25/2015	Consultation letter from FERC to the Tribe requesting comments on the ACP and SHP.	9/18/2015
	10/28/2015	Letter from Atlantic to the Tribe, a MNF Tribal Partner, transmitting a draft archaeological survey report and draft unanticipated discoveries plan for the MNF.	10/30/2015
	6/21/2016	Email from FERC to the Tribe requesting comments on the ACP and SHP.	9/15/2016
	9/7/2016	Letter from the Tribe to FERC in which the Tribe states that the ACP and SHP are within the aboriginal territory of the Cherokee. The Tribe additionally requested updated project information and copies of archaeological survey reports.	9/22/2016
	10/5/2016	Letter from Atlantic to the Tribe providing updated information on the ACP and SHP and transmitting copies of archaeological survey reports for the projects.	10/17/2016
	8/29/2016	Letter from Atlantic to the Tribe, a MNF Tribal Partner, transmitting an updated draft archaeological survey report for the MNF. (Note: this letter also references an updated unanticipated discoveries plan for the MNF; however, a copy of the plan inadvertently was omitted from this submittal.)	9/15/2016
	9/7/2016	Letter from the Tribe to FERC requesting topographic maps and survey reports.	9/22/16
	10/4/2016	Letter from Atlantic to the Tribe, a MNF Tribal Partner, transmitting an updated unanticipated discoveries plan for the MNF. (Note: the updated plan inadvertently was omitted from a submittal on 8/29/2016.)	10/31/2016
	10/5/2016	Letter from Atlantic and DETI to the Tribe transmitting Phase I archaeological survey reports and updated, revised route maps and renewing requests for comments on the ACP and SHP.	10/31/2016
	2/9/2017	Letter from Atlantic and DETI to the Tribe transmitting recent Phase I archaeological survey reports and requesting comments on the ACP and SHP.	
Eastern Shawnee Tribe of Oklahoma	7/29/2014	Initial letter from Atlantic to the Tribe requesting comments on the ACP.	9/18/2015
	10/17/2014	Follow-up letter from Atlantic to the Tribe requesting comments on the ACP.	9/18/2015
	10/28/2014	Initial letter from DETI to the Tribe requesting comments on the SHP.	9/18/2014
	12/4/2014	Follow-up telephone phone call (message) from Atlantic/DETI to the Tribe requesting comments on the ACP and SHP.	9/18/2015
	3/25/2015	Consultation letter from FERC to the Tribe requesting comments on the ACP and SHP.	9/18/15
	10/28/2015	Letter from Atlantic to the Tribe, a MNF Tribal Partner, transmitting a draft archaeological survey report and draft unanticipated discoveries plan for the MNF.	10/30/2015
	6/21/2016	Email from FERC to the Tribe requesting comments on the ACP and SHP.	9/15/2016
	8/1/2016	Email from the Tribe to FERC requesting a follow-up telephone call.	9/15/2016
	8/4/2016	Follow-up telephone call from FERC to the Tribe in which the Tribe requested additional information on the ACP.	9/15/2016

TABLE V-1 (cont'd)

**Summary of Communications with Federally Recognized Indian Tribes for the Atlantic Coast Pipeline and Supply Header Project**

Tribe	Date	Summary	Filed to the Docket
Pamunkey Tribe	8/29/2016	Letter from Atlantic to the Tribe, a MNF Tribal Partner, transmitting an updated draft archaeological survey report for the MNF. (Note: this letter also references an updated unanticipated discoveries plan for the MNF; however, a copy of the plan inadvertently was omitted from this submittal.)	9/15/2016
	10/4/2016	Letter from Atlantic to the Tribe, a MNF Tribal Partner, transmitting an updated unanticipated discoveries plan for the MNF. (Note: the updated plan inadvertently was omitted from a submittal on 8/29/2016.)	10/31/2016
	10/18/2016	Letter from Atlantic and DETI to the Tribe transmitting updated route maps and renewing requests for comments on the ACP and SHP.	10/31/2016
	4/24/2015	Initial letter from Atlantic to the Commonwealth recognized Tribe requesting comments on the ACP.	9/18/2015
	8/5/2015	Initial letter from Atlantic to the federally recognized Tribe requesting comments on the ACP.	9/18/2015
	10/18/2016	Letter from Atlantic and DETI to the Tribe transmitting updated route maps and renewing requests for comments on the ACP and SHP.	10/31/2016
	5/3/2017	Meeting of Virginia tribes and Dominion about ACP project impacts	5/26/2017
Seneca-Cayuga Nation	5/12/2017	Letter from Atlantic to the Tribe transmitting archaeology and architecture reports for the Virginia segment of the ACP.	5/26/2017
	10/28/2014	Initial letter from DETI to the Tribe requesting comments on the SHP.	9/18/2015
	10/28/2015	Letter from Atlantic to the Tribe, a MNF Tribal Partner, transmitting a draft archaeological survey report and draft unanticipated discoveries plan for the MNF.	10/30/2015
	12/4/2014	Follow-up phone call from NRG to the Tribe requesting comments on the SHP.	9/18/2015
	6/21/2016	Email from FERC to the Tribe requesting comments on the ACP and SHP.	9/15/2016
	8/29/2016	Letter from Atlantic to the Tribe, a MNF Tribal Partner, transmitting an updated draft archaeological survey report for the MNF. (Note: this letter also references an updated unanticipated discoveries plan for the MNF; however, a copy of the plan inadvertently was omitted from this submittal.)	9/15/2016
	10/4/2016	Letter from Atlantic to the Tribe, a MNF Tribal Partner, transmitting an updated unanticipated discoveries plan for the MNF. (Note: the updated plan inadvertently was omitted from a submittal on 8/29/2016.)	10/31/2016
Seneca Nation of Indians	10/18/2016	Letter from Atlantic and DETI to the Tribe transmitting updated route maps and renewing requests for comments on the ACP and SHP.	10/31/2016
	10/28/2014	Initial letter from DETI to the Tribe requesting comments on the SHP.	
	10/28/2015	Letter from Atlantic to the Tribe, a MNF Tribal Partner, transmitting a draft archaeological survey report and draft unanticipated discoveries plan for the MNF.	10/30/2015
	12/4/2014	Follow-up phone call from NRG to the Tribe requesting comments on the SHP.	
	6/21/2016	Email from FERC to the Tribe requesting comments on the ACP and SHP.	9/15/2016

TABLE V-1 (cont'd)

**Summary of Communications with Federally Recognized Indian Tribes for the Atlantic Coast Pipeline and Supply Header Project**

Tribe	Date	Summary	Filed to the Docket
	7/5/2016	Email from the Tribe to FERC expressing interest in the ACP and SHP and requesting an archaeological survey in undisturbed areas.	9/15/2016
	8/29/2016	Letter from Atlantic to the Tribe, a MNF Tribal Partner, transmitting an updated draft archaeological survey report for the MNF. (Note: this letter also references an updated unanticipated discoveries plan for the MNF; however, a copy of the plan inadvertently was omitted from this submittal.)	9/15/2016
	10/4/2016	Letter from Atlantic to the Tribe, a MNF Tribal Partner, transmitting an updated unanticipated discoveries plan for the MNF. (Note: the updated plan inadvertently was omitted from a submittal on 8/29/2016.)	10/31/2016
	10/18/2016	Letter from Atlantic and DETI to the Tribe transmitting updated route maps and renewing requests for comments on the ACP and SHP.	10/31/2016
The Shawnee Tribe	7/29/2014	Initial letter from Atlantic to the Tribe requesting comments on the ACP.	9/18/2015
	10/17/2014	Follow-up letter from Atlantic to the Tribe requesting comments on the ACP.	9/18/2015
	10/28/2014	Initial letter from DETI to the Tribe requesting comments on the SHP.	
	12/4/2014	Follow-up phone call from Atlantic to the Tribe requesting comments on the ACP.	9/18/2015
	12/4/2014	Follow-up phone call from DETI to the Tribe requesting comments on the SHP.	
	3/25/2015	Consultation letter from FERC to the Tribe requesting comments on the ACP and SHP.	9/18/2015
	10/28/2015	Letter from Atlantic to the Tribe, a MNF Tribal Partner, transmitting a draft archaeological survey report and draft unanticipated discoveries plan for the MNF.	10/30/2015
	6/21/2016	Email from FERC to the Tribe requesting comments on the ACP and SHP.	9/15/2016
	8/29/2016	Letter from Atlantic to the Tribe, a MNF Tribal Partner, transmitting an updated draft archaeological survey report for the MNF. (Note: this letter also references an updated unanticipated discoveries plan for the MNF; however, a copy of the plan inadvertently was omitted from this submittal.)	9/15/2016
	10/4/2016	Letter from Atlantic to the Tribe, a MNF Tribal Partner, transmitting an updated unanticipated discoveries plan for the MNF. (Note: the updated plan inadvertently was omitted from a submittal on 8/29/2016.)	10/31/2016
	10/18/2016	Letter from Atlantic and DETI to the Tribe transmitting updated route maps and renewing requests for comments on the ACP and SHP.	10/31/2016
Stockbridge Munsee Community	3/25/2015	Consultation letter from FERC to the Tribe requesting comments on the ACP and SHP.	9/18/2015
	4/24/2015	Initial letter from Atlantic to the Tribe requesting comments on the ACP.	9/18/2015
	4/30/2015	Letter from the Tribe to Atlantic deferring consultation on the ACP.	9/18/2015
	6/21/2016	Email from FERC to the Tribe requesting comments on the ACP and SHP.	9/15/2016
Tonawanda Band of Seneca	10/28/2014	Initial letter from DETI to the Tribe requesting comments on the SHP.	9/18/2015
	12/4/2014	Follow-up phone call from DETI to the Tribe requesting comments on the SHP.	

TABLE V-1 (cont'd)

**Summary of Communications with Federally Recognized Indian Tribes for the Atlantic Coast Pipeline and Supply Header Project**

Tribe	Date	Summary	Filed to the Docket
Tuscarora Nation of New York	10/28/2015	Letter from Atlantic to the Tribe, a MNF Tribal Partner, transmitting a draft archaeological survey report and draft unanticipated discoveries plan for the MNF.	10/30/2015
	6/21/2016	Email from FERC to the Tribe requesting comments on the ACP and SHP.	9/15/2016
	6/23/2016	Telephone call from FERC to the Tribe in which the Tribe requested additional information on the ACP and SHP.	
	8/8/2016	Letter from Atlantic and DETI to the Tribe (sent at FERC's request) providing updated project descriptions and maps for the ACP and SHP.	8/15/2016
	8/29/2016	Letter from Atlantic to the Tribe, a MNF Tribal Partner, transmitting an updated draft archaeological survey report for the MNF. (Note: this letter also references an updated unanticipated discoveries plan for the MNF; however, a copy of the plan inadvertently was omitted from this submittal.)	9/15/2016
	10/4/2016	Letter from Atlantic to the Tribe, a MNF Tribal Partner, transmitting an updated unanticipated discoveries plan for the MNF. (Note: the updated plan inadvertently was omitted from a submittal on 8/29/2016.)	10/31/2016
	10/18/2016	Letter from Atlantic and DETI to the Tribe transmitting updated route maps and renewing requests for comments on the ACP and SHP.	10/31/2016
	7/29/2014	Initial letter from Atlantic to the Tribe requesting comments on the ACP.	9/18/2015
	10/17/2014	Follow-up letter from Atlantic to the Tribe requesting comments on the ACP.	9/18/2015
	12/4/2014	Follow-up phone call from NRG to the Tribe requesting comments on the ACP.	9/18/2015
	3/25/2015	Consultation letter from FERC to the Tribe requesting comments on the ACP and SHP.	9/18/2015
	10/28/2015	Letter from Atlantic to the Tribe, a MNF Tribal Partner, transmitting a draft archaeological survey report and draft unanticipated discoveries plan for the MNF.	10/30/2015
	6/21/2016	Email from FERC to the Tribe requesting comments on the ACP and SHP.	9/15/2016
	6/23/2016	Telephone call from FERC to the Tribe in which the Tribe requested additional information on the ACP and SHP.	9/15/2016
	8/8/2016	Letter from Atlantic and DETI to the Tribe (sent at FERC's request) providing updated project descriptions and maps for the ACP and SHP.	8/15/2016
	8/29/2016	Letter from Atlantic to the Tribe, a MNF Tribal Partner, transmitting an updated draft archaeological survey report for the MNF. (Note: this letter also references an updated unanticipated discoveries plan for the MNF; however, a copy of the plan inadvertently was omitted from this submittal.)	9/15/2016
10/4/2016	Letter from Atlantic to the Tribe, a MNF Tribal Partner, transmitting an updated unanticipated discoveries plan for the MNF. (Note: the updated plan inadvertently was omitted from a submittal on 8/29/2016.)	10/31/2016	
10/18/2016	Letter from Atlantic and DETI to the Tribe transmitting updated route maps and renewing requests for comments on the ACP and SHP.	10/31/2016	
United Keetoowah Band of Cherokee Indians	7/29/2014	Initial letter from Atlantic to the Tribe requesting comments on the ACP.	9/18/2015
	10/17/2014	Follow-up letter from Atlantic to the Tribe requesting comments on the ACP.	9/18/2015

TABLE V-1 (cont'd)

**Summary of Communications with Federally Recognized Indian Tribes for the Atlantic Coast Pipeline and Supply Header Project**

Tribe	Date	Summary	Filed to the Docket
	10/29/2014	Email from the Tribe to Atlantic deferring consultation on the ACP.	9/18/2015
	3/25/2015	Consultation letter from FERC to the Tribe requesting comments on the ACP and SHP.	9/18/2015
	10/28/2015	Letter from Atlantic to the Tribe, a MNF Tribal Partner, transmitting a draft archaeological survey report and draft unanticipated discoveries plan for the MNF.	10/30/2015
	6/21/2016	Email from FERC to the Tribe requesting comments on the ACP and SHP.	9/15/2016
	8/29/2016	Letter from Atlantic to the Tribe, a MNF Tribal Partner, transmitting an updated draft archaeological survey report for the MNF. (Note: this letter also references an updated unanticipated discoveries plan for the MNF; however, a copy of the plan inadvertently was omitted from this submittal.)	9/15/2016
	10/4/2016	Letter from Atlantic to the Tribe, a MNF Tribal Partner, transmitting an updated unanticipated discoveries plan for the MNF. (Note: the updated plan inadvertently was omitted from a submittal on 8/29/2016.)	10/31/2016
<sup>a</sup>	In addition to the communications listed above, Atlantic provided copies of draft survey reports and unanticipated finds plans for the MNF (by letters dated 10/28/2015, 8/29/2016, and 10/4/2016) to the Oneida Indian Nation and Onondaga Nation, both of whom are MNF Tribal Partners.		

TABLE V-2

Summary of Communications with State Recognized Indian Tribes for the Atlantic Coast Pipeline <sup>a</sup>

Tribe	Date	Summary	Filed to the Docket
VIRGINIA			
Cheroenhaka (Nottoway) Tribe	10/18/2016	Letter from Atlantic to the Tribe transmitting updated route maps and requesting comments on the ACP.	10/31/2016
	5/3/2017	Meeting of Virginia tribes and Dominion about ACP project impacts	5/26/2017
Chickahominy Tribe	10/18/2016	Letter from Atlantic to the Tribe transmitting updated route maps and requesting comments on the ACP.	10/31/2016
	5/3/2017	Meeting of Virginia tribes and Dominion about ACP project impacts	5/26/2017
Eastern Chickahominy Tribe	4/24/2015	Initial letter from Atlantic to the Tribe requesting comments on the ACP.	9/18/2015
	10/18/2016	Follow-up letter from Atlantic to the Tribe transmitting updated route maps and renewing the request for comments on the ACP.	10/31/2016
Monacan Indian Nation	3/31/2015	Letter from the Tribe to the FERC opposing construction of the ACP through Nelson County, Virginia, and requesting a Traditional Cultural Properties study.	4/6/2015
	4/24/2015	Initial letter from Atlantic to the Tribe requesting comments on the ACP.	9/18/2015
	10/18/2016	Follow-up letter from Atlantic to the Tribe transmitting updated route maps and renewing the request for comments on the ACP.	10/31/2016
Mattaponi Tribe	5/3/2017	Meeting of Virginia tribes and Dominion about ACP project impacts	5/26/2017
	4/24/2015	Initial letter from Atlantic to the Tribe requesting comments on the ACP.	9/18/2015
	10/18/2016	Follow-up letter from Atlantic to the Tribe transmitting updated route maps and renewing the request for comments on the ACP.	10/31/2016
Nansemond Tribe	5/3/2017	Meeting of Virginia tribes and Dominion about ACP project impacts	5/26/2017
	4/24/2015	Initial letter from Atlantic to the Tribe requesting comments on the ACP.	9/18/2015
	10/18/2016	Follow-up letter from Atlantic to the Tribe transmitting updated route maps and renewing the request for comments on the ACP.	10/31/2016
Nottoway Tribe	4/24/2015	Initial letter from Atlantic to the Tribe requesting comments on the ACP.	9/18/2015
	5/3/2017	Meeting of Virginia tribes and Dominion about ACP project impacts	5/26/2017
	10/18/2016	Follow-up letter from Atlantic to the Tribe transmitting updated route maps and renewing the request for comments on the ACP.	10/31/2016
Patawomeck Tribe	4/24/2015	Initial letter from Atlantic to the Tribe requesting comments on the ACP.	9/18/2015
	10/18/2016	Follow-up letter from Atlantic to the Tribe transmitting updated route maps and renewing the request for comments on the ACP.	10/31/2016
Rappahannock Tribe	4/24/2015	Initial letter from Atlantic to the Tribe requesting comments on the ACP.	9/18/2015
	10/18/2016	Follow-up letter from Atlantic to the Tribe transmitting updated route maps and renewing the request for comments on the ACP.	10/31/2016
Upper Mattaponi	4/24/2015	Initial letter from Atlantic to the Tribe requesting comments on the ACP.	9/18/2015
	10/18/2016	Follow-up letter from Atlantic to the Tribe transmitting updated route maps and renewing the request for comments on the ACP.	10/31/2016
	5/3/2017	Meeting of Virginia tribes and Dominion about ACP project impacts	5/26/2017

TABLE V-2 (cont'd)

**Summary of Communications with State Recognized Indian Tribes for the Atlantic Coast Pipeline <sup>a</sup>**

Tribe	Date	Summary	Filed to the Docket
<b>NORTH CAROLINA</b>			
Coharie Tribe	4/24/2015	Initial letter from Atlantic to the Tribe requesting comments on the ACP.	9/18/2015
	10/18/2016	Follow-up letter from Atlantic to the Tribe transmitting updated route maps and renewing the request for comments on the ACP.	10/31/2016
Haliwa-Saponi Indian Tribe	10/17/2014	Initial letter from Atlantic to the Tribe requesting comments on the ACP.	9/18/2015
	1/26/2015	Letter from the Tribe to FERC expressing support for the ACP.	2/5/2015
	9/15/2016	Minutes from a meeting to discuss the ACP.	10/17/2016
	10/18/2016	Follow-up letter from Atlantic to the Tribe transmitting updated route maps and renewing the request for comments on the ACP.	10/31/2016
Lumbee Tribe of North Carolina	10/17/2014	Initial letter from Atlantic to the Tribe requesting comments on the ACP.	9/18/2015
	10/18/2016	Follow-up letter from Atlantic to the Tribe transmitting updated route maps and renewing the request for comments on the ACP.	10/31/2016
	10/31/2016	Email from Tribe to Atlantic requesting more detailed maps.	11/29/2016
	11/2/2016	Letter from Atlantic to the Tribe transmitting more detailed project maps.	11/29/2016
Meherrin Indian Tribe	4/24/2015	Initial letter from Atlantic to the Tribe requesting comments on the ACP.	9/18/2015
	10/18/2016	Follow-up letter from Atlantic to the Tribe transmitting updated route maps and renewing the request for comments on the ACP.	10/31/2016
Occaneechi Band of the Saponi Nation	4/24/2015	Initial letter from Atlantic to the Tribe requesting comments on the ACP.	9/18/2015
	10/18/2016	Follow-up letter from Atlantic to the Tribe transmitting updated route maps and renewing the request for comments on the ACP.	10/31/2016
Sappony Tribe	4/24/2015	Initial letter from Atlantic to the Tribe requesting comments on the ACP.	9/18/2015
	10/18/2016	Follow-up letter from Atlantic to the Tribe transmitting updated route maps and renewing the request for comments on the ACP.	10/31/2016
Waccamaw Siouan Tribe	4/24/2015	Initial letter from Atlantic to the Tribe requesting comments on the ACP.	9/18/2015
	10/18/2016	Follow-up letter from Atlantic to the Tribe transmitting updated route maps and renewing the request for comments on the ACP.	10/31/2016

<sup>a</sup> There are no state recognized tribes in West Virginia or Pennsylvania.

## **APPENDIX W**

### **CUMULATIVE IMPACTS**

**TABLE W-1 PAST, PRESENT, AND REASONABLY FORESEEABLE  
FUTURE ACTIONS WITHIN THE GEOGRAPHIC SCOPE OF  
INFLUENCE FOR THE ATLANTIC COAST PIPELINE AND  
SUPPLY HEADER PROJECT**

**FIGURE W-1 POTENTIAL EFFECT ZONE FOR CUMULATIVE IMPACTS**

**TABLE W-1 PAST, PRESENT, AND REASONABLY FORESEEABLE  
FUTURE ACTIONS WITHIN THE GEOGRAPHIC SCOPE OF  
INFLUENCE FOR THE ATLANTIC COAST PIPELINE AND  
SUPPLY HEADER PROJECT**

TABLE W-1

**Past, Present, and Reasonably Foreseeable Future Actions within the Geographic Scope of Influence for the Atlantic Coast Pipeline and Supply Header Project**

Project/ Facility	Project Name	Proponent	Common Counties/Cities	Description	Nearest Approx. Milepost or Facility	Approx. Distance and Direction from Project	Status	Past, Present, or RFFA <sup>a</sup>
<b>ATLANTIC COAST PIPELINE</b>								
<b>FERC-Jurisdictional Projects</b>								
AP-1	Mountain Valley Pipeline Project	EQT Midstream Partners, LP	Harrison, Lewis	See section 4.13.2.2	0.0	0.7 mile northwest	Anticipated in-service December 2018	Present
AP-1	Virginia Southside Expansion Project	Transcontinental Gas Pipe Line Company, LLC	Brunswick	See section 4.13.2.2	0.6	0.3 mile west	Completed September 2015	Past
AP-1	Virginia Southside Expansion Project II	Transcontinental Gas Pipe Line Company, LLC	Brunswick	See section 4.13.2.2	0.6	0.3 mile west	Anticipated completion Winter 2017	Present
AP-1	WB Xpress Project	Columbia Gas Transmission, LLC	Randolph	See section 4.13.2.2	55-56	<0.25 mile	Anticipated to start in January 2017; in-service June and October 2018	Present
<b>Nonjurisdictional Projects</b>								
AP-1	Atlantic Coast Pipeline Utility Services	Atlantic Coast Pipeline, LLC	Lewis	Utility services for Compressor Station 1	7.5	Compressor Station 1	To coincide with construction of Compressor Station 1	Present
AP-1	Atlantic Coast Pipeline, Pipeline Relocation and Road Upgrade	Atlantic Coast Pipeline, LLC	Lewis	Upgrade an existing road within/near Compressor Station 1	7.5	Compressor Station 1	To coincide with construction of Compressor Station 1	Present
AP-1	Atlantic Coast Pipeline Communications Network	Atlantic Coast Pipeline, LLC	Lewis	Microwave tower at Compressor Station 1	7.5	Compressor Station 1	To coincide with construction of Compressor Station 1	Present
AP-1	Atlantic Coast Pipeline Communications Network	Atlantic Coast Pipeline, LLC	Randolph	Microwave tower at the Long Run M&R Station	47.3	Long Run M&R Station	To coincide with construction of the Long Run M&R Station	Present
AP-1	Atlantic Coast Pipeline Utility Services	Atlantic Coast Pipeline, LLC	Buckingham	Utility services for Compressor Station 2	191.5	Compressor Station 2	To coincide with construction of Compressor Station 2	Present
AP-1	Atlantic Coast Pipeline Communications Network	Atlantic Coast Pipeline, LLC	Buckingham	Microwave tower at Compressor Station 2	191.5	Compressor Station 2	To coincide with construction of Compressor Station 2	Present
AP-1	Atlantic Coast Pipeline Communications Network	Atlantic Coast Pipeline, LLC	Prince Edward	Microwave tower at or adjacent to Valve Site 12	225.8	Valve Site 12	To coincide with construction of MLV 12	Present
AP-1	Atlantic Coast Pipeline Communications Network	Atlantic Coast Pipeline, LLC	Nottoway	Microwave tower at or adjacent to Valve Site 13	245.2	Valve Site 13	To coincide with construction of MLV 13	Present

TABLE W-1 (cont'd)

**Past, Present, and Reasonably Foreseeable Future Actions within the Geographic Scope of Influence for the Atlantic Coast Pipeline and Supply Header Project**

Project/ Facility	Project Name	Proponent	Common Counties/Cities	Description	Nearest Approx. Milepost or Facility	Approx. Distance and Direction from Project	Status	Past, Present, or RFFA <sup>a</sup>
AP-2	Atlantic Coast Pipeline Office Building	Atlantic Coast Pipeline, LLC	Northampton	A new office building for pipeline operations to be built on the same site as Compressor Station 2	0.0	Compressor Station 3	To coincide with construction of Compressor Station 3	Present
AP-2	Atlantic Coast Pipeline Utility Services	Atlantic Coast Pipeline, LLC	Northampton	Utility services for Compressor Station 3 and office building	0.0	Compressor Station 3	To coincide with construction of Compressor Station 3	Present
AP-2	Atlantic Coast Pipeline Communications Network	Atlantic Coast Pipeline, LLC	Northampton	Microwave tower at Compressor Station 3	0.0	Compressor Station 3	To coincide with construction of Compressor Station 3	Present
AP-2	Atlantic Coast Pipeline Office Building	Atlantic Coast Pipeline, LLC	Johnston	A new office building for pipeline operations to be built on the same site as the Smithfield M&R Station	92.7	Smithfield M&R Station	To coincide with construction of the M&R station	Present
AP-2	Atlantic Coast Pipeline Utility Services	Atlantic Coast Pipeline, LLC	Johnston	Utility services for the Smithfield M&R Station and office	92.7	Smithfield M&R Station	To coincide with construction of the M&R Station	Present
AP-2	Atlantic Coast Pipeline Communications Network	Atlantic Coast Pipeline, LLC	Johnston	Microwave tower at the Smithfield M&R Station	92.7	Smithfield M&R Station	To coincide with construction of the M&R Station	Present
AP-2	Piedmont Facility Modifications	Piedmont Natural Gas	Johnston	Piping modifications and additions for interconnect at the Smithfield M&R Station	92.7	Smithfield M&R Station	Construction in Winter 2018	Present
AP-2	Piedmont Facility Modifications	Piedmont Natural Gas	Cumberland	Piping modifications and additions for the interconnect at the Fayetteville M&R Station	132.9	Fayetteville M&R Station	Construction in Winter 2018	Present
AP-2	Atlantic Coast Pipeline Utility Services	Atlantic Coast Pipeline, LLC	Cumberland	Utility services for the Fayetteville M&R Station	132.9	Fayetteville M&R Station	To coincide with construction of the M&R Station	Present
AP-2	Atlantic Coast Pipeline Communications Network	Atlantic Coast Pipeline, LLC	Cumberland	Microwave tower at the Fayetteville M&R Station	132.9	Fayetteville M&R Station	To coincide with construction of ACP aboveground facilities	Present
AP-2	Piedmont Pipeline	Piedmont Natural Gas	Robeson	26 miles of 20-inch natural gas pipeline	182.9	Crosses; Pembroke M&R Station	Anticipated Winter 2018	Present
AP-2	Piedmont Aboveground Facilities	Piedmont Natural Gas	Robeson	Piping modifications and additions for the interconnect at the Pembroke M&R Station	182.9	Pembroke M&R Station	Construction in Winter 2018	Present

TABLE W-1 (cont'd)

**Past, Present, and Reasonably Foreseeable Future Actions within the Geographic Scope of Influence for the Atlantic Coast Pipeline and Supply Header Project**

Project/ Facility	Project Name	Proponent	Common Counties/Cities	Description	Nearest Approx. Milepost or Facility	Approx. Distance and Direction from Project	Status	Past, Present, or RFFA <sup>a</sup>
AP-2	Atlantic Coast Pipeline Utility Services	Atlantic Coast Pipeline, LLC	Robeson	Utility services for the Pembroke M&R Station	182.9	Pembroke M&R Station	To coincide with construction of the M&R Station	Present
AP-2	Atlantic Coast Pipeline Communications Network	Atlantic Coast Pipeline, LLC	Robeson	Microwave tower at the Pembroke M&R Station	182.9	Pembroke M&R Station	To coincide with construction of the M&R Station	Present
AP-3	Atlantic Coast Pipeline Utility Services	Atlantic Coast Pipeline, LLC	Chesapeake	Utility services for the Elizabeth River M&R Station	82.6	Elizabeth River M&R Station	To coincide with construction of the M&R Station	Present
AP-3	Atlantic Coast Pipeline Communications Network	Atlantic Coast Pipeline, LLC	Chesapeake	Microwave tower at the Elizabeth River M&R Station	82.6	Elizabeth River M&R Station	To coincide with construction of the M&R Station	Present
AP-3	Virginia Natural Gas pipeline	Virginia Natural Gas	Chesapeake	Approximately 5 miles of 20- inch-diameter natural gas pipeline	Unknown	Unknown	Anticipated in 2017	Present
AP-4	Brunswick Power Station	Dominion Virginia Power	Brunswick	1.358-megawatt, natural gas- fired power station	0.6	Brunswick M&R Station	Completed Summer 2016	Past
AP-4	Atlantic Coast Pipeline Utility Services	Atlantic Coast Pipeline, LLC	Brunswick	Utility services for the Brunswick M&R Station	0.6	Brunswick M&R Station	To coincide with construction of the M&R Station	Present
AP-4	Atlantic Coast Pipeline Communications Network	Atlantic Coast Pipeline, LLC	Brunswick	Microwave tower at the Brunswick M&R Station	0.6	Brunswick M&R Station	To coincide with construction of the M&R Station	Present
AP-5	Greensville Power Station	Dominion Virginia Power	Greensville	1,600-megawatt natural gas- fueled power station	1.0	Greensville M&R Station	Anticipated construction mid-2016 and completion by 2019	Present
AP-5	Atlantic Coast Pipeline Utility Services	Atlantic Coast Pipeline, LLC	Greensville	Utility services for the Greensville M&R Station	1.0	Greensville M&R Station	To coincide with construction of the M&R Station	Present
AP-5	Atlantic Coast Pipeline Communications Network	Atlantic Coast Pipeline, LLC	Greensville	Microwave tower at the Greensville M&R Station	1.0	Greensville M&R Station	To coincide with construction of the M&R Station	Present
TL-635	Supply Header Project	Dominion Transmission, Inc.	Wetzel	Electric distribution line	0.0	Mockingbird Hill Compressor Station	To coincide with modifications at existing compressor station	Present

TABLE W-1 (cont'd)

**Past, Present, and Reasonably Foreseeable Future Actions within the Geographic Scope of Influence for the Atlantic Coast Pipeline and Supply Header Project**

Project/ Facility	Project Name	Proponent	Common Counties/Cities	Description	Nearest Approx. Milepost or Facility	Approx. Distance and Direction from Project	Status	Past, Present, or RFFA <sup>a</sup>
<b>Residential, Commercial, Industrial, and Municipal Developments</b>								
AP-1	Northwest Lewis Water Extension	Lewis County Commission	Lewis	Extension of water service to homes located in areas served by individual wells	4.0	0.9 mile south	Construction schedule unknown	RFFA
AP-1	Upshur County Development Authority Industrial Park	Upshur County Development Authority	Upshur	Improvements to the industrial park including water, sewer, and gas service	26.2	4.6 miles northeast	In progress	Past
AP-1	Linwood-Snowshoe Wastewater Project	Pocahontas Public Service District	Pocahontas	Construction of a new wastewater treatment system	69.4	0.6 mile east	Construction schedule unknown	RFFA
AP-1	Stone Valley Planned Unit Development	Unknown	Augusta	Remaining portion of a mixed-use planned unit development, including 247 townhouse lots and 128 single family residential lots	145.9	Crossed	Completed	Past
AP-1	Wintergreen Resort	Wintergreen Pacific LLC and Pacific Group Resorts	Nelson	Luxury hotel	159.0	<0.25 mile east	2016 with a projected opening in 2017	RFFA
AP-1	Spruce Creek Resort and Market	Nelson Hilltop, LLC and Rockfish Valley Investments, LLC	Nelson	Approximately 100-acre resort and market development straddling Spruce Creek	162.5 - 162.7	Crosses	Construction schedule unknown	RFFA
AP-1	Water Treatment Plant Project	Water and Sewer Committee	Buckingham	Construction of a new water treatment facility	198.0	3.8 miles northwest	In progress	Past
AP-1	Foreign Affairs Security Training Center	U.S. Department of State	Dinwiddie	Training center for diplomatic security personnel within Fort Pickett	250.0	5.1 miles south-southwest	Construction schedule unknown	RFFA
AP-1	Greensville Power Station	County	Greensville	Road improvements and utilities	284.0	Crossed	Construction schedule unknown	RFFA
AP-2	Halifax Solar Power Project	Duke Energy Renewables	Halifax	20-megawatt (alternating current) solar project	12.0	7.4 miles northwest	In progress	RFFA
AP-2	Bone Development, Inc.	Bone Development, Inc.	Nash	Residential development	50.8	Crossed	Construction schedule unknown	RFFA
AP-2	Elm City Solar Facility	Duke Energy	Wilson	Expansion of existing solar facility	60.0	9.5 miles southeast	Completed 2016	Past
AP-2	TR Lamm Subdivision	TR Lamm Subdivision	Wilson	10 to 11 planned platted lots	67.8	Crossed	Construction schedule unknown	RFFA
AP-2	McClauren Subdivision	McClauren Subdivision	Cumberland	36-lot residential development	131.6	Crossed	Construction schedule unknown	RFFA

TABLE W-1 (cont'd)

**Past, Present, and Reasonably Foreseeable Future Actions within the Geographic Scope of Influence for the Atlantic Coast Pipeline and Supply Header Project**

Project/ Facility	Project Name	Proponent	Common Counties/Cities	Description	Nearest Approx. Milepost or Facility	Approx. Distance and Direction from Project	Status	Past, Present, or RFFA <sup>a</sup>
AP-2	St. Pauls Johnson Brothers Facility	Johnson Brothers Utility and Paving Company	Robeson	New asphalt plant	166.6	2.2 miles southeast	Phase I completed in July 2014	Past
AP-2	Chemtex Cellulosic Biofuel Plant	Chemtex	Sampson	New biofuel plant facility	Unknown	Unknown	Planned; Construction schedule unknown	RFFA
AP-2	Enviva Project	Enviva	Sampson	New wood pellet production facilities	Unknown	Unknown	Anticipated completion in 2017	Present
AP-3	Market Street SAVE Project	Virginia Natural Gas	Suffolk	Replacement of 20,000 feet of main and service lines	60.7	4.4 miles south	Construction schedule unknown	RFFA
AP-3	Planter's Station	Planters Station LLC	Suffolk	Planned residential development, +200 homes	63.1	0.4 mile south	Completed 2016	Past
AP-3	Bridlewood Estates	Bridlewood Estates	Suffolk	Recently constructed residential development	65.8	0.1 mile south	Completed	Past
AP-3	Copart Auto Auction Expansion	Copart Auto Auction	Suffolk	Southward extension of auto auction yard	68.8	1.2 miles southwest	Planned; Construction schedule unknown	RFFA
AP-3	Red Top Raw Water Main	City of Chesapeake	Chesapeake	Water main	68.9	Adjacent	Construction schedule unknown	RFFA
AP-3	Red Top Raw Water Transmission Main	City of Chesapeake	Suffolk	Installation of a raw water tank and pump station, a 1-million gallon concrete ground storage tank, site piping, and other site improvements.	63.9 - 66.8	Adjacent, <0.25 mile	Completed	Past
AP-3	Future connection between Colony Manor and future regional stormwater facility	City of Chesapeake	Chesapeake	Stormwater line	76.0	0.1 mile north	Construction schedule unknown	RFFA
AP-3	Co-Part Auto Auction Expansion	Copart	Chesapeake	Lot expansion	76.6	0.1 mile north	Construction schedule unknown	RFFA
AP-3	W.L. Black & Associates Waste Transfer	W.L. Black & Associates	Chesapeake	Conditional Use Permit	78.6	0.1 mile north	Construction schedule unknown	RFFA
AP-3	WL Black and Associates Waste Transfer Facility	WL Black and Associates	Chesapeake	Waste water transfer facility	78.5	0.1 mile north	Construction schedule unknown	RFFA
AP-3	City of Chesapeake Future Stormwater Outfall and Related Facilities	City of Chesapeake	Chesapeake	Stormwater outfall improvements and associated activities	79.9	<0.25 mile north	Phased construction starting in 2015	Past
AP-3	Chesapeake Energy Center Decommissioning/ Fly Ash Removal	Dominion Virginia Power	Chesapeake	Decommissioning of four coal-fired generating units and removal of fly ash stored at the site	81.5	0.1 mile south	Construction schedule unknown	RFFA

TABLE W-1 (cont'd)

**Past, Present, and Reasonably Foreseeable Future Actions within the Geographic Scope of Influence for the Atlantic Coast Pipeline and Supply Header Project**

Project/ Facility	Project Name	Proponent	Common Counties/Cities	Description	Nearest Approx. Milepost or Facility	Approx. Distance and Direction from Project	Status	Past, Present, or RFFA <sup>a</sup>
AP-3	Military Highway 36-inch-diameter water main	City of Chesapeake	Chesapeake	Construction of water main	81.5	<0.2 mile north	Construction schedule unknown	RFFA
AP-3	Battlefield Boulevard Pressure Improvement	Virginia Natural Gas	Chesapeake	Install new 6-inch-diameter pipeline	82.6	2.1 miles southeast	Completed	Past
AP-3	Suffolk Gate 1 Heater Installation	Virginia Natural Gas	Suffolk	Installation of water bath for heating gas	Unknown	Unknown	Construction schedule unknown	RFFA
AP-5	Dominion Power Plant road and sewer lines (nonjurisdictional activities)	Dominion Virginia Power	Greensville	Installation of road and sewer lines	1.0	Adjacent (south)	Proposed; activities will likely coincide with construction of the ACP	Present
<b>Transportation Projects <sup>c</sup></b>								
AP-1	Route 633 (Virso Road) Bridge Replacement over Bush River	Virginia Department of Transportation	Prince Edward	Bridge replacement	22.7	15.1 miles southwest	In progress; completion date unknown	Past
AP-1	Route 687(Jackson River Turnpike) – Cowardin Run Bridge Replacement	Virginia Department of Transportation	Bath	Bridge replacement	94.1	14.0 miles southwest	Completed in November 2014	Past
AP-1	Route 250 (Highland Turnpike) – Crab Run Bridge Replacement	Virginia Department of Transportation	Highland	Widening of existing bridge	114.0	9.7 miles west	Completed in November 2012	Past
AP-1	Augusta County – Route 250 (Shenandoah Mountain Road) Ramseys Draft Bridge Replacement	Virginia Department of Transportation	Augusta	Bridge replacement	115.0	1.5 miles northwest	Completed in Spring 2015	Past
AP-1	Augusta County – Route 250 (Hankey Mountain Highway) Calfpasture River Bridge Replacement	Virginia Department of Transportation	Augusta	Bridge replacement	116.3	0.5 mile south	Completed in Spring 2015	Past
AP-1	Augusta County – Route 250 (Hankey Mountain Highway) White Oak Draft Bridge	Virginia Department of Transportation	Augusta	Bridge replacement	120.2	0.5 mile south-southeast	Completed in Spring 2016	Past
AP-1	Augusta County – Route 616 (Dam Tower Road)	Virginia Department of Transportation	Augusta	Two-mile-long road widening	128.9	10.5 miles east	Anticipated in Summer 2018	Present

TABLE W-1 (cont'd)

**Past, Present, and Reasonably Foreseeable Future Actions within the Geographic Scope of Influence for the Atlantic Coast Pipeline and Supply Header Project**

Project/ Facility	Project Name	Proponent	Common Counties/Cities	Description	Nearest Approx. Milepost or Facility	Approx. Distance and Direction from Project	Status	Past, Present, or RFFA <sup>a</sup>
AP-1	Augusta County – Route 801 (Hangers Mill Road) Jennings Branch Bridge	Virginia Department of Transportation	Augusta	Replacement of truss bridge with new structure	129.2	0.5 mile east	Completed in 2015	Past
AP-1	Augusta County – Route 250 (Churchville Avenue) – Bridge Replacement Over Whiskey Creek	Virginia Department of Transportation	Augusta	Replacement of two-lane bridge	129.2	0.5 mile west	Under construction; to be completed September 2017	Past
AP-1	Augusta County – Route 612 and Route 792 Intersection Improvements	Virginia Department of Transportation	Augusta	Improve intersection alignments	131.0	8.2 miles west-northwest	Anticipated in Spring 2016; status unknown	Past
AP-1	Augusta County – Route 262 (Woodrow Wilson Parkway) and Route 613 (Spring Hill Road)	Virginia Department of Transportation	Augusta	Intersection improvement project	131.1	4.8 miles east	Construction pending funding	RFFA
AP-1	Augusta County – Interstate 81 Southbound Pavement Rehabilitation	Virginia Department of Transportation	Augusta	Repaving of 1.5 miles of Interstate 81	140.9	Crosses	Completed in Summer 2015	Past
AP-1	Augusta County – Interstate 64, Exit 91 Improvements and Route 285 (Tinkling Spring Road)	Virginia Department of Transportation	Augusta	Improvements to entrance/exit ramps, expanding lanes near intersection, bridge widening	144.0	3.2 miles northeast	Completed in Fall 2015	Past
AP-1	Augusta County – Route 608 (Tinkling Springs Road)	Virginia Department of Transportation	Augusta	Intersection improvement project	144.0	2.5 miles northeast	Completed in December 2015	Past
AP-1	Augusta County – Route 610 Improvements	Virginia Department of Transportation	Augusta	Half-mile-long road widening	146.5	0.5 mile southeast	Anticipated in 2017 and 2018	Present
AP-1	Route 29 Shoulder Widening, Nelson County	Virginia Department of Transportation	Nelson	Shoulder widening at various locations from intersection with Highway 6 (River Road) to the north at the Albemarle County border.	169.0	0.7 mile southwest	Completed	Past
AP-1	Route 623 (Stagebridge Road) Bridge Superstructure Replacement over Rockfish River	Virginia Department of Transportation	Nelson	Bridge replacement	170.7	1.1 miles northeast	Completed in September 2014	Past

TABLE W-1 (cont'd)

**Past, Present, and Reasonably Foreseeable Future Actions within the Geographic Scope of Influence for the Atlantic Coast Pipeline and Supply Header Project**

Project/ Facility	Project Name	Proponent	Common Counties/Cities	Description	Nearest Approx. Milepost or Facility	Approx. Distance and Direction from Project	Status	Past, Present, or RFFA <sup>a</sup>
AP-1	Route 20 (Constitution Route)	Virginia Department of Transportation	Buckingham	Intersection improvement	198.1	5.6 miles northeast	Completed August 2015	Past
AP-1	Route 20 over Slate River	Virginia Department of Transportation	Buckingham	Bridge replacement	198.1	8.7 miles northeast	In progress; anticipated completion in 2017	Present
AP-1	Route 460 Bridge Replacement	Virginia Department of Transportation	Nottoway	Bridge replacement	245.2	1.7 miles south	In progress; anticipated completion in Summer 2017	Present
AP-1	Route 708 (Namozine Road) Bridge Replacement	Virginia Department of Transportation	Dinwiddie	Bridge replacement	251.5	14.4 miles east	Anticipated in Fall 2017	Present
AP-1	Route 600/226 Roundabout and Route 1/226 Improvements	Virginia Department of Transportation	Dinwiddie	Two existing intersections will be replaced with roundabouts	255.7	22.5 miles northeast	In progress; estimated completion in Winter 2016	Past
AP-1	Route 633 Improvements	Virginia Department of Transportation	Greensville	Pavement replacement along 1.5 miles	291.0	2.2 miles southwest	Completed in August 2012	Past
AP-2	U.S. 158 Widening Project	North Carolina Department of Transportation	Halifax	Widening of U.S. 158 from the Interstate-95/North Carolina 46 interchange west of Garysburg to the Murfreesboro Bypass	8.2	Crosses	In development	RFFA
AP-2	U.S. 70 Corridor	North Carolina Department of Transportation	Johnston	Raleigh to Morehead City major road expansion from U.S. Highway to Interstate Highway	92.2	Crosses	In development	RFFA
AP-2	Fayetteville Outer Loop	North Carolina Department of Transportation	Cumberland	New road construction and existing road improvements	133.0	6.3 miles west	In progress – 2016 through 2020	Present
AP-2	I-95 Diverging Diamond Interchange in Lumberton	North Carolina Department of Transportation	Robeson	Intersection improvement project	178.0	9.2 miles south-southeast	Completed January 2017	Past
AP-2	Complete 540	North Carolina Department of Transportation	Johnston	Completion of Highway 540 toll road	Unknown	Unknown	Anticipated Spring 2018 to Spring 2022	Present
AP-3	Route 659 Bridge Over Flat Swamp Creek	Virginia Department of Transportation	Southampton	Bridge replacement	17.0	1.0 mile north	Completed November 2016	Past
AP-3	Route 35 Bridge Replacement over Tarrara Creek	Virginia Department of Transportation	Southampton	Bridge replacement	19.0	0.9 mile southeast	Estimated completion December 2017	Past

TABLE W-1 (cont'd)

**Past, Present, and Reasonably Foreseeable Future Actions within the Geographic Scope of Influence for the Atlantic Coast Pipeline and Supply Header Project**

Project/ Facility	Project Name	Proponent	Common Counties/Cities	Description	Nearest Approx. Milepost or Facility	Approx. Distance and Direction from Project	Status	Past, Present, or RFFA <sup>a</sup>
AP-3	Route 671 over Nottoway River	Virginia Department of Transportation	Southampton	Replacement of two major bridges	33.0	1.4 miles northwest	Anticipated Summer 2019 to Summer 2021	Present
AP-3	Route 671 Widening	Virginia Department of Transportation	Southampton	Widening from two to five lanes between Delaware and Shady Brooke Roads	33.0	1.3 miles north-northwest	Completed in September 2013	Past
AP-3	General Thomas Highway and Rose Valley Road widening	Virginia Department of Transportation	Southampton	Road widening to accommodate increased truck traffic	34.0	0.5 mile north	In progress through 2017 or 2018	Present
AP-3	Route 58/Holland Road Improvements	Virginia Department of Transportation	Suffolk	Widening two-lane road to five lanes, with bike lanes	57.3	4.1 miles south	Anticipated in Summer 2021	RFFA
AP-3	Route 460 Project in Southeast Virginia	Virginia Department of Transportation	Suffolk	Widening two-lane road to four lanes	59.0	Crosses	Anticipated; schedule unknown	RFFA
AP-3	I-64 High Rise Bridge Waterproof and Repair Deck	Virginia Department of Transportation	Chesapeake	Bridge repair and deck replacement	80.7	0.9 mile southeast	Estimated completion January 2018	Past
AP-3	Gilmerton Bridge Replacement	Virginia Department of Transportation	Chesapeake	Bridge replacement	81.9	<0.1 mile north	Completed in 2015	Past
AP-3	Dominion Boulevard Improvements	Virginia Department of Transportation	Chesapeake	Widening two-lane highway to four lanes	82.6	1.4 miles southeast	Estimated completion in April 2017	Past
<b>Electric Generation and Transmission Projects</b>								
AP-1	Oak Mound – Waldo Run 138 kV Transmission Project	Trans-Allegheny Interstate Line Company (TrAILCo), a FirstEnergy Company	Harrison	A new 18-mile-long 138 kV transmission line	8.6	9.7 miles northeast	Status unknown; was anticipated to be completed December 2015	Past
AP-1	Buckhannon – Glen Falls 138kV Transmission Project	Trans-Allegheny Interstate Line Company (TrAILCo), a FirstEnergy Company	Harrison, Lewis	New 138 kV transmission line	8.6	5.1 miles northeast	Status unknown; was anticipated to be completed December 2015	Past
AP-1	Dooms – Lexington Transmission Line Rebuild Project	Dominion	Augusta	Replacement of original 500 kV lattice-style transmission towers with new, galvanized steel towers between Lexington and Dooms	142.8	Crosses	Completed in December 2015	Past
AP-1	Brunswick Power Line	Dominion Virginia Power	Brunswick	13.5 miles of 500 kV electric transmission line	267.1 - 279.1	Adjacent	Completed Summer 2016	Past
AP-2	Rocky Mount – Wilson Transmission Line – Elm City Solar Facility	Duke Energy	Nash	Construction of electric transmission tap	60.0	10.0 miles east	Completed June 2016	Past

TABLE W-1 (cont'd)

**Past, Present, and Reasonably Foreseeable Future Actions within the Geographic Scope of Influence for the Atlantic Coast Pipeline and Supply Header Project**

Project/ Facility	Project Name	Proponent	Common Counties/Cities	Description	Nearest Approx. Milepost or Facility	Approx. Distance and Direction from Project	Status	Past, Present, or RFFA <sup>a</sup>
AP-2	Wilson –Zebulon 230 kV Line	Duke Energy	Wilson	Line rebuild	65.0	12.4 miles west	Completed in Summer 2015	Past
AP-2	Greenville – Zebulon 230 kV Line Relocation	Duke Energy	Wilson	Line relocation	70.0	11.7 miles east	Completed in Spring 2015	Past
AP-2	Black Creek-Wilson Line Switch	Duke Energy	Wilson	Install new line switch	70.0	8.8 miles east	Anticipated Winter 2016 through Summer 2017	Present
AP-2	Lee-Selma 115 kV Line	Duke Energy	Johnston	Line relocation	95.0	4.3 miles east	Anticipated Spring 2016 through Summer 2017	Present
AP-2	Erwin-Selma 230 kV Line	Duke Energy	Johnston	Line replacement	103.0	9.5 miles west	Anticipated 2017	Past
AP-2	Clinton-Erwin 230 kV Line	Duke Energy	Sampson	Line replacement	117.0	3.9 miles northwest	In progress; status unknown	Past
AP-2	Fort Bragg Woodruff – Manchester	Duke Energy	Cumberland	Install reconductor line	134.0	12.8 miles west	In progress – Fall 2014 through Spring 2017	Past
AP-2	Erwin-Fayetteville 115 kV – Change and Relocate	Duke Energy	Cumberland	Relocate structures for North Carolina Department of Transportation project	142.0	7.7 miles northwest	Completed in Spring 2015	Past
AP-2	Fayetteville Vander 115 kV Line – Tap to Vander	Duke Energy	Cumberland	Install new tap line	142.0	2.7 miles west	In progress; status unknown	Past
AP-2	Fayetteville Dupont 115 kV Line – Cumberland Solar	Duke Energy	Cumberland	Install new tap line	142.0	6.8 miles west	In progress; status unknown	Past
AP-2	Fayetteville Dupont 115 kV Line – Grays Creek Tap	Duke Energy	Cumberland	Install new tap line	142.0	6.8 miles west	Completed in Summer 2015	Past
AP-2	Fayetteville Dupont 115 kV Line – Line Switches	Duke Energy	Cumberland	Install line switches	142.0	6.8 miles west	In progress; status unknown	Past
AP-2	Weatherspoon Plant – Fayetteville Solar Farm Tap	Duke Energy	Robeson	Install tap for solar facility	167.0	2.8 miles southeast	In progress; status unknown	Past
AP-2	Weatherspoon Plant – Solar Tap	Duke Energy	Robeson	Install tap for solar facility	167.0	2.3 miles southeast	In progress; status unknown	Past
AP-2	Weatherspoon Plant – LOF 115 kV Structure Replace	Duke Energy	Robeson	Replace existing structures	170.0	10.6 miles south	Anticipated – Winter 2016 through Spring 2017	Past
AP-2	Weatherspoon- Raeford 230 kV Line Relocate	Duke Energy	Robeson	Line relocation	170.0	11.6 miles northwest	In progress – Summer 2015 through Fall 2018	Present

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TABLE W-1 (cont'd)

## Past, Present, and Reasonably Foreseeable Future Actions within the Geographic Scope of Influence for the Atlantic Coast Pipeline and Supply Header Project

Project/ Facility	Project Name	Proponent	Common Counties/Cities	Description	Nearest Approx. Milepost or Facility	Approx. Distance and Direction from Project	Status	Past, Present, or RFFA <sup>a</sup>
AP-2	Weatherspoon- Raeford 230 kV Line Replacement	Duke Energy	Robeson	Line replacement	170.0	Crosses	In progress – Summer 2015 through Spring 2017	Past
AP-2	Weatherspoon – LOF 115 kV	Duke Energy	Robeson	Convert to remote control	180.0	3.2 miles south	Completed	Past
<b>U.S. Forest Service Projects <sup>b</sup></b>								
AP-1	Upper Greenbrier North Project	U.S. Forest Service/Monongahela National Forest (MNF)	Pocahontas	Timber stand improvement (including mechanical and chemical methods), timber harvest and prescribed fire areas, road decommissioning, riparian restoration, and recreational trail improvements/expansions at various locations throughout the Upper Greenbrier River Watershed	85.8	11.4 miles north	Decision Notice/Finding of No Significant Impact No. 4 issued in May 2015; components of this project currently in various stages of implementation	Past
AP-1	Re-issuance of Forest- wide Outfitter and Guide Permit for Snowshoe Resort Management Categorical Exclusion (CE)	U.S. Forest Service/MNF	Pocahontas	Authorization for a new 10- year permit for commercial guiding for backpacking, hiking, mountain biking, snowshoeing, Nordic skiing, and fishing on various parts of the MNF.	Forestwide; see table 4.8.9-1	Forestwide; see table 4.8.9-1	Scoping Start 10/2016; Decision: 04/2017; Implementation: 04/2017	Past
AP-1	Wildlife Openings Environmental Assessment (EA)	U.S. Forest Service/MNF	Pocahontas	Maintenance of wildlife openings across the Forest through mowing, prescribed fire, herbicide, and other treatments, and will include long-term strategies for determining, prioritizing, and treating existing and new areas.	Forestwide; see table 4.8.9-1	Forestwide; see table 4.8.9-1	On hold	RFFA

TABLE W-1 (cont'd)

## Past, Present, and Reasonably Foreseeable Future Actions within the Geographic Scope of Influence for the Atlantic Coast Pipeline and Supply Header Project

Project/ Facility	Project Name	Proponent	Common Counties/Cities	Description	Nearest Approx. Milepost or Facility	Approx. Distance and Direction from Project	Status	Past, Present, or RFFA <sup>a</sup>
AP-1	Columbia Gas Road Right-of-Way Special Use Permit (Amendment 1) CE	U.S. Forest Service/MNF	Randolph	Columbia Gas Transmission, LLC has applied for an amendment (#1) to an existing permit for an access road not currently authorized. This access road already exists on the ground and needs maintenance, which would be addressed if appropriate.	73 - 83	Varies <sup>b</sup>	In Progress. Scoping Start 09/14/2016; Decision Expected: 06/2017; Implementation Expected: 06/2017	Past
AP-1	West Fork of Greenbrier Rail With Trail Development EA	U.S. Forest Service/MNF	Pocahontas	Grant the West Virginia State Rail Authority a long-term easement and authorization to return 27.2 miles of railroad right-of-way to active railroad status, and construct a parallel 21-mile trail segment.	73 - 83	Varies <sup>b</sup>	On hold	RFFA
AP-1	Forestwide Maintenance of Open and Semi Open Lands, Roadside Corridors, and Utility Rights-of-Way EA	U.S. Forest Service/George Washington National Forest (GWNF)	Highland, Bath, Augusta	Open maintenance of 14,000 acres of permanent grass and shrublands, 59,000 acres of road corridors, and 6,500 acres of existing gas and power line utility rights-of-way across the entire Forest	Forestwide; see table 4.8.9-1	Forestwide; see table 4.8.9-1	In Progress. Comment Period 10/03/2016; Decision Expected: 12/2017; Implementation Expected: 03/2018	RFFA
AP-1	Campground Concession Special Use Authorization (Re-Issue) CE	U.S. Forest Service/GWNF	Bath	The Lake Moomaw Recreation Areas concessionaire special use authorization will expire 12/31/16. A prospectus for concession-operated campgrounds, day use areas, and marina areas will be issued for reissuance of these special use permits.	93 – 106	Varies <sup>b</sup>	Developing Proposal. Scoping Start: 06/2016; Decision: 10/2016; Implementation: 01/2017	Past
AP-1	Loves Run Yellow Pine Restoration Project CE	U.S. Forest Service/GWNF	Augusta	Use prescribed fire and mechanical treatments to promote the restoration of Short Leaf and Pitch Pine species within a 266-acre (approximate) project area.	112 – 123; 155	Varies <sup>b</sup>	Developing Proposal. Scoping Start: 10/2016; Decision: 03/2017; Implementation Expected: 05/2017	RFFA
AP-1	Elkhorn Rx CE	U.S. Forest Service/GWNF	Bath	Prescribed burn on the 1,100 acre Elkhorn burn unit.	93 – 106	Varies <sup>b</sup>	On hold	RFFA

TABLE W-1 (cont'd)

## Past, Present, and Reasonably Foreseeable Future Actions within the Geographic Scope of Influence for the Atlantic Coast Pipeline and Supply Header Project

Project/ Facility	Project Name	Proponent	Common Counties/Cities	Description	Nearest Approx. Milepost or Facility	Approx. Distance and Direction from Project	Status	Past, Present, or RFFA <sup>a</sup>
AP-1	Hearthstone Dam Rehabilitation EA	U.S. Forest Service/GWNF	Augusta	Rehabilitation to bring the dam into State of Virginia compliance standards	112 – 123; 155	Varies <sup>b</sup>	Developing Proposal. Comment Period: 10/2016; Decision Expected: 12/2017; Implementation Expected: 03/2018	RFFA
AP-1	South Archer Project EA	U.S. Forest Service/GWNF	Augusta	Several hundred acres of thinning and regeneration treatments to improve wildlife habitat.	112 – 123; 155	Varies <sup>b</sup>	In Progress. Scoping Start: 08/03/2015; Comment Period: 01/2016; Decision Expected: 12/2017; Implementation Expected: 01/2018	RFFA
AP-1	Verizon Virginia Fiber Optic Line CE	U.S. Forest Service/GWNF	Augusta	Installation of Fiber Optic Line in existing utility corridor.	112 – 123; 155	Varies <sup>b</sup>	Developing Proposal. Scoping Start: 10/2016; Decision Expected: 10/2017; Implementation Expected: 10/2017	Past
AP-1	Wallace and Marshall Tracts Prescribed Burns CE	U.S. Forest Service/GWNF	Bath	Rx burn about 276 acres on the Wallace Tract and 56 acres on the Marshall Tract for wildlife habitat improvement and convert areas from cool season grasses to warm season grasses.	93 – 106	Varies <sup>b</sup>	In Progress. Scoping Start: 01/12/2015; Decision: 10/2015; Implementation: 01/2016	Past
AP-1	Border Restoration Project CE	U.S. Forest Service/GWNF	Bath	Prescribe burn 31,475 acres within 23 areas on National Forest and VDGIF property as part of the Appalachian Fire Learning Network.	93 – 106	Varies <sup>b</sup>	On hold	RFAA
AP-1	Fiber Optic Line on Warm Spring Mountain CE	U.S. Forest Service/GWNF	Bath	Bury approximately 12,000 feet of fiber optic cable in an existing utility corridor.	93 – 106	Varies <sup>b</sup>	Developing Proposal. Scoping Start: 07/2016; Decision: 09/2016; Implementation: 09/2016	Past
AP-1	Hidden Valley Campground Host Site Improvements CE	U.S. Forest Service/GWNF	Bath	Upgrade Hidden Valley Campground host with an electrical hookup.	93 – 106	Varies <sup>b</sup>	On hold	RFAA

TABLE W-1 (cont'd)

**Past, Present, and Reasonably Foreseeable Future Actions within the Geographic Scope of Influence for the Atlantic Coast Pipeline and Supply Header Project**

Project/ Facility	Project Name	Proponent	Common Counties/Cities	Description	Nearest Approx. Milepost or Facility	Approx. Distance and Direction from Project	Status	Past, Present, or RFFA <sup>a</sup>
AP-1	Lockridge Cross Region Collaborative Prescribe Burn Project CE	U.S. Forest Service/GWNF	Bath	Prescribe fire is proposed for multiple burn units totaling an estimated 12 acres in conjunction with a 1,239-acre prescribe burn on the Marlinton RD of the MNF in Region 9. This will be part of the Fire Learning Network.	93 – 106	Varies <sup>b</sup>	In Progress. Scoping Start: 10/13/2016; Decision: 12/2016; Implementation: 04/2017	Past
AP-1	Paddy Knob Early Successional Habitat CE	U.S. Forest Service/GWNF	Bath	Create early successional habitat in the vicinity of Paddy Knob.	93 – 106	Varies <sup>b</sup>	On hold	RFAA
<b>SUPPLY HEADER PROJECT</b>								
<b>FERC-Jurisdictional Projects</b>								
TL-635	Mountain Valley Pipeline Project	EQT Midstream Partners, LP	Harrison, Doddridge, Wetzel, Tyler,	See section 4.13.2.2	0.7	Crosses	Anticipated in-service December 2018	Present
TL-635	Rover Pipeline Project	Rover Pipeline LLC	Doddridge, Tyler	See section 4.13.2.2	11.7 - 11.9	Adjacent	Anticipated in-service date in 2017	Present
TL-635	Clarrington Project	Dominion Transmission, Inc.	Marshall	See section 4.13.2.2	Burch Ridge Compressor Station	Burch Ridge Compressor Station	Placed in-service November 2016	Past
TL-635	Monroe to Cornwell Project	Dominion Transmission, Inc.	Doddridge, Wetzel	See section 4.13.2.2	Mockingbird Hill Compressor Station	Mockingbird Hill Compressor Station	Placed in-service October 2016	Past
TL-636	Texas Eastern Appalachia Market 2014 Project	Texas Eastern Transmission, LP	Westmoreland	See section 4.13.2.2	0.0	3.5 miles southeast of TL-636; 7.6 miles southeast of the JB Tonkin Compressor Station	Completed in 2014	Past
TL-635	Mountaineer Xpress Project	Columbia Gas Transmission, LLC	Doddridge, Wetzel	See section 4.13.2.2	10.0	1 mile west	Anticipated to start in November 2017; in-service November 2018	Present

TABLE W-1 (cont'd)

**Past, Present, and Reasonably Foreseeable Future Actions within the Geographic Scope of Influence for the Atlantic Coast Pipeline and Supply Header Project**

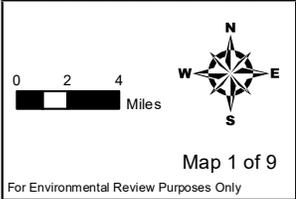
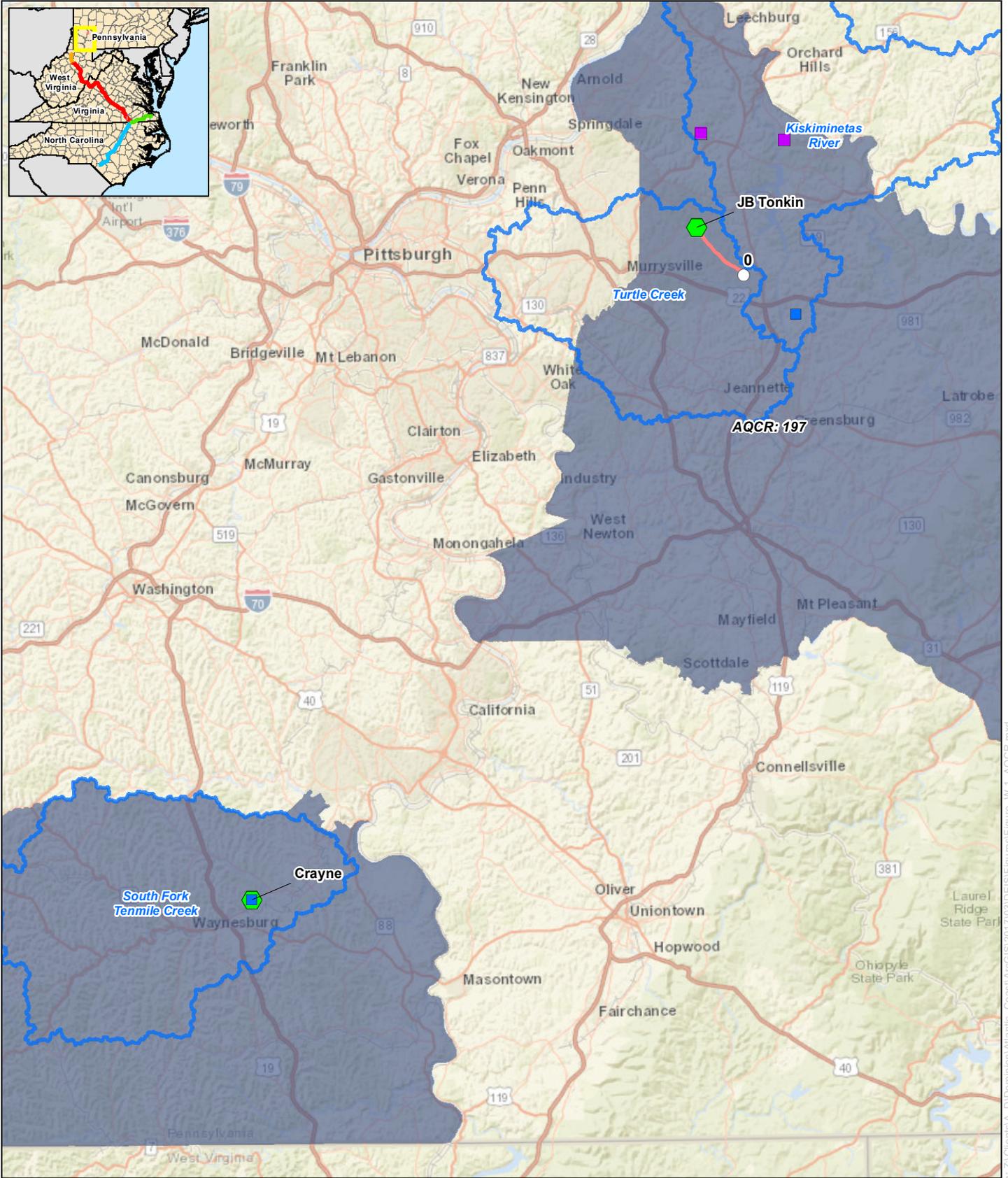
Project/ Facility	Project Name	Proponent	Common Counties/Cities	Description	Nearest Approx. Milepost or Facility	Approx. Distance and Direction from Project	Status	Past, Present, or RFFA <sup>a</sup>
TL-636	Natrium to Market Project	Dominion Transmission, Inc.	Greene, Westmoreland	See section 4.13.2.2	Crayne Compressor Station; JB Tonkin Compressor Station	Crayne Compressor Station; JB Tonkin Compressor Station	Completed 2014	Past
TL-635	Leach Xpress Project and Rayne Xpress Expansion Project	Columbia Gas Transmission, LLC and Columbia Gulf Transmission, LLC	Greene, Marshall	See section 4.13.2.2	33.5	15 miles northeast	Construction began February 2017	Past
<b>Nonjurisdictional Projects</b>								
TL-635	Hastings Compressor Station	Dominion Transmission, Inc.	Wetzel	Replace existing gathering compressor units	Mockingbird Hill Compressor Station	1.0 mile west of Mockingbird Hill Compressor Station	Proposed	RFFA
<b>Commercial, Industrial, and Municipal Developments</b>								
TL-635	Hundred Littleton Public Service District Extension	Wetzel County Commission	Wetzel	Extension of water service to areas in the Hundred Littleton Public Service District that currently rely on private wells and cisterns	32.5	13.0 miles northeast	Construction schedule unknown	RFFA
TL-635	Pine Grove Sewage Collector Project	Town of Pine Grove	Wetzel	Improvements to the Town of Pine Grove sewage collection system	Mockingbird Hill Compressor Station	1.2 miles north-northwest	Construction schedule unknown	RFFA
<b>Transportation Projects</b>								
TL-636	Jeannette to Amos K. Bypass	Pennsylvania Department of Transportation	Westmoreland	Road expansion project	3.8	6.7 miles northeast	Completed in 2013/2014	Past
TL-636	PA 66 Beaver Run to 356	Pennsylvania Department of Transportation	Westmoreland	Road resurfacing and widening	JB Tonkin Compressor Station	5.3 miles northeast	Completed in 2014	Past
<b>Electric Generation and Transmission Projects</b>								
TL-635	Buckhannon – Glen Falls 138kV Transmission Project	Trans-Allegheny Interstate Line Company (TrAILCo), a FirstEnergy Company	Harrison	New 138 kV transmission line from West Milford Substation to existing Buckhannon to Glen Falls 138 KV transmission line	0.0	8.5 miles east	Anticipated completion in December 2015; status unknown	Past

TABLE W-1 (cont'd)

**Past, Present, and Reasonably Foreseeable Future Actions within the Geographic Scope of Influence for the Atlantic Coast Pipeline and Supply Header Project**

Project/ Facility	Project Name	Proponent	Common Counties/Cities	Description	Nearest Approx. Milepost or Facility	Approx. Distance and Direction from Project	Status	Past, Present, or RFFA <sup>a</sup>
TL-635	Oak Mound – Waldo Run 138 kV Transmission Project	Trans-Allegheny Interstate Line Company (TrAILCo), a FirstEnergy company	Harrison, Doddridge	An 18-mile-long 138 kV transmission line from the existing Oak Mound Substation, located in the Clark District of Harrison County and the Waldo Run Substation	11.8	Crosses	Anticipated completion in December 2015; status unknown	Past
<sup>a</sup>	Past, Present, or Reasonably Foreseeable Future Action (RFFA) classification is based on the project's construction schedule in relation to Atlantic's and DETI's currently proposed schedules.							
<sup>b</sup>	Additional information about each project can be found at: <a href="http://www.fs.fed.us/sopa/forest-level.php?110921">http://www.fs.fed.us/sopa/forest-level.php?110921</a> for the MNF and at <a href="http://www.fs.fed.us/sopa/forest-level.php?110808">http://www.fs.fed.us/sopa/forest-level.php?110808</a> for the GWNF.							
<sup>c</sup>	We also received comments from the VDOT regarding several planned roadway projects that would intersect or be near the ACP (VDOT, 2017). However, the timeframe in which these projects would occur is unknown.							

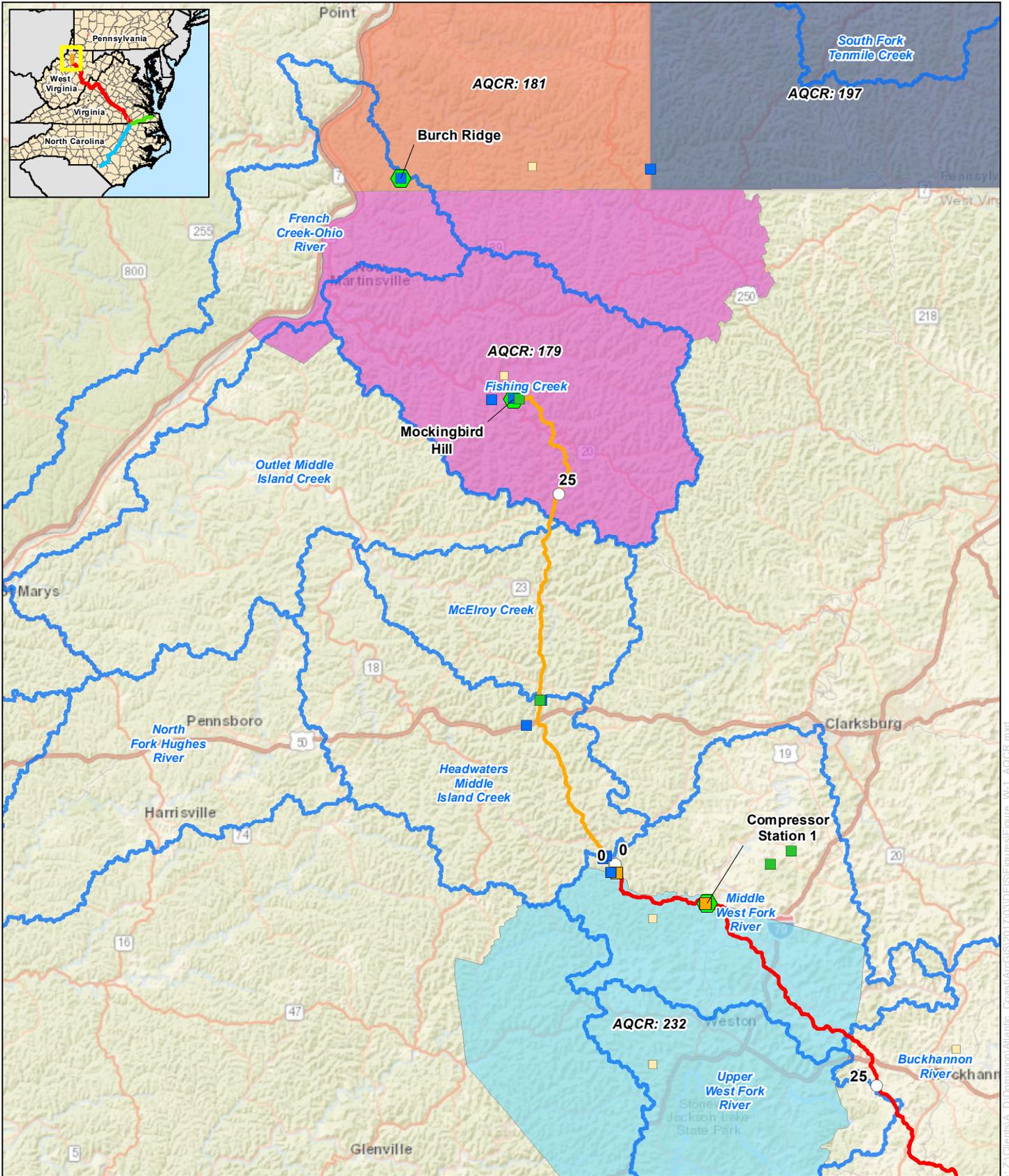
**FIGURE W-1 POTENTIAL EFFECT ZONE FOR CUMULATIVE IMPACTS**



**Figure W-1**  
**Potential Effect Zone for Cumulative Impacts**  
**Atlantic Coast Pipeline and Supply Header Project**

○ Milepost	■ Comm/Ind/Mun	■ Electric Transmission	■ SHP Proposed Route (TL-635)
● Compressor Station	■ FERC-Jurisdictional	■ Nonjurisdictional	■ SHP Proposed Route (TL-636)
▲ M and R Station	■ Residential	■ Transportation	■ ACP Proposed Route (AP-1)
■ Watershed Boundary (HUC 10)	■ USFS		■ ACP Proposed Route (AP-2)
■ AQCR = Air Quality Control Region			■ ACP Proposed Route (AP-3)
			■ ACP Proposed Route (AP-4)
			■ ACP Proposed Route (AP-5)

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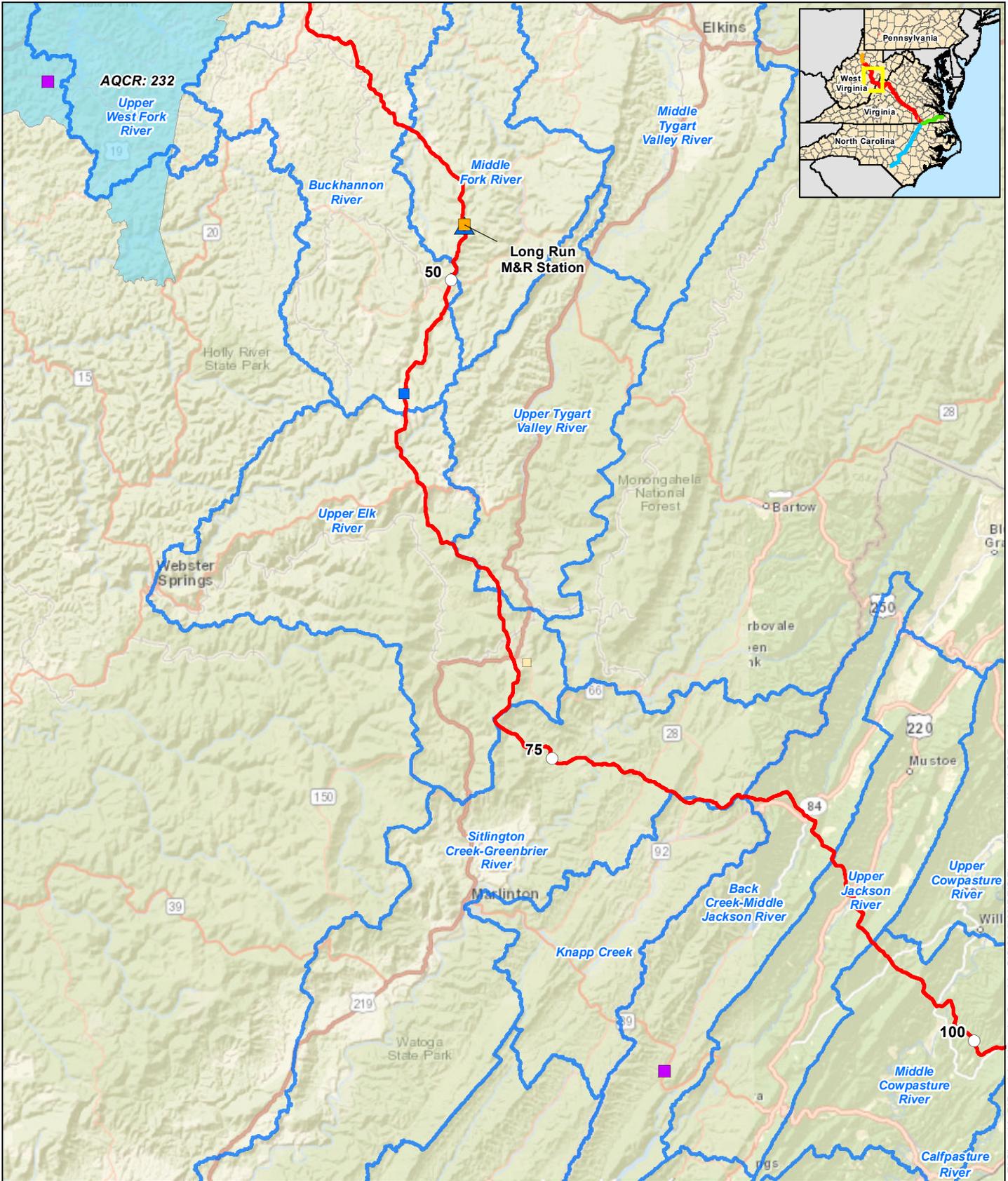
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Map 2 of 9  
For Environmental Review Purposes Only

**Figure W-1**  
**Potential Effect Zone for Cumulative Impacts**  
**Atlantic Coast Pipeline and Supply Header Project**

○ Milepost	■ Comm/Ind/Mun	■ Electric Transmission	■ SHP Proposed Route (TL-635)
● Compressor Station	■ FERC-Jurisdictional	■ Nonjurisdictional	■ SHP Proposed Route (TL-636)
▲ M and R Station	■ Residential	■ Transportation	■ ACP Proposed Route (AP-1)
■ Watershed Boundary (WUC 10)	■ USFS	■ USFS	■ ACP Proposed Route (AP-2)
■ AQCR = Air Quality Control Region			■ ACP Proposed Route (AP-3)
			■ ACP Proposed Route (AP-4)
			■ ACP Proposed Route (AP-5)

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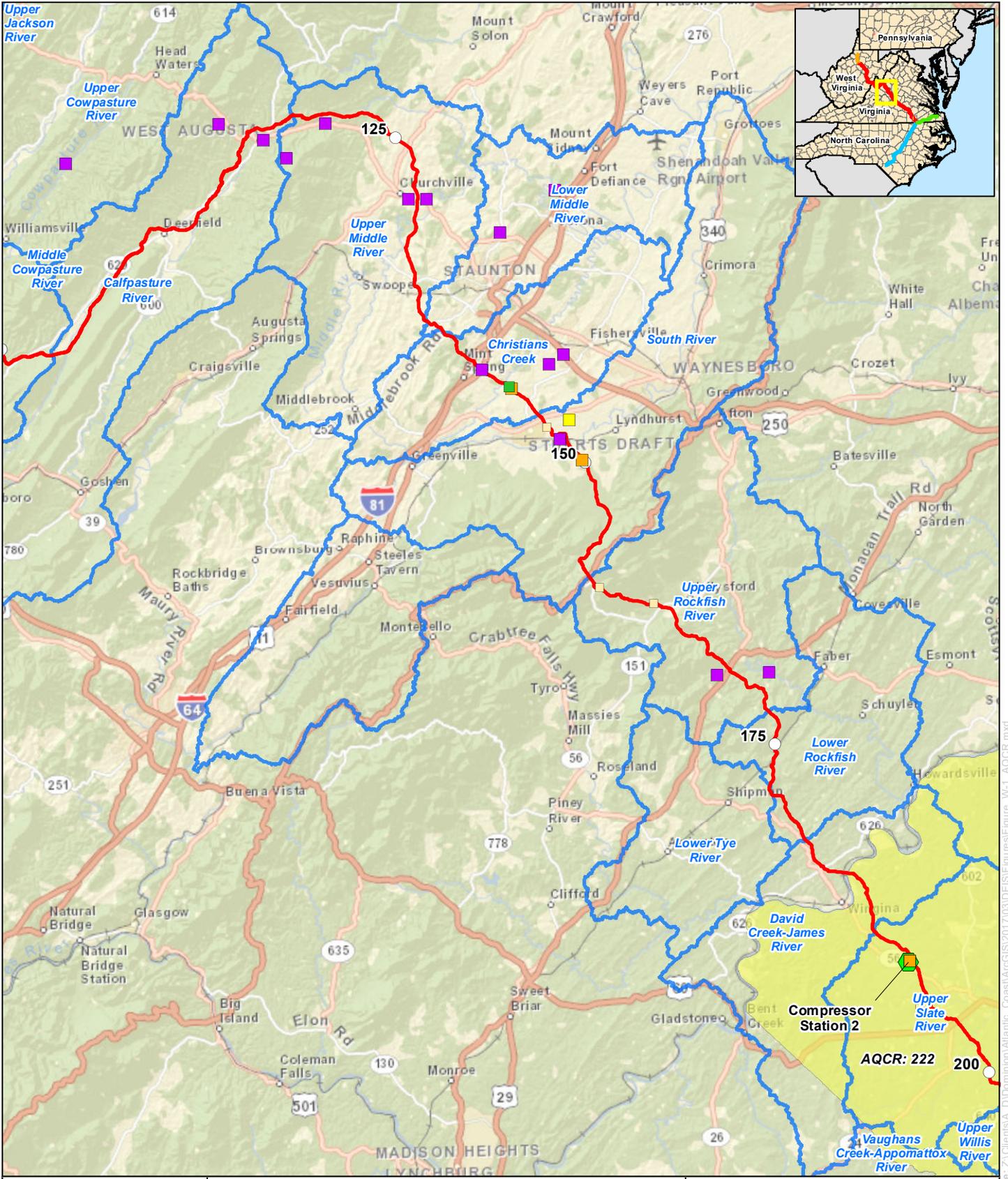
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Map 3 of 9  
For Environmental Review Purposes Only

**Figure W-1**  
**Potential Effect Zone for Cumulative Impacts**  
**Atlantic Coast Pipeline and Supply Header Project**

○ Milepost	■ Comm/Ind/Mun	■ SHP Proposed Route (TL-635)
● Compressor Station	■ Electric Transmission	■ SHP Proposed Route (TL-636)
▲ M and R Station	■ FERC-Jurisdictional	■ ACP Proposed Route (AP-1)
■ Watershed Boundary (HUC 10)	■ Nonjurisdictional	■ ACP Proposed Route (AP-2)
■ AQCR = Air Quality Control Region	■ Residential	■ ACP Proposed Route (AP-3)
	■ Transportation	■ ACP Proposed Route (AP-4)
	■ USFS	■ ACP Proposed Route (AP-5)

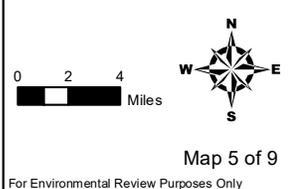
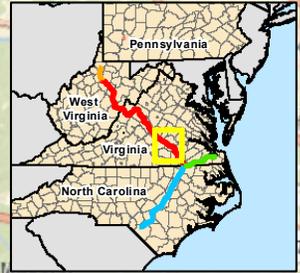
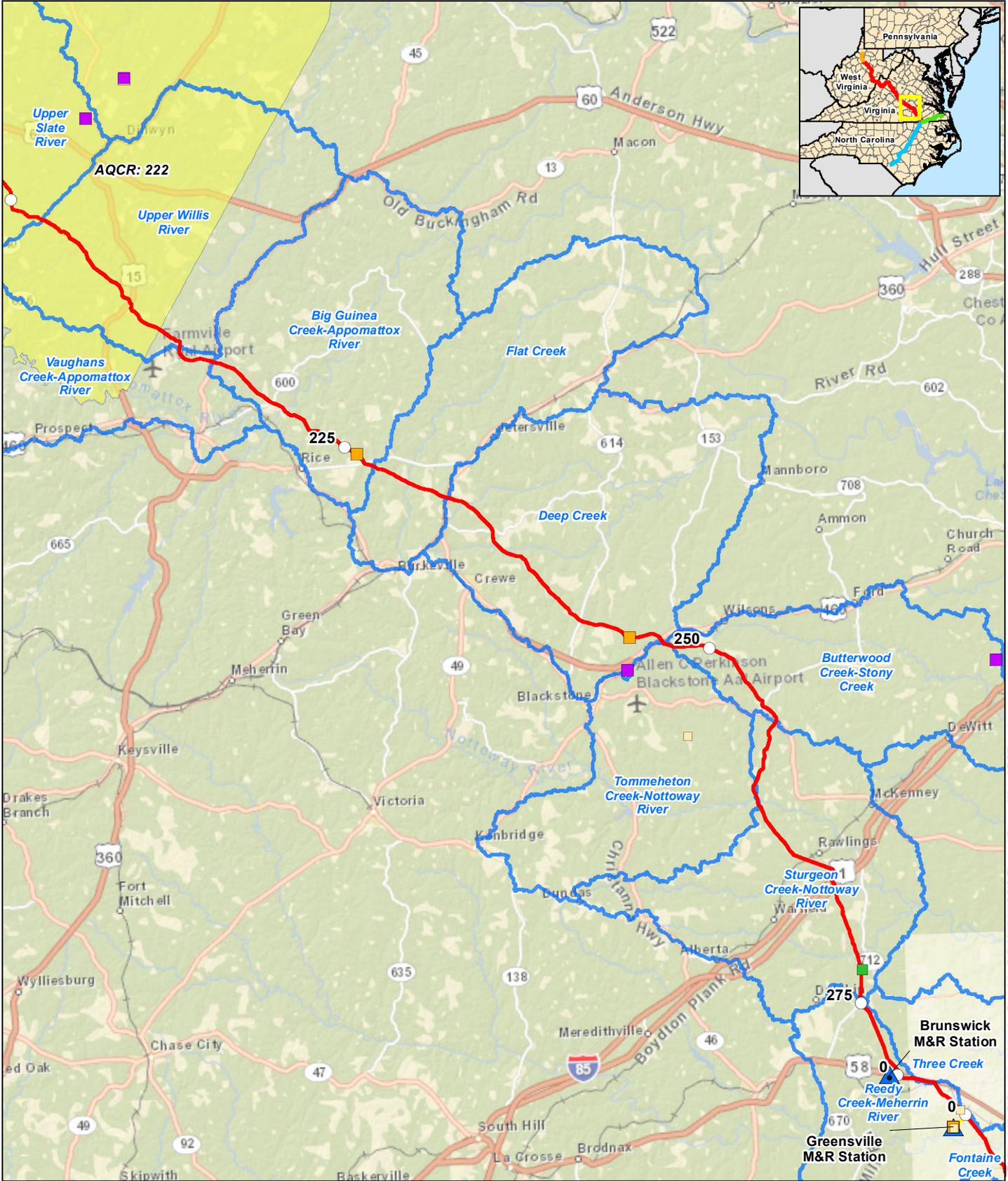
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**Figure W-1**  
**Potential Effect Zone for Cumulative Impacts**  
**Atlantic Coast Pipeline and Supply Header Project**

○ Milepost	■ Comm/Ind/Mun	— SHP Proposed Route (TL-635)
● Compressor Station	■ Electric Transmission	— SHP Proposed Route (TL-636)
▲ M and R Station	■ FERC-Jurisdictional	— ACP Proposed Route (AP-1)
□ Watershed Boundary (HUC 10)	■ Nonjurisdictional	— ACP Proposed Route (AP-2)
■ AQCR = Air Quality Control Region	■ Residential	— ACP Proposed Route (AP-3)
	■ Transportation	— ACP Proposed Route (AP-4)
	■ USFS	— ACP Proposed Route (AP-5)

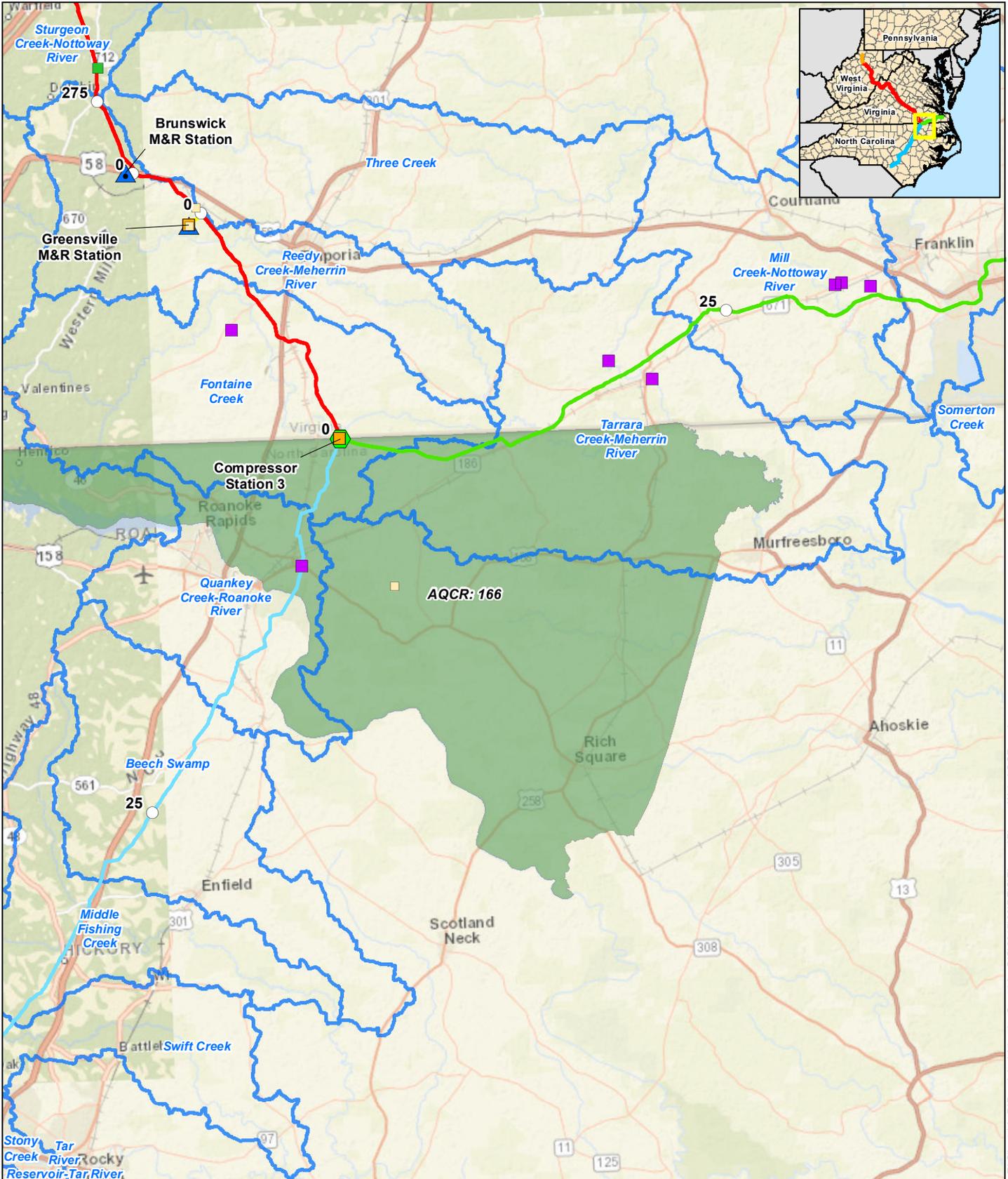
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**Figure W-1**  
**Potential Effect Zone for Cumulative Impacts**  
**Atlantic Coast Pipeline and Supply Header Project**

○ Milepost	■ Comm/Ind/Mun	■ SHP Proposed Route (TL-635)
● Compressor Station	■ Electric Transmission	■ SHP Proposed Route (TL-636)
▲ M and R Station	■ FERC-Jurisdictional	■ ACP Proposed Route (AP-1)
■ Watershed Boundary (HUC 10)	■ Nonjurisdictional	■ ACP Proposed Route (AP-2)
■ AQCR = Air Quality Control Region	■ Residential	■ ACP Proposed Route (AP-3)
	■ Transportation	■ ACP Proposed Route (AP-4)
	■ USFS	■ ACP Proposed Route (AP-5)

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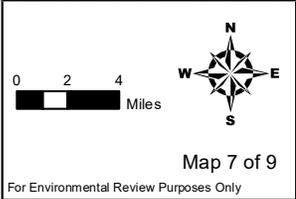
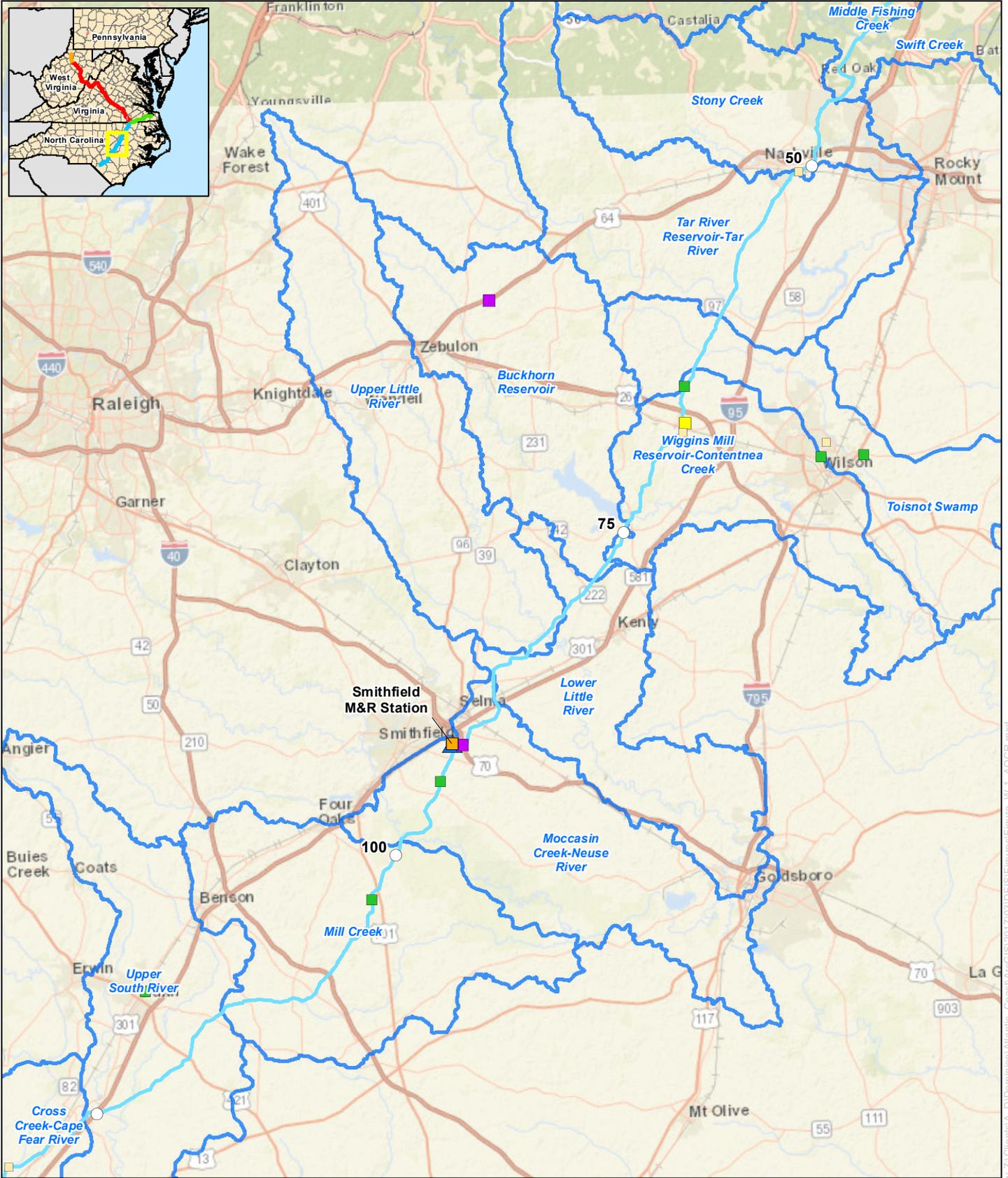
0 2 4 Miles

Map 6 of 9  
For Environmental Review Purposes Only

**Figure W-1**  
**Potential Effect Zone for Cumulative Impacts**  
**Atlantic Coast Pipeline and Supply Header Project**

○ Milepost	■ Comm/Ind/Mun	■ SHP Proposed Route (TL-635)
● Compressor Station	■ Electric Transmission	■ SHP Proposed Route (TL-636)
▲ M and R Station	■ FERC-Jurisdictional	■ ACP Proposed Route (AP-1)
■ Watershed Boundary (HUC 10)	■ Nonjurisdictional	■ ACP Proposed Route (AP-2)
■ AQCR = Air Quality Control Region	■ Residential	■ ACP Proposed Route (AP-3)
	■ Transportation	■ ACP Proposed Route (AP-4)
	■ USFS	■ ACP Proposed Route (AP-5)

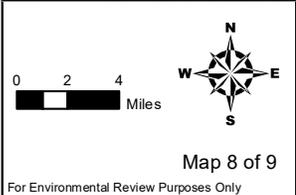
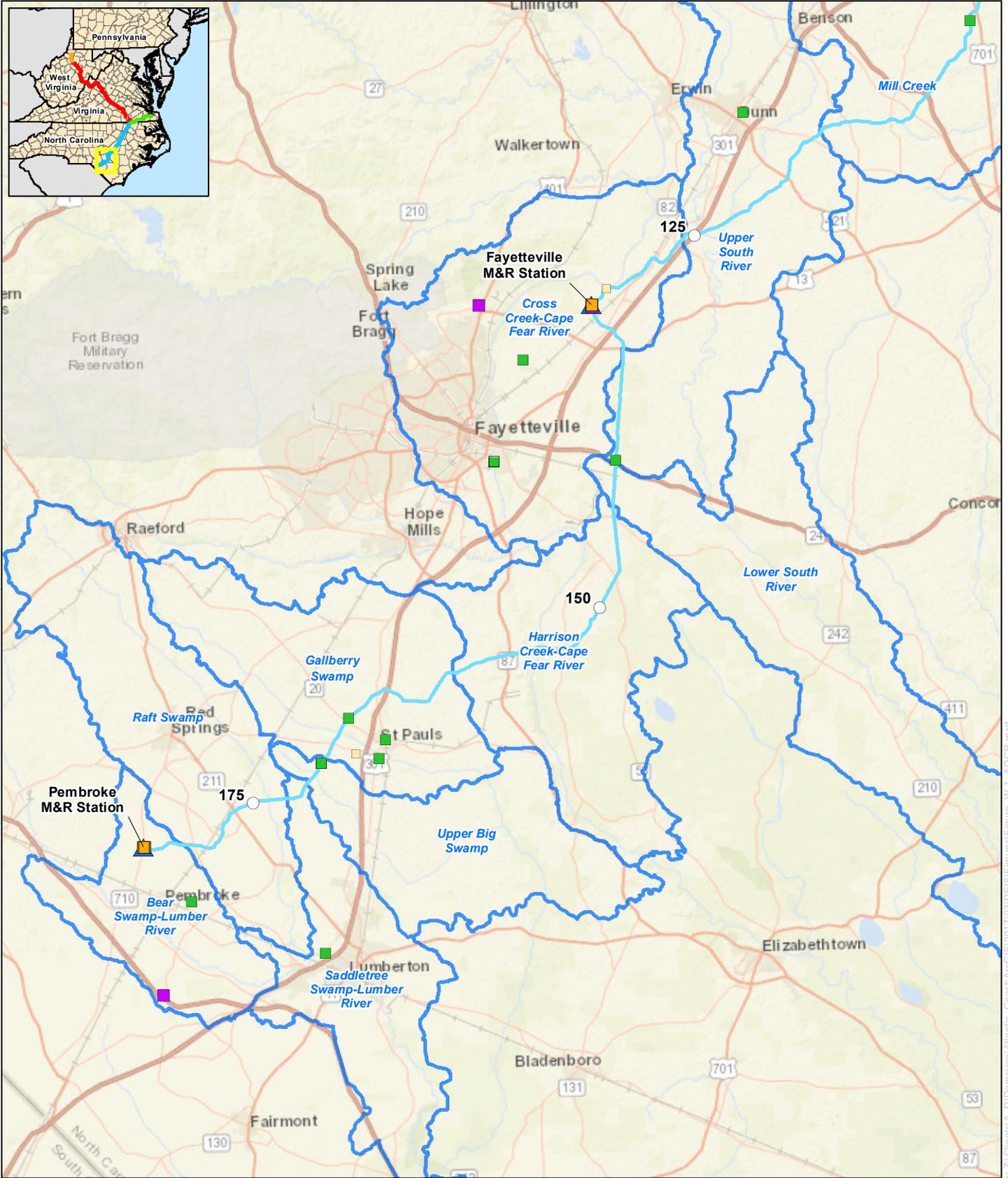
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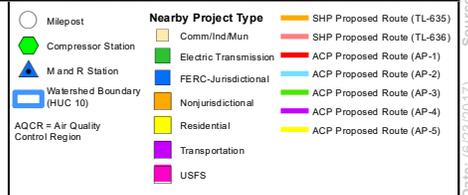
**Figure W-1**  
**Potential Effect Zone for Cumulative Impacts**  
**Atlantic Coast Pipeline and Supply Header Project**

○ Milepost	■ Nearby Project Type	— SHP Proposed Route (TL-635)
● Compressor Station	■ Comm/Ind/Mun	— SHP Proposed Route (TL-636)
▲ M and R Station	■ Electric Transmission	— ACP Proposed Route (AP-1)
□ Watershed Boundary (HUC 10)	■ FERC-Jurisdictional	— ACP Proposed Route (AP-2)
□ AQCR = Air Quality Control Region	■ Nonjurisdictional	— ACP Proposed Route (AP-3)
	■ Residential	— ACP Proposed Route (AP-4)
	■ Transportation	— ACP Proposed Route (AP-5)
	■ USFS	

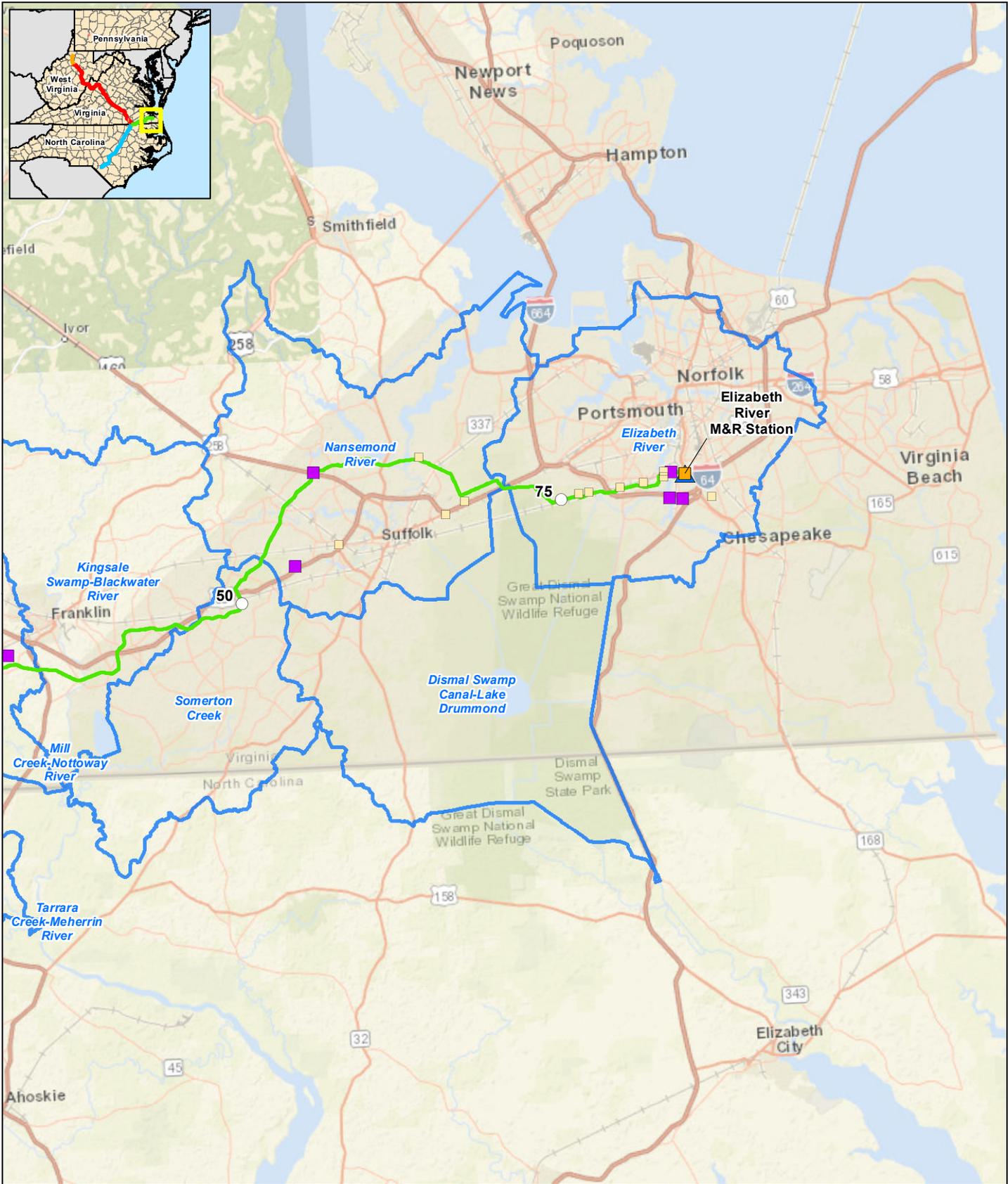
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**Figure W-1**  
**Potential Effect Zone for Cumulative Impacts**  
**Atlantic Coast Pipeline and Supply Header Project**



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0 2 4 Miles

Map 9 of 9  
For Environmental Review Purposes Only

**Figure W-1**  
**Potential Effect Zone for Cumulative Impacts**  
**Atlantic Coast Pipeline and Supply Header Project**

<ul style="list-style-type: none"> <li>○ Milepost</li> <li>● Compressor Station</li> <li>▲ M and R Station</li> <li>□ Watershed Boundary (HUC 10)</li> <li>AQCR = Air Quality Control Region</li> </ul>	<p><b>Nearby Project Type</b></p> <ul style="list-style-type: none"> <li>■ Comm/Ind/Mun</li> <li>■ Electric Transmission</li> <li>■ FERC-Jurisdictional</li> <li>■ Nonjurisdictional</li> <li>■ Residential</li> <li>■ Transportation</li> <li>■ USFS</li> </ul>	<ul style="list-style-type: none"> <li>— SHP Proposed Route (TL-635)</li> <li>— SHP Proposed Route (TL-636)</li> <li>— ACP Proposed Route (AP-1)</li> <li>— ACP Proposed Route (AP-2)</li> <li>— ACP Proposed Route (AP-3)</li> <li>— ACP Proposed Route (AP-4)</li> <li>— ACP Proposed Route (AP-5)</li> </ul>
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 Date: 6/23/2017

## **APPENDIX X**

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## Appendix X

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*Merjent, Inc. is a third party contractor assisting the Commission staff in reviewing the environmental aspects of the project application and preparing the environmental documents required by NEPA. Third party contractors are selected by Commission staff and funded by project applicants. Per the procedures in 40 CFR 1506.5(c), third party contractors execute a disclosure statement specifying that they have no financial or other conflicting interest in the outcome of the project. Third party contractors are required to self-report any changes in financial situation and to refresh their disclosure statements annually. The Commission staff solely directs the scope, content, quality, and schedule of the contractor's work. The Commission staff independently evaluates the results of the third-party contractor's work and the Commission, through its staff, bears ultimate responsibility for full compliance with the requirements of NEPA.*

**APPENDIX AA**

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**FEDERAL ENERGY REGULATORY COMMISSION**

Routing Code PJ 11.4

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