ATLANTIC COAST PIPELINE, LLC
ATLANTIC COAST PIPELINE

and

DOMINION TRANSMISSION, INC.
SUPPLY HEADER PROJECT

Supplemental Filing
February 24, 2017

APPENDIX J

Federal Consistency Information Package

Dominion Resources Services, Inc.
5000 Dominion Boulevard.
Glen Allen, VA 23060

February 10, 2017

BY E-FILE

Ms. Bettina Sullivan
Virginia Department of Environmental Quality
Office of Environmental Impact Review
629 East Main Street
Richmond, VA 23219

Re: Dominion Transmission, Inc., Atlantic Coast Pipeline
Virginia Coastal Zone Management Program
Federal Consistency Information Package – Updated Filing

Dear Ms. Sullivan:

Atlantic Coast Pipeline, LLC (Atlantic) is a company formed by four major U.S. energy companies – Dominion, Duke Energy, Piedmont Natural Gas, and Southern Company Gas. The company was created to develop, own, and operate the proposed Atlantic Coast Pipeline (ACP), an approximately 600-mile-long, interstate natural gas transmission pipeline system designed to meet growing energy needs in Virginia and North Carolina. For more information about the ACP, visit the company's website at www.dom.com/acpipeline. Atlantic has contracted with Dominion Transmission, Inc. (DTI), a subsidiary of Dominion, to seek authorization from the Federal Energy Regulatory Commission under Section 7(c) of the Natural Gas Act to construct, own, operate, and maintain the ACP on behalf of Atlantic. Approximately 307.2 miles of the project will be located within the Commonwealth of Virginia, of which 44.7 miles of 20-inch-diameter natural gas transmission pipeline in Virginia's Coastal Management Zone; within the Cities of Suffolk and Chesapeake.

Atlantic is submitting the enclosed Consistency Certification as an update to the original filing made on September 15, 2015. Through a series of stay agreements, Atlantic and the Virginia Department of Environmental Quality have coordinated the review of the ACP since first submitting project materials in September 2015. This filing includes revisions to the original filing and necessary data and information under the Coastal Zone Management Act, Section 307(c)(3)(A) and 15 CFR Part 930, subpart D, for the Atlantic Coast Pipeline. The materials included conform to the Commonwealth of Virginia outline for a non-federal applicant Coastal Zone Management Act Consistency Determination submittal.

Dominion appreciates the coordination to date and looks forward to continuing to work with you on this project. Please contact Richard Gangle at (804) 273-2814 or Richard.B.Gangle@dom.com, if there are questions regarding this submittal.

Please direct written responses to:

Richard Gangle
Dominion Resources Services, Inc.
5000 Dominion Boulevard
Glen Allen, Virginia 23060

Sincerely,

Robert M. Bisha
Technical Advisor, Atlantic Coast Pipeline

cc: Richard Gangle, Dominion

enclosure

ATLANTIC COAST PIPELINE, LLC
ATLANTIC COAST PIPELINE

And

DOMINION TRANSMISSION, INC.

Virginia Department of Environmental Quality
Coastal Zone Management Program
(VCP)

Federal Consistency Certification

Prepared by

ERM

September 2015
Revised February 2017

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ACRONYMS AND ABBREVIATIONS

ACP	Atlantic Coast Pipeline
APC	Areas of Particular Concern
APE	Area of Potential Effects
API	American Petroleum Institute
Atlantic	Atlantic Coast Pipeline, LLC
ATWS	additional temporary workspace
CFR	Code of Federal Regulations
COE	United States Army Corps of Engineers
Commission	Federal Energy Regulatory Commission
DEQ	Department of Environmental Quality
DGIF	Department of Game and Inland Fisheries
Dominion	Dominion Resources, Inc.
DTI	Dominion Transmission, Inc.
E	Estuarine Wetland
EFH	Essential Fish Habitat
EFSO	Ecological Field Services Office
EPA	U.S. Environmental Protection Agency
FERC	Federal Energy Regulatory Commission
FWS	U.S. Fish and Wildlife Service
GAR	Greater Atlantic Region
GDS	Great Dismal Swamp
GDS-NWR	Great Dismal Swamp National Wildlife Refuge
HDD	Horizontal Directional Drill
IPaC	Information Planning and Conservation System
M&R	metering and regulating
MP	milepost
NAAQS	National Ambient Air Quality Standards
NHI	National Heritage Inventory
NOAA	National Oceanic and Atmospheric Administration
NRHP	National Register of Historic Places
NWI	National Wetland Inventory
PEM	Palustrine Emergent Wetland
PFO	Palustrine Forested Wetland
Plan	*Upland Erosion Control, Revegetation, and Maintenance Plan*
Procedures	*Wetland and Waterbody Construction and Mitigation Procedures*
Project	Atlantic Coast Pipeline
PSS	Palustrine Scrub-Shrub Wetland
RCW	Red-cockaded woodpecker

RPA	Resource Protection Area
SPCC Plan	Spill Prevention, Control, and Countermeasures Plan
SSURGO	Soil Survey Geographic
TBT	Tributyltin
USDOT	U.S. Department of Transportation
USGS	United States Geological Survey
VCP	Virginia's Coastal Zone Management Program
V-CRIS	Virginia Cultural Resource Information System
VMRC	Virginia Marine Resources Commission
VOF	Virginia Outdoor Foundation
VOP	Virginia Outdoors Plan
WERMS	Wildlife Environmental Review Map Service

ATLANTIC COAST PIPELINE

VCP - FEDERAL CONSISTENCY CERTIFICATION

This document provides the Commonwealth of Virginia with Atlantic Coast Pipeline, LLC's (Atlantic) Consistency Certification and necessary information and data under the Coastal Zone Management Act Section 307(c)(3)(A) and 15 Code of Federal Regulations (CFR) Part 930, subpart D, for the Atlantic Coast Pipeline (ACP) project.

Certification:

Atlantic certifies that the proposed activity complies with the enforceable policies of Virginia's Coastal Zone Management Program (VCP) and will be conducted in a manner consistent with the VCP.

Necessary Data and Information:

Atlantic is seeking authorization from Federal Energy Regulatory Commission (FERC or Commission) under Section 7(c) of the Natural Gas Act to construct, own, operate, and maintain the proposed facilities.

Section 1 of this document provides an overall project description of the ACP, while Section 2 provides specific details relevant to construction activities. Section 3 provides an evaluation that includes a set of findings relating to the probable coastal effects of the proposed project and its associated facilities to the relevant enforceable policies of the VCP.

By this certification that the ACP project is consistent with the VCP, together with all necessary information and data, Virginia is notified that it has six months from the receipt of this letter and accompanying information in which to concur with or object to Atlantic's certification. Pursuant to 15 CFR Section 930.62(b), if Virginia has not issued a decision within three months following commencement of State agency review, it shall notify Atlantic and the federal agency of the status of the matter and the basis for further delay. VDEQ originally initiated its review of the Project on October 6, 2015 and VDEQ and Atlantic have agreed to extend the review via a series of stay agreement to extend the 6 month review until June 8, 2017. The State's concurrence, objection, or notification of review status shall be sent to:

Applicant Contact Information:	Federal Agency Contact Information:
Atlantic Coast Pipeline, LLC	Federal Energy Regulatory Commission
Mr. Richard B. Gangle	Mr. Kevin Bowman
Dominion Resources Services, Inc.	888 First Street, N.E.
5000 Dominion Boulevard	Washington, D.C. 20426
Glen Allen, VA 23060	

1.0 PROJECT DESCRIPTION

Atlantic Coast Pipeline, LLC (Atlantic) proposes to construct and operate approximately 600 miles of natural gas transmission pipelines and associated aboveground facilities in West Virginia, Virginia, and North Carolina (see Figure 1.0-1). The Atlantic Coast Pipeline (ACP) will be capable of delivering up to 1.5 million dekatherms per day of natural gas that will be used to generate electricity, heat homes, and run local businesses. The ACP project will facilitate cleaner air, increase the reliability and security of natural gas supplies, and provide a significant economic boost in West Virginia, Virginia, and North Carolina. More information is provided at the company's website at www.dom.com/acpipeline. Atlantic has contracted with Dominion Transmission, Inc. (DTI), a subsidiary of Dominion Resources, Inc. (Dominion), to permit, build, and operate the ACP on behalf of Atlantic.

Atlantic is seeking authorization from the Federal Energy Regulatory Commission (FERC) under Section 7(c) of the Natural Gas Act to construct, own, operate, and maintain the following proposed facilities for the ACP system:

Mainline Pipeline Facilities:

- AP-1: approximately 333.5 miles of underground 42-inch outside diameter natural gas transmission pipeline in Harrison, Lewis, Upshur, Randolph, and Pocahontas Counties, West Virginia; Highland, Bath, Augusta, Nelson, Buckingham, Cumberland, Prince Edward, Nottoway, Dinwiddie, Brunswick, and Greensville Counties, Virginia; and Northampton County, North Carolina.
- AP-2: approximately 186.4 miles of underground 36-inch outside diameter natural gas transmission pipeline in Northampton, Halifax, Nash, Wilson, Johnston, Sampson, Cumberland, and Robeson Counties, North Carolina.

Lateral Pipeline Facilities:

- AP-3: approximately 83.4 miles of underground 20-inch outside diameter natural gas lateral pipeline in Northampton County, North Carolina; and Greensville and Southampton Counties and the Cities of Suffolk and Chesapeake, Virginia.
- AP-4: approximately 0.4 mile of underground 16-inch outside diameter natural gas lateral pipeline in Brunswick County, Virginia.
- AP-5: approximately 1.0 mile of underground 16-inch outside diameter natural gas lateral pipeline in Greensville County, Virginia.

Compressor Station Facilities:

- Compressor Station 1 (Marts Compressor Station): a new, natural gas-fired compressor station approximately at milepost[1] (MP) 7.6 of the AP-1 mainline in Lewis County, West Virginia.

[1] The mileposts used in this document are based on three-dimensional changes in topography (elevation) along the proposed pipeline routes. The straight-line distance between two mileposts depicted on two-dimensional route maps and figures may be less than 5,280 feet. The mileposts are reference points along the routes.

- Compressor Station 2 (Buckingham Compressor Station): a new, natural gas-fired compressor station, approximately at MP 191.5 of the AP-1 mainline in Buckingham County, Virginia.
- Compressor Station 3 (Northampton Compressor Station): a new natural gas-fired compressor station approximately at MP 300.1 of the AP-1 mainline and MP 0.0 of the AP-2 mainline in Northampton County, North Carolina.

Other Aboveground Facilities:

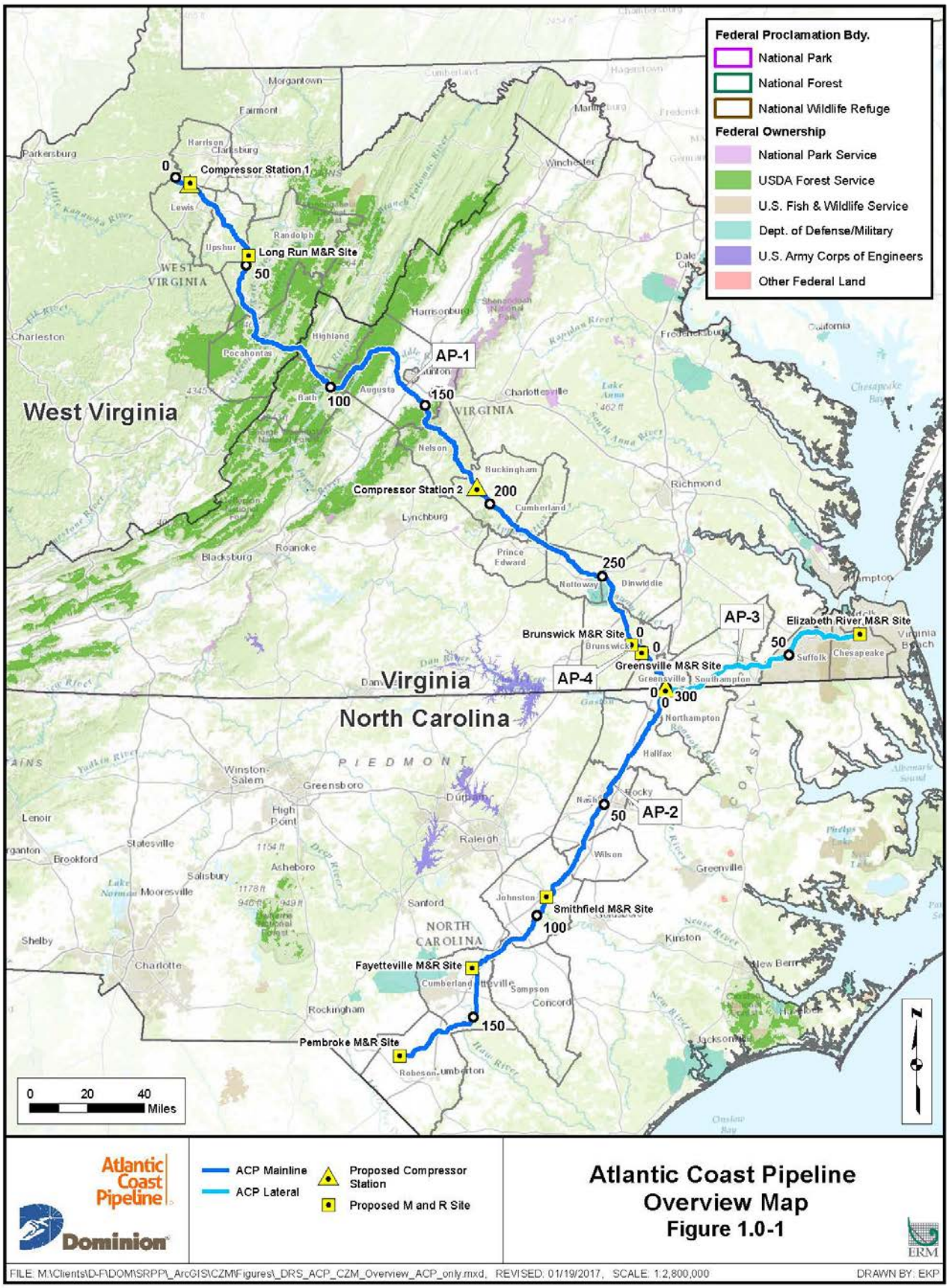
- Nine new metering and regulating (M&R) stations at receipt and/or delivery points along the new pipelines (including one at Compressor Station 1 and one at Compressor Station 2).
- Forty one valve sites at select points along the new pipelines, at intervals specified by U.S. Department of Transportation (USDOT) regulations at Title 49 Code of Federal Regulations (CFR) Part 192.
- Ten sets of pig launchers and/or receiver sites at 13 points along the new pipelines including launcher/receiver sites at Compressor Stations 2 and 3. Pigs are pipeline inspection tools.

1.1 COASTAL EFFECTS

The mainline of the ACP has been reviewed for potential negative impact on land, water use and natural resources within Virginia's designated coastal resources management area. For portions of the ACP outside of the coastal zone, west of the Blackwater River, Atlantic concludes that ACP activities will not have significant impact in the coastal zone due to proposed construction and management techniques, and location outside of and relative distance from the coastal zone; and therefore portions of the ACP outside the Coastal Zone will not be discussed further.

Within the Coastal Zone, Atlantic proposes to construct approximately 44.7 miles of 20-inch-diameter natural gas transmission pipeline through Virginia's coastal zone (Cities of Suffolk and Chesapeake), between the Blackwater River and the Project's termination at the Elizabeth River M&R (metering and regulating) Station (see Figure 1.1-1). This portion of the ACP will include part of the new lateral pipeline designated as AP-3, four new valves, and a new M&R station.

In addition to compliance with the enforceable policies of the VCP and conducting the Project in a manner consistent with the VCP, many measures, as discussed in more detail within this document, have been developed. Additional measures that will be implemented to reduce impacts in the coastal zone include co-locating the route within existing right-of-way corridors – 15.0 miles of 44.7 miles are collocated (33.6 percent) – and use of Horizontal Direction Drilling (HDD) under appropriate conditions. Additionally, no Federal or Commonwealth lands are crossed in the coastal zone by the proposed AP-3 lateral.


Federal Proclamation Bdy.
National Park
National Forest
National Wildlife Refuge
Federal Ownership
National Park Service
USDA Forest Service
U.S. Fish & Wildlife Service
Dept. of Defense/Military
U.S. Army Corps of Engineers
Other Federal Land
Compressor Station 1
Long Run M&R Site
AP-1
Compressor Station 2
Brunswick M&R Site
AP-3
Elizabeth River M&R Site
Greensville M&R Site
AP-4
AP-2
Smithfield M&R Site
Fayetteville M&R Site
Pembroke M&R Site
West Virginia
Virginia
North Carolina
0 20 40 Miles
ACP Mainline
ACP Lateral
Proposed Compressor Station
Proposed M and R Site
Atlantic Coast Pipeline
Dominion
Atlantic Coast Pipeline Overview Map
Figure 1.0-1
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Fredericksburg
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Norfolk
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ACP Centerline
Milepost
VA Coastal Zone
Compressor Station
M R Site
Valve Site
Atlantic Coast Pipeline
Figure 1.1-1
Commonwealth of Virginia Coastal Zone
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2.0 ADDITIONAL DESCRIPTION OF FACILITIES

Provide additional information required by the State pursuant to 15 CFR Section 930.58(a)(2) and 930.58(a)(3)

2.1 REQUIRED NECESSARY DATA

The following sections provide a complete description of Project elements that are applicable to Coastal Zone Management Act consistency within the coastal zone.

2.1.1 AP-3 Pipeline Facilities

The AP-3 lateral, which will consist of 20-inch outside diameter pipeline, will originate at Compressor Station 3 in Northampton County, North Carolina, just south of the State of North Carolina/Commonwealth of Virginia line. From this point, the pipeline will extend east/northeast crossing through Northampton County, North Carolina; Greensville and Southampton Counties, Virginia; and the Cities of Suffolk and Chesapeake, Virginia. The pipeline will pass south of the City of Franklin in Southampton County, enter the Commonwealth of Virginia's Coastal Zone as it crosses the Blackwater River at MP 38.6, and pass south of the City of Portsmouth in Chesapeake. The pipeline will generally parallel U.S. Highway 58W through the City of Suffolk. It will terminate at a new interconnect with an existing Virginia Natural Gas pipeline on the east side of the Southern Branch Elizabeth River in the City of Chesapeake at MP 82.7.

The design factors and wall thickness for the pipeline will adhere to USDOT requirements. The pipe will be manufactured in accordance with American Petroleum Institute (API) Standards and all applicable Federal and State/Commonwealth regulations for design, permitting, construction, operation, and maintenance. A corrosion protection external coating will be applied to the pipeline and all buried facilities, and cathodic corrosion protection will be provided by an impressed electrical current system.

2.1.2 AP-3 Aboveground Facilities

The AP-3 lateral will require construction of one M&R station, four valve sites, one pig receiver facility (within the M&R Station), and associated appurtenances within the coastal zone. The approximate locations of the facilities are depicted in the AP-3 route maps provided as Appendices 1 (Topographic Route Maps) and 2 (Aerial Route Maps). The location of each facility by milepost and county/city is listed in Table 2.1.2-1. The proposed M&R station location within the coastal zone is provided in Appendix 3.

Compressor Stations

There are no compressor stations proposed along the AP-3 lateral in the coastal zone.

Metering and Regulating Stations

Atlantic will construct the Elizabeth River M&R station on the east side of the Southern Branch Elizabeth River. This station will take natural gas from the proposed AP-3 lateral and discharge into an existing Virginia Natural Gas pipeline. The M&R station will be built at the end delivery point of the pipeline, and will have a delivery volume of 0.35 billion cubic feet per day.

Engineering and design for the proposed M&R station is ongoing. Based on current plans, Atlantic will utilize 1.0 acre during construction of the Elizabeth River M&R station, all of which will be retained for Project operations. In general, the M&R station will contain one dekatherm building (used to house equipment such as gas chromatographs, communications equipment, etc.), a microwave tower, a regulation building, a storage building, and a meter building. Equipment at the station will include gas filter/separators, gas meters, and regulators, tank, and standby generator. Once construction is complete at the station, disturbed areas that are not covered with foundations, paving, or gravel will be finish-graded and seeded. The stations will be fenced for security.

TABLE 2.1.2-1

Proposed Aboveground Facilities for the Atlantic Coast Pipeline Coastal Zone

Aboveground Facility	County/City and State/Commonwealth	Approximate Milepost
Metering and Regulating Stations		
AP-3 Lateral		
Elizabeth River M&R Station	City of Chesapeake, VA	82.7
Valves [a]		
AP-3 Lateral		
Valve Site 35 GLT (formerly #27)	City of Suffolk, VA	39.0
Valve Site 36 Conner	City of Suffolk, VA	58.5
Valve Site 37 Magnolia	City of Chesapeake, VA	71.6
Valve Site 38 Chesapeake	City of Chesapeake, VA	77.5
Pig Launcher/Receiver Sites		
AP-3 Lateral		
Site 7 (receiver)	City of Chesapeake, VA	82.7

[a] The mileposts used in the FERC Application, which was filed on September 18, 2015 (FERC Accession Number 20150918-5212), were based on three-dimensional changes in topography along the proposed pipeline routes. In areas where a pipeline route has changed due to the adoption of an alternative, the mileposts in the affected area have been scaled to account for the resulting difference in the length of the route. The straight-line distance between consecutive mileposts as indicated or depicted in tables and figures in this filing may be greater than or less than 5,280 feet. The mileposts should be considered as reference points only.

Valve Sites

Within the coastal zone, four valves will be installed along the proposed pipeline at the locations identified in Table 2.1.2-1. The valves will be installed below grade with aboveground valve operators, risers, blowdown valves, and crossover piping connected on each side of the valve. No additional land will be affected by construction and operation of valves, as valve construction will occur within the right-of-way for the pipeline. Following construction, a chainlink security fence will be installed around the periphery of each valve site to create a 50-by 50-foot area which will be maintained within the permanent pipeline easement. The area within

the fence will be covered with gravel. The valves will allow DTI, as operator, to segment the pipeline for safety, operations, and maintenance purposes.

Pig Launchers/Receivers

One pig receiver facility will be installed within the same fence-line as the Elizabeth River M&R Station. Engineering design for the facility is ongoing, but no additional land will be required for construction and operation of the pig receiver assembly beyond what is already intended for construction of the M&R Station. Pig launchers/receivers are used to run pigs through the pipeline system.

2.2 PIPELINE RIGHTS-OF WAY AND ASSOCIATED WORK AREAS

2.2.1 Pipeline Rights-of-Way

For the AP-3 pipeline lateral, the construction corridor in non-agricultural uplands and in wetlands will measure 75 feet in width, with a 25-foot-wide spoil side and 50-foot-wide working side. In areas where full width topsoil segregation is required (e.g., agricultural areas), an additional 25 feet of temporary construction workspace will be needed on the working side of the corridor to provide sufficient space to store topsoil. Following construction of the ACP pipeline, land within the temporary construction right-of-way will be restored to preconstruction conditions and uses, and a 50-foot-wide permanent easement will be maintained for operation of the pipeline.

2.2.2 Additional Temporary Workspace

In addition to the construction rights-of-way, Additional Temporary Workspace (ATWS) will be required to stage construction activities and store equipment, materials, and spoil at wetland, waterbody, and road crossings. ATWS will also be required in areas with steep side slopes or where special construction techniques are implemented as well as at tie-ins with existing pipeline facilities, utility crossings, truck turnaround areas, and spread mobilization/de-mobilization areas.

For the AP-3 lateral, ATWS measuring 25 by 100 feet will typically be required on both sides of the corridor and both sides of the crossing at wetlands, waterbodies, roads, and railroads. Following construction of the pipeline, ATWS will be restored to pre-existing conditions and uses.

2.2.3 Access Roads

Atlantic has identified roads which will be used to provide access to the proposed AP-3 lateral rights-of-way and other facilities during construction and operation of the ACP. Atlantic will utilize existing roads to the extent practicable, but some new roads may need to be built to support construction and operations. Additionally, new roads will need to be built to provide access to aboveground facility sites (i.e., compressor and M&R stations, valves, and pig launcher/receiver assemblies) during operations. In some cases, existing roads will require improvement (such as grading, gravelling, replacing or installing culverts, minor widening,

and/or clearing of overhead vegetation) to safely accommodate construction equipment and vehicles. If any existing roads are damaged during construction, Atlantic will restore these roads to preconstruction condition or better.

Access road locations were identified based on the needs of construction and operations to provide sufficient ingress and egress to and from the proposed pipeline rights-of-way and aboveground facility sites. The locations of access roads are provided on the aerial maps in Appendix 2. A sufficient number of roads with regular spacing is needed to minimize congestion of construction vehicles and equipment on the right-of-way, which otherwise would increase the duration of construction and create unsafe work conditions for workers.

Currently, 17 access roads will be necessary within the coastal zone for the construction and operation of the AP-3 lateral. The total length of the roads is 13.8 miles. Of those, 14 are existing or partially existing and 3 are new. The total length of the new roads is approximately 5 miles. There will be 3 temporary roads, one of which is new and 14 permanent roads 2 of which will be entirely new and 2 which will have additions to them.

2.2.4 Cathodic Protection System

Cathodic corrosion protection will be provided by an impressed electrical current system on the pipeline. This Project-wide pipe corrosion control system is proposed to include 18 ground beds at various points along the proposed ACP for the installation of anodes perpendicular to the pipeline. The ground beds will contain arrays of sacrificial anodes to provide a path with low resistance to ground.

Construction of the ground bed will occur in areas measuring approximately 670 feet in length by 25 feet in width. Following construction, Atlantic will retain an easement for the ground bed measuring approximately 670 feet in length by 10 feet in width for operation of the ground bed. Atlantic anticipates installing one ground bed near MP 24.2 for the AP-3 lateral, which is not located within the Coastal Zone Management area.

2.3 CONSTRUCTION AND RESTORATION PROCEDURES

The ACP will be designed, constructed, operated, and maintained in accordance with USDOT regulations codified at 49 CFR 192, *Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards*; with FERC regulations codified at 18 CFR 380.15, *Siting and Maintenance Requirements*; and with other applicable Federal and State/Commonwealth regulations, except as otherwise specified in the FERC Application or approved by the appropriate regulatory agency.

Atlantic will adopt and implement the 2013 versions of the FERC's *Upland Erosion Control, Revegetation, and Maintenance Plan* (Plan) and *Wetland and Waterbody Construction and Mitigation Procedures* (Procedures).[2] Atlantic additionally has prepared and will implement the following construction, restoration, and mitigation plans:

[2] Copies of the FERC's Plan and Procedures are available on the FERC's website at http://www.ferc.gov/industries/gas/enviro/guidelines.asp.

- *Spill Prevention, Control, and Countermeasures Plan (SPCC Plan);*
- *Horizontal Directional Drill Fluid Monitoring, Operations, and Contingency Plan;*
- *Timber Removal Plan;*
- *Contaminated Media Plan;*
- *Traffic and Transportation Management Plan;*
- *Invasive Plant Species Management Plan;*
- *Blasting Plan;*
- *Plans for Unanticipated Discovery of Historic Properties or Human Remains during Construction;*
- *Restoration and Rehabilitation Plan;*
- *Migratory Bird Plan;*
- *Fire Prevention and Suppression Plan; and*
- *Fugitive Dust Control and Mitigation Plan.*

Atlantic will also prepare a set of construction alignment sheets or similar scale maps which depict the locations of erosion and sediment controls in construction work areas. The alignment sheets will be based on the Plan and Procedures as well as Commonwealth and local regulations or guidelines applying the strictest applicable standards, including the Virginia Department of Environmental Quality's *Virginia Erosion and Sediment Control Handbook*[3] (1992).

2.4 GENERAL PIPELINE CONSTRUCTION PROCEDURES

Construction of the proposed pipeline will follow industry-standard practices and procedures as described below.

In a typical scenario, construction involves a series of discrete activities conducted in a linear sequence. These include survey and staking; clearing and grading; trenching; pipe stringing, bending, and welding; lowering-in and backfilling; hydrostatic testing; final tie-in; commissioning; and right-of-way cleanup and restoration. Figure 2.4-1 illustrates each of the steps in a typical construction sequence. A description of each step in the process is provided below.

[3] Hardcopy 1992 editions identify this as a Virginia Department of Conservation and Recreation document; the online version identifies this as a Virginia Department of Environmental Quality document.

2.4.1 Survey and Staking

Affected landowners will be notified before the preconstruction survey and staking are conducted. After these notifications, Atlantic's survey contractor will stake the pipeline centerlines and limits of the construction right-of-way and ATWS areas. Wetland boundaries and other environmentally sensitive areas will also be marked at this time.

2.4.2 Clearing and Grading

Prior to beginning ground-disturbing activities, Atlantic's construction contractors will coordinate with the One-Call system in Virginia to have existing underground utilities (e.g., cables, conduits, and pipelines) identified and flagged. Once this process is complete, the clearing crew will mobilize to the construction areas. Fences along the rights-of-way will be cut and braced, and temporary gates and fences will be installed to contain livestock, if present. The clearing crew will then clear the work area of vegetation and other obstacles, including trees, stumps, logs, brush, and rocks.

To the extent feasible, Atlantic will minimize tree removal during construction. Cleared vegetation and stumps will be either burned, chipped (except in wetlands), or hauled offsite to a commercial disposal facility. Burning will be conducted in accordance with Commonwealth and local burning requirements or permits in uplands; burning will not be conducted in wetlands. Timber removal will be conducted in accordance with the project's *Timber Removal Plan*, which identifies the methods for timber removal and salvage from the construction right-of-way.

Following clearing, the construction right-of-way and ATWS will be graded where necessary to provide a level work surface to allow safe passage of construction equipment and emergency vehicles. More extensive grading will be required in side slope areas and where necessary to prevent excessive bending of the pipeline. Graded topsoil will be segregated in accordance with the Plan and Procedures, where required. Typically, topsoil will be segregated from subsoil in cultivated and rotated croplands, managed pastures, residential areas, and hayfields, unless Atlantic is instructed by a landowner or land managing agency not to do so.

The depth of topsoil removed will depend on soil conditions and landowner requests or land managing agency requirements. In accordance with the Plan, and in areas where topsoil segregation is required, Atlantic will segregate up to 12 inches of topsoil in deep soils (more than 12 inches of topsoil) and the entire topsoil layer in shallow soils (less than 12 inches of topsoil). Excavated topsoil will be placed on the edge or edges of the construction right-of-way as described above.

If the ground is relatively flat and does not require topsoil segregation or grading, the existing vegetative mat will be peeled and removed similar to topsoil and stockpiled along the right-of-way for use in restoration. In areas disturbed by grading, and as required by the Plan and Procedures, temporary erosion and sediment controls will be installed within the right-of-way to minimize erosion. The erosion and sediment controls will be inspected and maintained throughout the construction and restoration phases of the Project, as appropriate, and as required by the Plan and Procedures.

1. Survey and Staking
2. Tree Removal
3. Clearing
4. ROW Topsoil Stripping and Front-End Grading
5. Restaking Centerline of Trench
6a. Trenching (wheel ditcher)
6b. Trenching (backhoe)
6c. Trenching (rock)
7. Stringing Pipe
8. Field Bending Pipe
9. Line-Up, Initial Weld
10. Fill & Cap, Final Weld
11. As-Built Footage
12. X-Ray Inspection, Weld Repair
13. Coating Field Welds
14. Inspection & Repair of Coating
15. Lowering Pipe into Trench
16. As-Built Survey
17. Pad, Backfill, Rough Grade
18. Hydrostatic Testing, Final Tie-in
19. Replace Topsoil, Final Clean-Up, Full Restoration
For environmental review purposes only.
Figure 2.4-1
Atlantic Coast Pipeline
Typical Pipeline Construction Sequence
Atlantic Coast Pipeline
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2.4.3 Trenching

Pipe trench will be excavated by rotary trenching machines, track-mounted backhoes, or other similar equipment. Trench spoil will be deposited adjacent to the trench within the construction right-of-way. The trench for the pipeline will be excavated to a depth that provides sufficient cover over the pipeline after backfilling. For the AP-3 lateral, the trench depth will be approximately 6 feet in non-agriculture uplands and wetlands, with a typical 3-foot depth of cover. The trench depth in agricultural lands will typically be approximately 7 feet, with a 4-foot depth of cover. The bottom width of the trench will be sufficient to accommodate the diameter of the pipeline and, where needed, sufficient pad material around it (typically approximately 1 foot on either side of the pipeline). The top width will vary to allow the sides of the trench to be adapted to site soil conditions at the time of construction, for non-wetland areas, this will be 5 to 10 feet; In wetland areas, the width will be 10 to 15 feet. If trench dewatering is required, it will be conducted in accordance with the Plan and Procedures and applicable permits in a manner that will not cause erosion or result in heavily silt-laden water flowing into a wetland or waterbody.

In areas where topsoil segregation is required, subsoil from trench excavations will be placed adjacent to the topsoil in a separate pile to allow for proper restoration of the soil during backfilling and restoration. Gaps will be left between the topsoil and subsoil piles to prevent stormwater runoff from backing up or flooding. Mixing of topsoil and subsoil piles will be prevented by separating them physically or with a mulch or silt fence barrier, where necessary, to accommodate reduced workspace.

When rock or rocky formations are encountered, tractor-mounted mechanical rippers or rock trenchers will be used for breaking up the rock prior to excavation. In areas where mechanical equipment or other means cannot be used to break up or loosen boulders or shallow bedrock, blasting will be required and performed as described in Section 2.5.6 below. Blasting is not anticipated for the ACP in the coastal zone.

2.4.4 Pipe Stringing, Bending, and Welding

Individual joints of pipe (up to 80 feet long) will be trucked to the construction right-of-way and strung along the trenchline in a single, continuous line. Individual sections of pipe will be bent, where necessary, to allow for a uniform fit with the contours at the bottom of the trench and horizontal points of inflection. Typically, a track-mounted, hydraulic pipe-bending machine will tailor the shape of the pipe to conform to the contours of the terrain. After the pipe sections are bent, they will be welded together into long sections and placed on temporary supports.

Welding will be conducted in compliance with 49 CFR 192 and API Standard 1104, *Welding of Pipelines and Related Facilities.* Completed welds will be visually and radiographically inspected. Welds that do not meet established specifications will be repaired or removed. Following welding and after inspection, pipe weld joints will be coated with an epoxy coating in accordance with required specifications. The coating will be inspected for defects, and repaired, if necessary, prior to lowering the pipe into the trench.

2.4.5 Lowering-in and Backfilling

Prior to lowering-in, the trench will be inspected for rocks and other debris that could damage the pipe or its protective coating, and where necessary, the pipe will be protected with rock-shield. Dewatering may be necessary to inspect the bottom of the trench in areas where water has accumulated. If dewatering is required, it will be conducted in accordance with the Plan and Procedures and applicable permits in a manner that will not cause erosion or result in silt-laden water flowing into a wetland or waterbody.

The pipe will be lifted from the temporary supports and lowered into the trench using side-boom tractors. As necessary, trench breakers (stacked sand bags or foam) will be installed in the trench around the pipe in steeply sloped areas to prevent movement of subsurface water along the pipeline. After lowering-in, the trench will be backfilled with previously excavated materials using bladed equipment or backhoes. If the excavated material is rocky, the pipeline will be protected with a rock shield or covered with other suitable fill (e.g., crushed limestone rock). Excavated rock will then be used to backfill the trench to the top of the existing bedrock profile in the trench, except that large rock will be buried on the working side of the two-tone cut where the contractor levels the ground for construction. Additionally, excavated rock may be crushed with a rock pulverizer and incorporated into fill or used as gravel to upgrade access roads. Excavated material not required for backfill will be removed and disposed of at approved upland disposal sites.

2.4.6 Hydrostatic Testing

After backfilling and other construction activities are complete, each pipeline will be hydrostatically tested in sections to verify that each system is free from leaks and will provide the required margin of safety at operating pressures. Individual sections of pipeline to be tested will be determined by water availability and terrain conditions. Water for hydrostatic testing will be obtained from municipal or surface water sources in accordance with Commonwealth regulations and required permits. As practicable, water will be transferred from one test section to another to reduce the amount of water that is required for testing. Once hydrostatic testing is complete, the test water will be discharged in accordance with the Plan and Procedures and applicable permits through an approved discharge structure to remove turbidity or suspended sediments. Alternatively, the water will be hauled offsite for disposal at an approved location.

During hydrostatic testing, internal pressures and durations will be in accordance with 49 CFR 192 and applicable permit conditions. If leaks are found during testing, the leaks will be repaired and the section of pipe retested until the required specifications are met.

2.4.7 Final Tie-in and Commissioning

After hydrostatic testing, the final tie-ins on each pipeline will be completed and commissioning will commence. Commissioning involves activities to verify that equipment is properly installed and working; controls and communications systems are functional; and the pipeline is ready for service. The pipeline will be cleaned, dried, and inspected using in-line inspection tools (pigs), and prepared for service by purging the line of air and loading the line with natural gas.

2.4.8 Clean-Up and Restoration

Final cleanup will begin after backfilling and as soon as weather and site conditions permit. A concerted effort will be made to complete final cleanup (including final grading and installation of permanent erosion control devices) within timeframes required by permits, in accordance with landowner requests, or as required by the Plan and Procedures. Construction debris will be collected and taken to an approved disposal facility. Preconstruction contours will be restored as closely as possible. Segregated topsoil will be spread over the surface of the right-of-way, and permanent erosion controls will be installed.

Revegetation measures will be implemented in accordance with the Plan and Procedures or as directed by the appropriate land managing agency. Disturbed, non-cultivated work areas will be stabilized and seeded as soon as possible after final grading, weather and soil conditions permitting, subject to the recommended seeding dates for the seed mixes used to revegetate different areas along the pipelines. Seeding will stabilize the soil, improve the appearance of the area disturbed by construction, and in some cases, restore native flora.

Markers showing the location of the pipeline will be installed intermittently along the pipeline rights-of-way in compliance with USDOT Pipeline & Hazardous Materials Safety Administration specifications. Markers may be installed at fence, road, and railroad crossings to identify DTI as the operator of the new pipelines. The markers will convey emergency information in accordance with applicable government regulations, including USDOT- Pipeline and Hazardous Materials Safety Administration safety requirements. Special markers providing information and guidance to aerial patrol pilots also will be installed.

2.5 SPECIALIZED PIPELINE CONSTRUCTION PROCEDURES

In addition to standard pipeline construction methods, Atlantic will use special construction techniques where warranted by site-specific conditions, e.g., when constructing across waterbodies, wetlands, roads, highways, railroads, agricultural areas, and residential areas; when blasting through rock; or when working in winter conditions. Each of these specialized measures is described below.

2.5.1 Waterbody Crossings

Atlantic will use the open-cut, flume, dam-and-pump, or HDD methods to construct the pipelines and access roads across waterbodies. In each case and for each method, Atlantic will adhere to the measures specified in the Procedures; site-specific modifications to the Procedures as requested by Atlantic and approved by the FERC; and any additional requirements identified in Federal or Commonwealth waterbody crossing permits, including applicable permits and approvals from the U.S. Army Corps of Engineers (COE) and various Commonwealth agencies.

During the clearing and grading phase of construction, temporary bridges will be installed across waterbodies in accordance with the Procedures to allow construction equipment and personnel to cross. The bridges may include clean rock fill over culverts, timber mats supported by flumes, railcar flatbeds, flexi-float apparatuses, or other types of spans. Construction equipment will be required to use the bridges, except that the clearing and bridge

installation crews will be allowed one pass through waterbodies before bridges are installed. The temporary bridges will be removed when construction and restoration activities are complete.

ATWS will be required on both sides of waterbody crossings to stage construction equipment, fabricate the pipeline, and store construction materials. Except as approved by the Commission, the ATWS will be located at least 50 feet away from the water's edge at each waterbody (with the exception of site-specific modifications as requested by Atlantic and approved by the FERC).

Clearing adjacent to waterbodies will involve the removal of trees and brush from the construction right-of-way and ATWS areas. Woody vegetation within the construction right-of-way will be cleared to the edge of each waterbody. Sediment barriers may be installed at the top of the bank if no herbaceous strip exists. Initial grading of the herbaceous strip will be limited to the extent needed to create a safe approach to the waterbody and to install temporary bridges.

During clearing, sediment barriers will be installed and maintained across the right-of-way adjacent to waterbodies and within ATWS to minimize the potential for sediment runoff. Silt fence and/or straw bales located across the working side of the right-of-way will be removed during the day when vehicle traffic is present, and will be replaced each night. Alternatively, drivable berms may be installed and maintained across the right-of-way in lieu of silt fences and/or straw bales.

Typically, equipment refueling and lubricating at waterbodies will take place in upland areas that are 100 feet or more from the edge of the waterbody and any adjacent wetlands. However, there will be certain instances where equipment refueling and lubricating may be necessary in or near waterbodies. For example, stationary equipment, such as water pumps for withdrawing hydrostatic test water, may need to be operated continuously on the banks of waterbodies and may require refueling in place. Atlantic's SPCC Plan addresses, among other items, the handling of fuel and other materials associated with the Projects. As required by the Procedures, the SPCC Plan will be available during construction on each construction spread.

After the pipeline is installed across a waterbody using one of the methods described below, the trench will be backfilled with native material excavated from the trench. If present and moved prior to construction, larger rocks or boulders will be replaced in the stream channel within the construction area following backfill of the trench. The streambed profile will be restored to pre-existing contours and grade conditions to prevent scouring. The stream banks will then be restored as near as practicable to pre-existing conditions and stabilized. Stabilization measures could include seeding, tree planting, installation of erosion control blankets, or installation of riprap materials, as appropriate. Jute thatching or bonded fiber blankets will be installed on banks of waterbodies to stabilize seeded areas. Temporary erosion controls will be installed immediately following bank restoration. The waterbody crossing area will be inspected and maintained until restoration of vegetation is complete.

Open-Cut Method

The open-cut or wet trench crossing method will involve trenching through the waterbody while water continues to flow through the trenching area. Prior to initiating

construction across the waterbody, the crossing section of pipeline will be fabricated (i.e., bent, welded, and coated) in adjacent ATWS areas. Backhoe-type excavators will then be used to excavate a trench in the flowing waterbody from one or both banks of the waterbody. Where the waterbody is too wide to excavate the trench from the banks, equipment may operate from within the waterbody with approval from the appropriate regulatory agencies. Equipment operating within the waterbody will be limited to that needed to construct the crossing. During these operations, flow will be maintained at the crossing as specified in the Procedures.

Spoil excavated from the trench will be placed on the bank above the high water mark (at least 10 feet from the edge of the waterbody) for use as backfill. A prefabricated segment of pipeline will then be placed into the trench using side-boom tractors. Concrete coating, applied in uplands, or pre-fabricated set-on weights will be utilized, as necessary, to provide negative buoyancy for the pipeline. Once the trench is backfilled, the banks will be restored as near as practicable to preconstruction contours and stabilized as described above. Excavated material not required for backfill will be removed and disposed of at approved upland disposal sites.

Throughout the construction process, Atlantic will follow the Procedures to avoid or minimize impacts on water quality. Construction activities will be scheduled so that the trench is not excavated across the waterbody until immediately prior to pipe laying activities. The duration of in-stream construction activities (excluding blasting, if required) will be limited to 24 hours across minor waterbodies (those 10 feet in width or less) and 48 hours across intermediate waterbodies (those between 10 and 100 feet in width).

Flume Method

The flume crossing method consists of isolating and temporarily diverting the flow of water around the crossing area through one or more large-diameter, smooth steel flume pipes placed in the waterbody. This method allows for trenching activities to occur within a relatively dry stream or riverbed (beneath the flume pipes containing the water flow), thereby avoiding the introduction of sediment and turbidity into the waterbody. The flume method is typically used to cross small to intermediate flowing waterbodies that support coldwater or other significant fisheries.

For each waterbody where the flume method is implemented, a sufficient number of adequately sized flume pipes will be installed in the waterbody to accommodate the highest anticipated flows during construction. Atlantic will use stream gauge data from the U.S. Geological Survey (USGS) to determine the highest anticipated flows during the time the flume crossing is in effect. In the absence of stream gauge data, Atlantic's engineers and Environmental Inspectors will estimate the highest anticipated flows based on the width of the waterbody at the ordinary high water mark, the depth of the waterbody, existing flows at the time of the crossing, and the weather forecast at the time of the crossing. As a contingency, Atlantic will stage additional flume pipes at the crossing in the event that the volume of flow increases due to a precipitation event.

Prior to installation, Atlantic will inspect the flume pipes to confirm that they are free of dirt, grease, oil, or other pollutants. After placing the pipes in the waterbody, sand- or pea gravel-filled bags, water bladders, or metal wing deflectors will be placed in the waterbody

around the flume pipes upstream and downstream of the proposed trench. These devices will serve to dam the stream and divert the water flow through the flume pipes, thereby isolating the water flow from the construction work area between the dams.

After installation of the flume pipes, any remaining standing water between the dams will be pumped out. Pump intakes will be appropriately screened to prevent entrainment of aquatic species. Additionally, any fish trapped in the dewatered area will be removed and returned to the flowing waterbody. Leakage from the dams or subsurface flow from below the waterbody bed may cause water to accumulate in the trench once trenching has begun. If water accumulates in this area, it may be periodically pumped out and discharged into energy dissipation/sediment filtration devices as required by the Procedures. Such devices include geotextile filter bags or straw bale structures. Alternatively, the water will be discharged into well-vegetated upland areas away from the edge of the waterbody, to prevent silt-laden water from entering the waterbody.

Backhoe-type excavators located on the banks of the waterbody will be used to excavate a trench under the flume pipe across the dewatered streambed. Spoil excavated from the waterbody trench will be placed and stored on the bank above the high water mark and a minimum of 10 feet from the edge of the waterbody. Once the trench is excavated, a prefabricated segment of pipe will be installed beneath the flume pipes. The trench will then be backfilled with the native material excavated from the trench across the waterbody bed. The banks will be stabilized before removing the dams and flume pipes and returning flow to the waterbody channel.

The flume method has proven to be an effective technique for constructing pipelines across sensitive waterbodies. The potential for the introduction of turbidity or suspended sediments is limited because sediment generated during trench excavation and backfilling operations is isolated to the dewatered area between dams. When flumes are installed properly, the operation of the flume is generally stable and can be left in place for periods prior to and following the installation of the waterbody pipeline crossing. The flume method also provides for continued fish passage through the construction work area via the flume pipes during the crossing.

Dam-and-Pump Method

The dam-and-pump method may be used as an alternative to the flume method. It generally is preferred for waterbodies where hard bedrock occurs and in-stream blasting is required. The dam-and-pump method is similar to the flume method except that pumps and hoses are used instead of flume pipes to isolate and transport the stream flow around the construction work area. Similar to the flume method, the objective of the dam-and-pump method is to create a relatively dry work area to avoid or minimize the transportation of sediment and turbidity downstream of the crossing during in-stream work.

As the first step in implementing the dam-and-pump method, one or more pumps and hoses of sufficient size to transport anticipated flows around the construction work area will be installed in the waterbody. Additional back-up pumps will be on site at all times in case of pump failure. Once the pumps are operational, the waterbody upstream and downstream of the

construction area will be dammed with sandbags and/or steel plates. As the dams are installed, the pumps will be started to maintain continuous flow in the waterbody.

Following the installation of the dams, the pumps will be run continuously until the pipeline is installed across the waterbody and the streambed and banks are restored. Pump intakes above the upstream dam will be appropriately screened to prevent entrainment of aquatic species. Energy-dissipation devices will be used to prevent scouring of the streambed at the discharge location. Water flow will be maintained through all but a short reach of the waterbody at the actual crossing location.

Backhoe-type excavators located on the banks of the waterbody will be used to excavate a trench across the waterbody. Spoil removed from the trench will be placed and stored on the bank above the high water mark at a minimum of 10 feet from the edge of the waterbody. Trench plugs will be maintained between the upland trench and the waterbody crossing. After backfilling, the dams will be removed and the banks restored and stabilized as described above.

Horizontal Directional Drill Method

The HDD method is a process that allows for trenchless construction by drilling a hole beneath a surface feature, such as a waterbody or other unique resource, and installing a prefabricated segment of pipeline through the hole. The method avoids disturbance to the surface of the right-of-way between the entry and exit points of the drill. For each HDD crossing, electric grid guide wires will be laid by hand on the ground along the pipeline centerline to create an electromagnetic sensor grid. The grid will be used by the HDD operator to steer the drill head during drilling. The sensor grid will be fabricated by installing several stakes along the drill path and wrapping them with an insulated coil wire. The wire will be energized with a portable generator, which will create a magnetic field that can be used to track the drill bit. No ground or surface disturbing activities will be required for installation of the guide wires. In thickly vegetated areas, however, a small pathway measuring approximately 2 to 3 feet in width may need to be cut with hand tools to create a path for the wires.

To complete each HDD, a drill rig will be placed on the entry side of the crossing and a small-diameter pilot hole will be drilled along a predetermined path beneath the waterbody using a powered drill bit. As drilling progresses, additional segments of drill pipe will be inserted into the pilot hole to extend the length of the drill. The drill bit will be steered and monitored throughout the process to maintain the designated path of the pilot hole. Once the pilot hole is complete, the electric sensor grid will be removed and the hole will be enlarged to accept the pipeline.

To enlarge the pilot hole, a larger reaming tool will be attached to the end of the drill on the exit side of the hole. The reamer will be drawn back through the pilot hole to the drill rig on the entry side of the hole. Drill pipe sections will be added to the rear of the reamer as it progresses toward the rig, allowing a string of drill pipe to remain in the hole at all times. Several passes with progressively larger reaming tools will be required to enlarge the hole to a sufficient diameter to accommodate the pipeline. The final hole will be approximately 12 inches larger than the pipeline to be installed.

Throughout the drilling process, a fluid mixture consisting of water and bentonite clay (a naturally occurring mineral) will be pumped into the drill hole to lubricate the bit, transport cuttings to the surface, and maintain the integrity of the hole. Water for the mixture will be pumped from the waterbody to the drill site through a hose or temporary network of irrigation-type piping or trucked in from another source. The pump intake will be appropriately screened to prevent entrainment of aquatic species. Small pits will be dug at or near the entry and exit points for the HDD to temporarily store the drilling fluid and cuttings. The fluid and cuttings will be pumped from the pits to an on-site recycling unit where the fluid will be processed for reuse.

The pipeline segment (also called a pull section) to be installed beneath the surface feature will be fabricated on the right-of-way or in the ATWS on the exit side of the crossing while the drill hole is reamed to size. Once assembled, the pull section will be coated with fusion-bonded epoxy. An abrasion resistant overlay will be applied over the fusion-bonded epoxy coating for protection from abrasive materials that may be encountered as the pull section is installed. Additionally, the pull section will be inspected and hydrostatically tested prior to installation. A steel bullhead will be welded onto the front end of the pull section to aid in pulling the pipe through the drill hole. After the hole is completed, the pipeline segment will be attached to the drill string on the exit side of the hole and pulled back through the hole toward the drill rig.

As the pipeline is being installed, excess drilling fluid will be collected and incorporated into the soil in an upland area or disposed of at an appropriate facility. If water is left over from the drilling process, it will be discharged in accordance with the Plan and Procedures and applicable permits into a well-vegetated upland area or an energy dissipation/sediment filtration device, such as a geotextile filter bag or straw bale dewatering structure, at the site.

If an HDD crossing is successful, there are little to no impacts on the surface feature being crossed. If a natural fracture or weak area in the ground is encountered during drilling, however, an inadvertent return of drilling fluid could occur. Substrate consisting of unconsolidated gravel, coarse sand, or fractured bedrock could present circumstances that increase the likelihood of an inadvertent return. Depending on the orientation of the natural fracture or substrate, the drilling fluid may move laterally or vertically from the drill hole. If the drilling fluid moves laterally, the release may not be evident on the ground. For an inadvertent return to be evident on the surface there must be a preferential pathway extending vertically from the drill hole to the surface of the ground. The volume of fluid released in an inadvertent return will be dependent on a number of factors, including the size of the pathway, the permeability of the geologic material, the viscosity of the fluid, and the pressure of the hydraulic drilling system.

Atlantic has prepared and will implement a *Horizontal Directional Drill Fluid Monitoring, Operations, and Contingency Plan* that describes the procedures to be followed in the event of an inadvertent return. If a release occurs on land, including within a wetland, a small pit will be excavated at the release site to contain the spread of the fluid, and a pump will be used to transfer the fluid from the pit into a containment vessel. If an inadvertent return occurs in a waterbody it will be more difficult to contain because the fluid will be dispersed into the water and carried downstream. In this situation, an attempt will be made to plug the flow path by adding thickening agents to the drilling fluid, such as additional bentonite, cottonseed

hulls, or other non-hazardous materials. Atlantic will consult with and obtain permission from the appropriate Commonwealth regulatory agencies regarding the use of additives during the HDD (or conventional bore) process, and confirm that additives will not violate water quality standards.

In most cases, horizontal directional drilling can continue during an inadvertent return. In some situations, however, the HDD may fail due to refusal of the drill bit or collapse of the hole in non-cohesive, unstable substrate. In cases where drilling fails, construction will be completed using one of the alternative crossing methods described above, subject to review and approval of the FERC and any required permits or authorizations for the crossing.

For the AP-3 lateral, the HDD method is proposed for the following six river crossings in the coastal zone pending the results of geotechnical investigations and final engineering:

- Blackwater River crossing approximately between MPs 38.3 and 38.7 at the Southampton County/City of Suffolk line;
- Lake Prince crossing approximately between MPs 60.9 and 61.2 in the City of Suffolk;
- Western Branch Reservoir crossing approximately between MPs 62.3 and 62.6 in the City of Suffolk;
- Western Branch Nansemond River crossing approximately between MPs 63.5 and 64.1 in the City of Suffolk;
- Nansemond River crossing approximately between MPs 64.2 and 64.9 in the City of Suffolk; and
- Southern Branch Elizabeth River crossing (part of the Intracoastal Waterway) approximately between MPs 81.7 and 82.0 in the City of Chesapeake, Virginia.

2.5.2 Wetland Crossings

Construction across wetlands will be conducted in accordance with the Procedures, site-specific modifications to the Procedures requested by Atlantic and approved by FERC, and any additional requirements identified in Federal or Commonwealth wetland crossing permits. Typical methods for construction across wetlands are described below.

In accordance with the Procedures, the width of the construction right-of-way will be limited to 75 feet through wetlands, with ATWS on both sides of wetland crossings to stage construction equipment and materials, fabricate the pipeline, and store materials and excavated spoil. ATWS will be located in upland areas a minimum of 50 feet from the wetland edge (with the exception of site-specific modifications as requested by Atlantic and approved by FERC).

Wetland boundaries will be clearly marked in the field prior to the start of construction with signs and flagging. Construction equipment working in wetlands will be limited to what is

essential for right-of-way clearing, excavating the trench, fabricating and installing the pipeline, backfilling the trench, and restoring the right-of-way. In areas where there is no reasonable access to the right-of-way except through wetlands, non-essential equipment will be allowed to travel through wetlands once, unless the ground is firm enough or has been stabilized to avoid rutting.

Clearing of vegetation in wetlands will be limited to trees and shrubs, which will be cut flush with the surface of the ground and removed from the wetland. To avoid excessive disruption of wetland soils and the native seed and rootstock within the topsoil, stump removal, grading, topsoil segregation, and excavation will be limited to the area immediately over the trenchline, except a limited amount of stump removal and grading may be conducted in other areas if required by safety-related issues. Topsoil segregation over the trenchline will only occur if the wetland soils are not saturated at the time of construction.

During clearing, sediment barriers, such as silt fences, straw bales, or other approved sediment barriers, will be installed and maintained adjacent to wetlands and within ATWS areas as necessary to minimize the potential for sediment runoff. Sediment barriers will be installed across the full width of the construction right-of-way at the base of slopes adjacent to wetland boundaries. Silt fences and/or straw bales installed across the working side of the right-of-way will be removed during the day when vehicle traffic is present, and will be replaced each night. Alternatively, drivable berms may be installed and maintained across the right-of-way in lieu of silt fences or straw bales. Sediment barriers will also be installed within wetlands along the edge of the right-of-way, where necessary, to minimize the potential for sediment to run off the construction right-of-way and into wetlands outside the work area. If trench dewatering is necessary, it will be conducted in accordance with the Procedures and applicable permits. Silt-laden trench water will be discharged into an energy dissipation/sediment filtration device, such as a geotextile filter bag or straw bale structure, to minimize the potential for erosion and sedimentation.

The method of pipeline construction used in wetlands will depend on site-specific weather conditions, soil saturation, and soil stability at the time of construction. If wetland soils are not excessively saturated at the time of construction and can support construction equipment on equipment mats, they will be crossed using conventional open-trench construction. This will occur in a manner similar to conventional upland cross-country construction techniques. In unsaturated wetlands, topsoil from the trenchline will be stripped and stored separately from subsoil.

Where wetland soils are saturated or in inundated lowlands areas where soils cannot support conventional pipe-laying equipment, the pipeline may be installed using the push-pull method. This method will involve stringing and welding the pipeline outside of the wetland and excavating and backfilling the trench using a backhoe supported by equipment mats. A prefabricated section of pipeline will be installed in the wetland by equipping it with buoys and pushing or pulling it across the water-filled trench. After the pipeline is floated into place, the floats will be removed and the pipeline will sink into place. In most cases, the pipeline will be coated with concrete prior to installation or equipped with set-on weights to provide negative buoyancy. Once the pipeline is in place, the trench will be backfilled. The push-pull

construction method minimizes the number of equipment passes, reducing wetland impacts and soil compaction in lowland areas.

Because little or no grading will occur in wetlands, restoration of contours will be accomplished during backfilling. Prior to backfilling, trench breakers will be installed, where necessary, to prevent subsurface drainage of water from wetlands. Where topsoil is segregated, the subsoil will be backfilled first followed by the topsoil. Topsoil will be replaced to the original ground level leaving no crown over the trenchline. In areas where wetlands overlie rocky soils, the pipe will be padded with rock-free soil or sand before backfilling with native bedrock and soil. Equipment mats, gravel fill, and/or geotextile fabric will be removed from wetlands following backfilling.

Where wetlands are located at the base of slopes, permanent slope breakers will be constructed across the right-of-way in upland areas adjacent to the wetland boundary. Temporary sediment barriers will be installed where necessary until revegetation of adjacent upland areas is successful. Once revegetation is successful, sediment barriers will be removed from the right-of-way and disposed of at an approved disposal facility.

2.5.3 Road, Highway, and Railroad Crossings

Construction across paved roads, highways, and railroads will be conducted in accordance with the Plan and requirements identified in road and railroad crossing permits or approvals. Most paved roads, highways, and railroads will be crossed by conventional subsurface boring beneath the roadbed or railroad. Boring activities will consist of the following: excavating a pit on each side of the road or railroad; placing boring equipment within the pits; boring a hole under the roadbed or railroad that is greater than or equal to the diameter of the pipe; and pulling a section of pipe through the hole. For long crossings, sections of pipe may be welded into a pipe string before being pulled through the borehole. Typically, there is little or no disruption to traffic at road, highway, or railroad crossings during boring operations. Depending on the locations of entry and exit points for the waterbody HDDs described above, paved roads or highways adjacent to these waterbodies may also be crossed by HDD. Currently, three HDD crossings are planned under major highways in the coastal zone: one beneath Highway 58 between MPs 70.8 and 71.4, a second beneath Interstate 64 between approximate MPs 77.8 and 77.9, and a third beneath Highway 17 between approximate MPs 78.6 and 79.1.

Unpaved roads, two-tracks, trails, and driveways, as well as roads in areas with a high water table, will be crossed using the open-cut method and then restored to preconstruction condition. This method will require temporary closure of the road to traffic and establishment of detours. If no reasonable detour is feasible, at least one lane of the road being crossed will be kept open to traffic, except during brief periods when it is essential to close the road to install the pipeline. Most open-cut road crossings will be completed and the road restored in a few days using the same type of sub-bed and surface material as the original construction. Atlantic will take measures such as posting signs at open-cut road crossings for safety and to minimize traffic disruptions.

Atlantic will work with the Cities of Suffolk and Chesapeake crossed by the ACP pipeline route and applicable land managing agencies to apply for permits and develop road mitigation that might be necessary for construction and operation of the Project.

2.5.4 Agricultural Areas

In actively cultivated and rotated croplands, pastures, orchards, nurseries, and residential areas, topsoil will be removed and segregated in accordance with the Plan. Typically, topsoil will be removed over the entire width of the construction right-of-way (with the exception of areas beneath topsoil stockpiles). Following pipeline installation, the subsoil will be returned to the ditch and the topsoil replaced in the area from which it was removed. As necessary, the working side of the right-of-way will be de-compacted prior to final grading and restoration.

Where livestock fences (including electric fences) need to be cut to access the construction right-of-way, Atlantic will brace and secure the fencing prior to construction and repair the fences to preconstruction condition or better during the restoration phase of the Project. Further, Atlantic will work with landowners to remove livestock to alternate fields during construction or maintain adequate temporary fencing in grazing areas. If cattle or other livestock are present during construction, Atlantic will install temporary fencing around the right-of-way in areas where the pipe trench is left open overnight. Additionally, Atlantic will confer with landowners regarding a potential grazing deferment to allow vegetation to establish within the right-of-way after construction of the Projects is complete.

Atlantic will work with landowners to identify drain tile systems in advance of construction, and mark the locations of any tile broken during pipeline trenching operations. Atlantic will implement temporary tile line repairs to maintain the functionality of tile drainage systems during construction. Prior to backfilling the trench, Atlantic will employ a qualified tile contractor for permanent tile repairs. Following completion of construction and restoration, Atlantic will work with landowners to repair or correct tile drainage problems due to construction of the Projects.

In agricultural lands, the pipelines will be buried at depths sufficient to provide a minimum of 4 feet of cover in order to avoid potential impacts associated with typical agricultural activities, such as plowing. In consultation with landowners, the pipeline may be buried deeper in certain locations to facilitate the passage of heavy equipment, such as logging equipment.

As part of the land acquisition process, Atlantic will seek easement agreements with affected landowners for the pipeline right-of-way across actively cultivated areas. Compensation for financial impacts associated with crop damage or losses caused by construction of the ACP will be addressed during easement discussions.

2.5.5 Residential Areas

In residential areas, construction activities will be completed as expediently as practicable to minimize disturbance to residents. While constructing in these areas, Atlantic will maintain access to the residential properties for the duration of construction activities. Where the ACP

pipeline will cross roads necessary for access to residential property and no alternative entrance exists, Atlantic will implement measures, such as plating over the open portion of the trench, to maintain passage for landowners and emergency vehicles.

In general, Atlantic will reduce the width of the construction right-of-way or adjust the pipeline centerline to avoid occupied structures. For any residences within 50 feet of a construction work area, Atlantic will implement the following mitigation measures during construction:

- avoid the removal of mature trees and landscaping unless necessary to construct the pipeline or for the safe operation of construction equipment;
- restore lawns and landscaping within the construction work area after backfilling the trench; and
- install construction fencing at the edge of the construction work area for a distance of 100 feet on either side of the residence, and maintain the fencing throughout the open trench phases of construction.

Atlantic has prepared site-specific construction mitigation plans for residences located within 50 feet of the construction work area for the ACP. The plans identify the mitigation measures Atlantic will implement at each residence to promote safe and efficient pipeline installation with minimal impact on residents.

Following construction, debris will be removed and residential areas will be restored as practicable to preconstruction conditions. Atlantic will coordinate with residential landowners to attempt to meet special requests regarding restoration.

2.5.6 Blasting

It is anticipated that blasting will be required in areas where hard shallow bedrock or boulders are encountered that cannot be removed by conventional excavation with a backhoe trencher, by ripping with a bulldozer followed by backhoe excavation, or by hammering with a backhoe-attached device followed by excavation. Based on an analysis of the Soil Survey Geographic (SSURGO) Database, there are no locations within the coastal zone (Cities of Suffolk and Chesapeake) that have shallow bedrock, or that are anticipated to require blasting. If required, strict safety precautions will be adhered to when blasting is required to clear the right-of-way and fracture the ditch. Care will be taken to avoid damage to underground structures, cables, conduits, and pipelines as well as underground watercourses or springs. Atlantic will provide adequate notice to adjacent landowners or tenants in advance of blasting to protect property or livestock. Blasting will be performed during daylight hours in compliance with Federal and State/Commonwealth codes and ordinances, manufacturers' prescribed safety procedures, and industry practices. Additionally, a *Blasting Plan* has been developed to identify blasting procedures, including safety, use, storage, and transportation of explosives, consistent with safety requirements as defined by Commonwealth regulations.

2.5.7 Winter Construction/Snow Removal

Atlantic does not expect that construction activities will occur in frozen ground conditions, but construction could occur during times of snowfall in Virginia, particularly at higher elevations. Atlantic does not anticipate snow removal or adverse winter conditions will be a concern in the coastal zone.

2.5.8 Federal Lands

The ACP will cross the Monongahela National Forest in West Virginia and the George Washington National Forest and the Blue Ridge Parkway in Virginia, all of which are outside the coastal zone. The route of the proposed AP-3 lateral will not cross any Federal Lands. Route changes were made to avoid the Great Dismal Swamp National Wildlife Refuge (GDS-NWR). The GDS-NWR is an approximately 112,000- acre preserve in southeastern Virginia and northeastern North Carolina managed by the U.S. Fish and Wildlife Service (FWS).

2.6 CONSTRUCTION SCHEDULE

Subject to receipt of the required permits and regulatory approvals, Atlantic anticipates that pre-clearing (tree felling and mowing) will commence on November 16, 2017. The ACP pipeline will be built along 17 spreads, although the number and definition of spreads may change depending on the needs of construction. Construction of AP-3 (Spread 11), including vegetation clearing and mainline construction within the coastal zone, will begin approximately in February 2018. Atlantic anticipates that all facilities will be placed in service by the fourth quarter of 2019.

On a day-to-day basis, construction activities will typically occur 10 hours per day, six days per week. Activities on the pipeline rights-of-way will mostly occur between the hours of 6 a.m. and 6 p.m.; however, there may be situations where construction will occur 24-hours per day, seven days per week (e.g., on HDDs, stream crossings, hydrostatic testing, and final tie-in welds). Aboveground facility construction activities will most likely occur between the hours of 6 a.m. and 10 p.m. Twenty-four hour construction also may occur at aboveground facilities if schedule and/or weather conditions dictate. Nighttime construction activities at aboveground facilities will likely be limited to work inside station buildings, such as electrical, controls, etc.

3.0 EVALUATION OF COASTAL EFFECTS

This section provides an evaluation that includes a set of findings relating to the probable coastal effects of the proposed project and its associated facilities to the relevant enforceable policies of Virginia's Coastal Zone Management Program (VCP).

3.1 COMPLIANCE WITH ENFORCEABLE POLICIES OF THE VCP

Atlantic is committed to constructing and operating the ACP project in a manner that will minimize environmental impacts and comply with applicable permits and approvals, the Plan and Procedures, and other known environmental requirements. Atlantic will train company and contractor personnel to familiarize them with environmental plans, permit requirements, and other conditions. Environmental Inspectors will be hired to monitor compliance during the construction and restoration phases of the ACP. Atlantic will be responsible for ensuring the implementation of environmental requirements during construction of the ACP.

A list of waterbodies crossed by the Project is provided in Appendix 4, while wetlands crossed by the Project are provided in Appendix 5. As per Department of Game and Inland Fisheries (DGIF) and Virginia Department of Environmental Quality (DEQ) requests dated November 12, 2015, an Impact Table summarizing temporary and operation/permanent impacts on waterbodies/wetlands is provided in Table 3.1-1. Appendix 6 contains datasheets, field notes and available photos for each crossing which has been field-delineated. Some features, where access to survey has not been permitted, have been identified through desktop study of National Hydrography Dataset waterbodies and National Wetland Inventory (NWI) wetlands, which do not have accompanying datasheets and photos. The locations of effected features from Appendix 6 are shown on the Aerial Maps provided in Appendix 2.

3.1.1 Fisheries Management

The program stresses the conservation and enhancement of finfish and shellfish resources and the promotion of commercial and recreational fisheries to maximize food production and recreational opportunities. This program is administered by the Marine Resources Commission (VMRC) (Virginia Code §28.2-200 through §28.2- 713) and the DGIF (Virginia Code §29.1-100 through §29.1-570).

The State Tributyltin (TBT) Regulatory Program has been added to the Fisheries Management program. The General Assembly amended the Virginia Pesticide Use and Application Act as it related to the possession, sale, or use of marine antifoulant paints containing TBT. The use of TBT in boat paint constitutes a serious threat to important marine animal species. The TBT program monitors boating activities and boat painting activities to ensure compliance with TBT regulations promulgated pursuant to the amendment. The VMRC, DGIF, and Virginia Department of Agriculture and Consumer Services share enforcement responsibilities (Virginia Code §3.1-249.59 through §3.1-249.62).

TABLE 3.1-1

Atlantic Coast Pipeline Project –Coastal Zone
Waterbody & Wetland Impact Summary Table

Wetland Classification [a]	Temporary Construction Impacts (acres) [b]	Operation Impacts (acres)[c]	Permanent Impacts (acres)[d]
PFO	102.2	38.5	0.6
PSS	20.3	2.1	0.2
PEM	18.3	0.0	0.0
PUB	0.0	0.0	0.0
E	0.0	0.0	0.4
Total	**140.8**	**40.6**	**1.2**

[a] Wetland types according to Cowardin et al. (1979):
PFO = palustrine forested
PSS = palustrine scrub-shrub
PEM = palustrine emergent
PUB = palustrine unconsolidated bottom
E = estuarine (E2E, E2EM, E2F and E2U)

[b] Temporary impacts include construction impacts due to clearing and trenching activates during construction, as well as temporary access road impacts that will be restored to preconstruction contours and revegetated after construction.

[c] Operational impacts are associated with wetland type conversion impacts as a result of operational requirements that allow a 10-foot-wide corridor centered over the pipeline to be maintained in an herbaceous state, and for the removal of trees within 15 feet on either side of the pipeline. To determine conversion impacts on scrub-shrub wetlands, a 10-foot-wide corridor centered over the pipeline was assessed. A 30-foot-wide corridor centered over the pipeline was assessed for forested wetlands.

[d] Permanent impacts will occur for above ground facility and permanent access road construction, and will result in loss of wetlands.

Waterbody Crossing	Number of crossings by the Centerline [a]	Approximate Total Crossing Width (feet) [a]
Ephemeral	2	6
Intermittent	18	162
Perennial	48	440
Pond	7	N/A
Canal/Ditch	17	123
Total	**92**	**731**

[a] Includes all waterbodies within Project areas, except crossings constructed with the Horizontal Directional Drill (HDD) method, which will not be affected by construction activities, and waterbodies within the workspace not crossed by the pipeline centerline.

Atlantic will use the open-cut, flume, dam-and-pump, or HDD methods to construct the proposed pipeline across waterbodies. These methods are described in detail in Section 2.5.1 of this report. The specific method planned for each waterbody crossing along the proposed ACP route in the coastal zone is identified in Appendix 4.

Turbidity and vegetation clearing

During construction, activities such as clearing and grading of stream banks, removal of riparian vegetation, in-stream trenching, trench dewatering, and backfilling could result in the modification of aquatic habitats. Impacts could include increased sedimentation and turbidity, increased temperature, decreased dissolved oxygen concentrations, releases of existing chemical and nutrient pollutants from disturbed sediments, and introduction of chemical contaminants, such as fuel and lubricants, due to spills. Additionally, vegetation clearing and soil compaction could potentially increase runoff and subsequent stream or peak flows.

For all crossing methods, construction activities for the ACP will be conducted in accordance with the FERC's Plan and Procedures. The Plan and Procedures identify a variety of measures designed to minimize impacts on waterbodies and associated fisheries, such as the installation and maintenance of sediment and erosion controls at waterbody crossings. ATWS will be located at least 50 feet from the water's edge at each waterbody crossing (with the exception of site-specific modifications as requested by Atlantic and approved by the FERC). These measures will minimize potential impacts due to erosion and movement of sediment from upland areas into waterbodies.

ACP construction procedures are discussed in Section 2.5. The methods allow trenching activities to occur within a relatively dry stream or riverbed, thereby avoiding the introduction of sediment and turbidity into the waterbody during construction. The flume method is often used on waterbodies containing sensitive fisheries because they provide for continued fish passage through the construction work area.

The HDD method in particular is currently being evaluated for six river and larger waterbody crossings and three highway crossings within the coastal zone. These crossing are identified in the HDD sections of 2.5.1 and 2.5.3. Because there will be no in-stream construction activities where the HDD method is used, the potential for turbidity and sedimentation in the waterbody is nearly eliminated. Other HDD crossings for the ACP could be included as a result of ongoing engineering design or consultation with permitting agencies.

Removal of vegetation and habitat at waterbody crossings has the potential to affect aquatic resources by reducing shade, cover, and nutrient input, and by affecting stream banks and sediment filtration. Temporary loss of riparian vegetation within the construction work area may affect water temperatures by removing shade sources. Due to the linear nature of the pipeline construction, and the design of most waterbody crossings perpendicular to the stream, it is expected that the potential increase in water temperature and effects on aquatic species will be minor. Use of the HDD method will eliminate the need for riparian vegetation clearing from the riverbanks at these crossings. As a result, the potential for increased runoff or turbidity associated with vegetation clearing and soil disturbance will be eliminated or reduced.

In-stream construction activities at open cut crossings typically will take place in less than 24 hours for minor waterbodies (crossings less than or equal to 10 feet in width) and less than 48 hours for intermediate waterbodies (greater than 10 feet but less than or equal to 100 feet in width), except where blasting is required, which could take longer. The short duration of construction along with the other measures identified in the Procedures will reduce the impacts of sedimentation and turbidity in the waterbodies and on aquatic life. Additionally, it is expected that individual fish, where present, will temporarily relocate upstream or downstream of the crossing locations, where necessary, to avoid turbid water.

Atlantic has developed a Virginia Fish Relocation Plan. Fish will be removed prior to in-stream construction at dry waterbody crossings. The construction areas will be isolated with barriers to prohibit movement of fish into / out of the isolated area to facilitate fish depletion surveys. Fish trapped within areas proposed for dewatering or instream work areas will be removed within 24 hours after the work area has been isolated. If water depth within the isolated work area is too deep to remove fish, and it has been determined that partial dewatering is

necessary prior to removing fish, then the pump intakes will be screened to prevent fish and aquatic biota from entering the intake. Details of relocations of threatened and endangered fishes will be documented, photographed, and summarized in a single final report to be submitted to DGIF and FWS. Unless otherwise authorized by DGIF and the FWS, fish relocation efforts will not be conducted during applicable time of year restrictions for waterbodies with known presence of or suitable habitat for the federally listed Roanoke logperch. Waterbodies will be considered free of fish once three consecutive passes with a net do not capture any fish. All aforementioned efforts will be coordinated with FWS and DGIF. Atlantic agrees to keep removed fish in a container with sufficient oxygen supply, to keep fish in containers no longer than 15 minutes, to allow the fish to acclimate to stream temperature and habitat conditions before being released, and to release fish at minimum of 50 meters downstream of the crossing location.

Inadvertent Surface Returns

As discussed above, Atlantic is currently evaluating the use of the HDD crossing method to install the pipeline beneath six rivers within the coastal zone, each of which contains fisheries resources. The HDD method is considered an effective technique for avoiding in-stream impacts on fisheries by eliminating the need for in-stream excavation. Drilling requires the use of a fluid (a non-toxic biodegradable bentonite clay and water mixture) to lubricate the drill bit and facilitate the removal of cuttings from the drill path. This drilling fluid will be mixed using surface waters in the ACP Project area. At each HDD crossing, the drilling fluid will be recycled and reused throughout the drilling process. After completion of the HDD, the drilling mud will be disposed of at an approved disposal facility.

Because the fluid is under pressure during drilling, it is possible for bentonite to escape to the surface from the drill pathway if the bit encounters existing substrate fractures or channels that lead to the surface. The movement of drilling fluid to the land surface or into stream channels is known as an inadvertent return.

Bentonite is non-toxic to aquatic organisms (Hair et al., 2002), but as with any fine particulate material (e.g., suspended soils in a muddy river) high concentrations can interfere with oxygen exchange by gills (U.S. Environmental Protection Agency [EPA], 1986). In the event of an inadvertent return to a waterbody, the impact on fisheries will be short-term and limited to individual fish in the immediate vicinity of the drilling fluid.

If spawning habitat is nearby, both anadromous and resident fish reproduction could be affected. Bentonite sediment can also smother macro-invertebrates and adversely affect filter feeders. Additionally, bentonite can exacerbate or enhance the effects of compounds toxic to fish and aquatic invertebrates if those compounds are present in aquatic habitats. Similar to other fine-grained suspended particulates, however, bentonite in flowing water is likely to remain in suspension longer than in standing water.

In general, the potential for inadvertent surface returns is highest near the HDD drill entry and exit locations when the drill bit is working nearest the surface, but is dependent on numerous factors including substrate characteristics, head pressure of the drilling fluid, topography, elevation, and subsurface hydrology. If an inadvertent return occurs in a waterbody, drilling

fluid entering the water column could cause fish, if present, to move away from the area of increased turbidity. To control the inadvertent return, an attempt will be made to plug the flow path by adding thickening agents to the drilling fluid, such as additional bentonite, cottonseed hulls, or other non-hazardous materials. Drilling fluid that enters the waterbody will likely disperse through the water column and be washed downstream of the crossing. Therefore, the effects of an inadvertent return on fish species and habitats are expected to be minor, localized, and short term.

Essential Fish Habitat

The Magnuson-Stevens Fishery Conservation and Management Act (16 United States Code 1801 et seq.) established a management system for marine fisheries resources in the United States. Specifically, Congress charged National Oceanic and Atmospheric Administration (NOAA) Fisheries and fishery management councils, along with other Federal and State/Commonwealth agencies and the fishing community, to identify habitats essential to managed species, which include marine, estuarine, and anadromous finfish, mollusks, and crustaceans. These habitats, referred to as Essential Fish Habitat (EFH), include "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity."

Atlantic reviewed multiple online resources to determine if EFH occurs in the vicinity of the Project.

Atlantic consulted with NOAA Fisheries' Northeast Regional Office to introduce the ACP and request technical assistance (Dominion, 2014a; 2014b). In their reply, the Northeast Regional Office (NOAA Fisheries, 2014) identified EFH where the proposed AP-3 route crosses the Nansemond River (approximate MP 64.4) in City of Suffolk and the Southern Branch Elizabeth River (approximate MP 81.8) and associated tidal wetlands within the City of Chesapeake.

Atlantic representatives and staff with the VMRC completed site visits to evaluate wetlands for presence of tidal influence on November 30, 2015 and May 4, 2016. Wetlands and waterbodies associated with and including Deep Creek Canal, a small tributary of Deep Creek, and the Southern Branch Elizabeth River were determined to be tidally influenced. The Southern Branch Elizabeth River and adjacent wetlands will be avoided via use of the HDD method. Wetlands associated with the Nansemond River, and the river proper, are also assumed to be tidally influenced. Site visits to the Nansemond River were determined unnecessary since avoidance of the Nansemond River and adjacent wetlands is planned via use of the HDD method.

Atlantic is proposing use of the HDD method to cross the Nansemond and Southern Branch Elizabeth Rivers, which would avoid adverse effects due to in-stream excavation on EFH in those rivers and associated tidal wetlands.

No preferred timeframes for crossing these two rivers have been identified through consultation with NOAA Fisheries Northeast Region. Although the Virginia DGIF recommends timing restrictions for anadromous fish waters and tributaries, the Southern Branch Elizabeth River and the Nansemond River and tributaries will not require the timing window unless the

Project spans the width of the river to an extent that it significantly impedes fish passage. Because use of the HDD method will avoid this potential impact, a timing window for constructing across the Southern Branch Elizabeth River and the Nansemond River is not anticipated. While water withdrawal from these waterbodies was originally considered, withdrawals are no longer proposed from these waterbodies; therefore, a timing restriction is not necessary for these activities.

The ACP is proposing to utilize municipal water for HDD mixing drilling fluid and hydrostatic testing of HDD operations and the mainline at the Southern Branch Elizabeth River and Nansemond River. These tests will be used to verify the system is free from leaks and that it will provide the required margin of safety at operating pressures. Table 3.1-2 summarizes these appropriations in the coastal zone.

Atlantic and DTI originally planned to withdraw water for hydrostatic testing and HDD from waterbodies with EFH; however, municipal sources of water are available, and will now be used as hydrostatic testing and HDD water sources. No impacts on EFH are anticipated from water usage for construction activities.

TABLE 3.1-2

Atlantic Coast Pipeline Project –Coastal Zone
Water Appropriations (gallons) from Waterbodies

	HDD Drill Mud	HDD Hydrotest	Mainline Hydrotest	Total
Blackwater River	380,000	34,000	3,500,000	3,914,000
Western Branch Reservoir	250,000	22,000	100,000	372,000

[a] Essential Fish Habitat designation
[b] Includes appropriations for both the West Branch Nansemond River and the Nansemond River

Due to minimization and avoidance measures for crossing the Southern Branch Elizabeth River and Nansemond River, Atlantic believes there will be a minimal adverse impact on EFH and no further consultation is required. Additionally, Atlantic has prepared a draft Biological Assessment evaluating the potential impacts of the Projects on federally listed species, which was filed with the FERC and USFWS on January 27, 2017. The draft Biological Assessment includes a request for NOAA Fisheries' concurrence with a minimal adverse effect determination for EFH.

Marine Mammals

To determine if marine mammals occur in the vicinity of the ACP, Atlantic consulted with NOAA Office of Protected Resources, and reviewed multiple online resources available through the NOAA Fisheries website and from state resource agencies, including: *The U.S. Atlantic and Gulf of Mexico Marine Mammal Stock Assessments – 2013* and *The Marine Mammals of Virginia*. Based on this review, the following two marine mammal species have the potential to occur in the project area in the City of Chesapeake where the AP-3 lateral proposes to cross both the Nansemond River and Southern Branch Elizabeth River:

- Common Bottlenose Dolphin: The common bottlenose dolphin of the Northern and Southern North Carolina Estuarine System Stocks has been documented in the mouth of the Chesapeake Bay, and common bottlenose dolphins have been reported in tributaries of the Chesapeake Bay in Virginia.

- Harbor Seal: The harbor seal of Western North Atlantic Stock occurs in the Chesapeake Bay and its tributaries annually from September to May.

Based on the rare occurrence of marine mammals in the waters to be crossed by the AP-3 lateral, poor habitat quality for these species in the ACP Project area, and the abundance of more suitable habitat for the species outside the vicinity Project area, The Project is not likely to result in marine mammal harassment.

Atlantic has evaluated and is planning use of the HDD construction method to install the AP-3 lateral beneath the Nansemond River and Southern Branch Elizabeth River. The HDD method will eliminate the need for in-water work at the crossing and will avoid or minimize direct impacts on marine mammals.

Tributyltin (TBT)

There is no proposed use of marine antifoulant paints containing TBT, nor is there any proposed use of pesticides during construction and/or maintenance of the Project.

The proposed Project complies with this the *Fisheries Management* section of the enforceable policies.

3.1.2 Subaqueous Lands Management

The management program for subaqueous lands establishes conditions for granting or denying permits to use state-owned bottomlands based on considerations of potential effects on marine and fisheries resources, wetlands, adjacent or nearby properties, anticipated public and private benefits, and water quality standards established by the DEQ Water Division. The program is administered by the VMRC (Virginia Code §28.2-1200 through §28.2-1213).

Table 3.1.1-1 in Appendix 4 provides a list of the waterbodies crossed by the proposed AP- 3 lateral within the Commonwealth coastal zone. For each waterbody crossing, the table includes the field survey designation (Feature ID), waterbody name, approximate crossing width, flow regime (perennial, intermittent, ephemeral, or canal/ditch), proposed crossing method, and state water classification, and indicates if there is a time of year restriction at the crossing.

As identified in table 3.1.2-1 below, within the Commonwealth, a total of 128 waterbodies will be crossed by AP-3 lateral pipeline construction workspace within the coastal zone of Suffolk City and Chesapeake City.

Impacts on waterbodies crossed by the proposed ACP facilities could occur as a result of construction activities in stream channels and on adjacent banks. Clearing and grading of stream banks, in-stream trenching, trench dewatering, and backfilling, could each result in temporary,

local modifications of subaqueous lands involving sedimentation, temporary disturbances, and soil compaction. As described in Section 3.1.1, these impacts will be limited to the period of in-stream construction, and conditions will return to normal shortly after stream restoration activities are completed.

In addition, Atlantic submitted a joint permit application in September 2015 to the VMRC that identified perennial waterbodies with a drainage area of greater than 5 square miles, for which a subaqueous lands crossing permit will be required. Atlantic continues to coordinate with the VMRC and will acquire the necessary permits from the VMRC to cross applicable subaqueous lands prior to construction of the ACP.

The proposed Project complies with this the *Subaqueous Lands Management* section of the enforceable policies.

TABLE 3.1.2-1

Atlantic Coast Pipeline Project –Coastal Zone
Waterbody Crossing Summary Table

Waterbody Regime	Waterbodies Crossed within Mainline Workspace [a]	Total Number of Open Cut Crossings [b]	Total Number of Dry Crossing, or HDD Crossings	Access Road Crossings
Ephemeral	3	0	3	0
Intermittent	27	0	19	4
Perennial	58	3	51	0
Pond/ Reservoir	10	0	4	0
Canal/Ditch	30	0	19	12
Total	**128**	**3**	**96**	**16**

[a] Includes all waterbodies within the Project areas, regardless of construction method, including crossings constructed with the Horizontal Directional Drill (HDD) method, which will not be affected by construction activities.

[b] Crossings that have an option for Open Cut have been counted as Open Cut crossings. Open Cut crossings are constructed without isolating the trench line from the waterbody being crossed, also referred to as a wet crossing.

3.1.3 Wetlands Management

The purpose of the wetlands management program is to preserve tidal wetlands, prevent their despoliation, and accommodate economic development in a manner consistent with wetlands preservation.

The tidal wetlands program is administered by the VMRC (Virginia Code §28.2-1301 through §28.2-1320).

The Virginia Water Protection Permit program administered by the DEQ includes protection of wetlands --both tidal and non-tidal. This program is authorized by Virginia Code §62.1-44.15:5 and the Water Quality Certification requirements of §401 of the Clean Water Act of 1972.

The COE and EPA jointly define wetlands as "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in

saturated soil conditions." The proposed ACP Project area contains palustrine and estuarine wetlands. Palustrine wetlands include all non-tidal wetlands dominated by lichens, emergent mosses, persistent emergent herbaceous vegetation, shrubs, or trees. Salinity in these wetlands is below 0.5 percent. Estuarine wetlands are deepwater tidal habitats and adjacent tidal wetlands which are at least occasionally diluted by freshwater runoff. Salinity gradients can range from hyperhaline to oligohaline. Riverine wetlands include all wetlands and deepwater habitats contained within a channel, with the exception of wetlands dominated by trees, shrubs, persistent emergent vegetation, emergent mosses, or lichens and habitats with water containing ocean-derived salts in excess of 0.5 percent (Cowardin et al., 1979).

During the routing phase of the Project, NWI data were used to provide a preliminary analysis of wetland resources and to assess where wetland impacts could be avoided or minimized. NWI data were also used to estimate the number, size, and locations of wetlands along the proposed pipeline routes prior to conducting wetland delineations in the field. The wetland delineation study area for the ACP consisted of a 300-foot-wide corridor centered on the proposed pipeline centerlines, a 50-foot-wide corridor centered over access roads, and the construction footprints at aboveground facility sites.

Based on field survey data augmented by FWS NWI data, the proposed ACP facilities within the Commonwealth's coastal zone will cross palustrine emergent (PEM), palustrine scrub-shrub (PSS), palustrine forested (PFO), and estuarine (E) wetland types. Atlantic will continue to conduct field surveys of waterbodies and wetlands as landowners grant access permission. In the event that landowner permission is not granted, Atlantic would complete surveys following a court's verification of Atlantic's authority to access property under state law, or issuance of the FERC Certificate of Public Convenience and Necessity. Atlantic has incorporated NWI and National Hydrography Dataset data on parcels where landowner permission is not granted. These desktop data provide an accurate representation of waterbodies and wetlands that will be impacted during construction. To date, approximately 95 percent of the route in the coastal zone has been surveyed.

Atlantic is committed to verifying the locations of waterbodies and wetlands prior to construction, protecting these resources throughout construction, restoring preconstruction contours and reestablishing vegetation where ground disturbance occurs, and providing compensatory mitigation as required by the COE for additional wetlands impacts that may be identified on landowner parcels where field verification has not yet occurred.

Appendix 5 provides a complete list of wetlands identified within the coastal zone, with their MP locations, classification, crossing length, and area affected by construction and operation of the Project.

The combined linear crossing distance of all wetlands in the coastal zone is 15.7 miles, accounting for approximately 35 percent of the total length of the 44.7 miles of pipeline within the coastal zone. Approximately 3.0 miles of the wetlands crossed by the ACP are characterized as PEM, 10.3 miles are characterized as PFO, and 1.7 miles are characterized as PSS. The remaining 0.8 mile of wetlands consists of estuarine wetlands. In the coastal zone, approximately 140.8 acres of wetlands will be temporarily impacted by construction of the ACP facilities. Maintenance activities along the pipeline right-of-way will impact approximately

40.6 acres of wetlands due to the conversion of PFO and PSS wetlands to PEM wetlands, resulting in 38.0 acres of PFO wetlands and 2.1 acres of PSS wetlands conversion. In addition, permanent impacts due to aboveground facilities and access roads will impact approximately 1.2 acres, including 0.6 acre PFO, 0.2 acre PSS, and 0.4 acre estuarine.

Construction activities may affect wetlands in several ways. Clearing and grading of wetlands, trenching, backfilling, and trench dewatering can affect wetlands through the alteration of wetland vegetation and hydrology; loss or change to wildlife habitat; erosion and sedimentation; and accidental spills of fuels and lubricants.

Atlantic will minimize impacts on wetlands by following the wetland construction and restoration guidelines contained in the Plan and Procedures. The proposed wetland mitigation measures are intended to avoid wetland impacts to the greatest extent practicable; minimize the area and duration of disturbance; reduce soil disturbance; and enhance wetland revegetation after construction. Some of the mitigation measures proposed include:

- limiting the construction right-of-way width to 75-feet through wetlands;
- locating ATWS at least 50 feet away from wetland boundaries;
- preventing the compaction and rutting of wetland soils by operating equipment off of equipment mats or timber riprap in wetlands that are not excessively saturated;
- installing trench breakers or trench plugs at the boundaries of wetlands to prevent draining of wetlands;
- installing temporary and permanent erosion and sediment control devices, and re-establishing vegetation on adjacent upland areas, to avoid erosion and sedimentation into wetlands; and
- annual monitoring of the success of wetland revegetation following construction until wetland revegetation is successful.

Restoration/revegetation of wetlands will be considered successful when the affected wetland satisfies the Federal definition of a wetland (i.e., soils, hydrology, and vegetation); the vegetation is at least 80 percent of the cover documented for the wetland prior to construction, or at least 80 percent of the cover in adjacent, undisturbed areas of the wetland; or the plant species composition is consistent with early successional wetland plant communities in the affected ecoregion (if natural rather than active revegetation is used); and invasive plant species are absent, unless they are present in adjacent areas that were not disturbed by construction.

The alteration of wetland vegetation is the primary impact of pipeline construction and right-of-way maintenance activities on wetlands. Most impacts associated with construction activities are considered temporary, but long-term impacts on wetland vegetation may occur depending on the time required for reestablishment of wetland functions associated with vegetation cover. Impacts on herbaceous wetlands (PEM) will be temporary as vegetation is expected to fully regenerate within one to three years. Impacts on PSS wetlands will take longer

to reestablish to preconstruction conditions and may take five or more years depending on the age and complexity of the system and the species of shrubs impacted. The impacts on PFO wetlands will be long-term due to the length of time required for a forest community to regenerate. However, many wetland functions such as surface water detention, nutrient recycling, particle retention, and some wildlife habitat will be restored prior to the full regeneration of the forest.

To promote reestablishment of wetland vegetation, the topsoil from the trench line will be segregated in non-saturated wetlands and returned to its original location during backfilling to avoid changes in the subsurface hydrology and to promote re-establishment of the original plant community by replacing the seed bank found in the topsoil. Where necessary, for example if there is poor reestablishment of vegetation after restoration, wetlands will be planted with native vegetation and/or seeded with predetermined seed mixes (approved by the appropriate agencies) to promote the reestablishment of wetland vegetation. An *Invasive Plant Species Management Plan* will be implemented to reduce and control the spread of invasive non-native species in the Project areas, including wetlands.

Following pipeline construction, Atlantic will periodically remove woody species from wetlands to facilitate post-construction monitoring and inspections of the maintained pipeline right-of-way. In accordance with the Plan and Procedures, Atlantic will maintain a 10-foot wide corridor centered over the pipeline in an herbaceous condition. Additionally, any woody species within 15 feet of the pipeline with roots that could compromise the integrity of the pipeline will be removed. These maintenance activities will not allow PSS and PFO wetlands to fully reestablish within the maintained right-of-way, which will alter these wetlands by changing their structure and function. Based on a combination of field survey data and NWI data, approximately 40.6 acres of PFO and PSS wetlands within the coastal zone will be converted to herbaceous wetlands by the ACP.

In order to reduce impacts on wetlands, Atlantic has made and will continue to evaluate minor route adjustments, where practicable, based on the results of biological field surveys to minimize or avoid impacts on wetlands. Additionally, as discussed above, Atlantic will reduce the construction right-of-way to 75-feet in wetlands and will cross some wetlands using the HDD crossing method. Finally, Atlantic will allow the majority of wetlands impacted during construction to return to their preconstruction condition as described above.

Atlantic will prepare Compensatory Wetland Mitigation Plans for the ACP as part of its joint-permit application to the COE, for a Department of the Army Permit under Section 404 of the Clean Water Act, and to the Virginia DEQ, for the Virginia Water Protection Permit. Copies of these plans will be filed with FERC when they have been approved.

The proposed Project complies with this the *Wetlands Management* section of the enforceable policies.

3.1.4 Dunes Management

Dune protection is carried out pursuant to the Coastal Primary Sand Dune Protection Act and is intended to prevent destruction or alteration of primary dunes. This program is

administered by the Marine Resources Commission (Virginia Code §28.2-1400 through §28.2-1420).

The proposed Project does not impact primary dunes since ACP is not located in any of the eight localities listed in the *Coastal Primary Sand Dunes and Beaches Protection Act*, which include the Counties of Accomack, Lancaster, Mathews, Northampton, and Northumberland or the cities of Hampton, Norfolk, and Virginia Beach.

The proposed Project will not impact dunes. The proposed Project complies with this the *Dunes Management* section of the enforceable policies.

3.1.5 Non-point Source Pollution Control

Virginia's Erosion and Sediment Control Law requires soil-disturbing projects to be designed to reduce soil erosion and to decrease inputs of chemical nutrients and sediments to the Chesapeake Bay, its tributaries, and other rivers and waters of the Commonwealth. This program is administered by DEQ (Virginia Code §62.1-44.15:51 et seq.).

Soil characteristics along the AP-3 lateral were identified and assessed using the SSURGO database. This database is a digital version of the county soil surveys developed by the U.S. Department of Agriculture's Natural Resources Conservation Service. The SSURGO database was queried for attribute data pertaining to prime farmland and hydric soils, compaction prone soils, water and wind erodible soils, soils with revegetation concerns, rocky soils, and shallow to bedrock. Table 3.1.5-1 provides acreage of each classification.

TABLE 3.1.5-1

Atlantic Coast Pipeline Project – Commonwealth of Virginia
Acres of Soil Characteristics Affected within Coastal Zone

Pipeline Facility/County or City/State or Commonwealth	Total Acres in County/City	Prime Farmland [c]	Hydric Soils	Compaction Prone [d]	Highly Erodible		Revegetation Concerns [g]	Rocky [h]	Shallow to Bedrock [i]
					Water [e]	Wind [f]			
ATLANTIC COAST PIPELINE									
AP-3									
City of Suffolk, VA	360.2	198.7	123.7	57.5	27.8	159.9	152.4	0.0	0.0
City of Chesapeake, VA	112.8	60.4	79.0	0.8	10.2	9.1	6.6	0.0	0.0
Total	**473.0**	**259.1**	**202.7**	**58.3**	**38.0**	**169.0**	**159.0**	**0.0**	**0.0**

Sources: Soil Survey Staff, 2015a and 2015b

[a] The area affected includes the permanent pipeline right-of-way, temporary construction right-of-way, and additional temporary workspace, ground beds, and topsoil segregation areas.

[b] The numbers in this table have been rounded for presentation purposes. As a result, the totals may not reflect the sum of the addends. The values in each row do not add up to the total acreage for each County/City because the soils may occur in more than one characteristic class or may not occur in any class listed in the table.

[c] As designated by the Natural Resources Conservation Service, prime farmland includes those soils that are considered prime if a limiting factor is mitigated (e.g., through artificial drainage).

[d] Soils in somewhat poor to very poor drainage classes with surface textures of sandy clay loam and finer.

[e] Soils in land capability subclasses 4E through 8E and soils with an average slope greater than eight percent.

[f] Soils with a Wind Erodibility Group classification of 1 or 2.

[g] Soils with a surface texture of sandy loam or coarser that are moderately well to excessively drained, and soils with an average slope greater than eight percent.

[h] Soils with one or more horizons that have a cobbley, stony, bouldery, channery, flaggy, very gravelly, or extremely gravelly modifier to the textural class and/or contain greater than five percent by weight rocks larger than three inches.

[i] Soils identified as containing bedrock within 60 inches of the soil surface.

Pipeline construction activities that have the potential to affect soil stability and revegetation efforts include clearing of vegetation, topsoil stripping, grading, trenching, backfilling, and restoration. Potential soil impacts include:

I. loss of soil due to water or wind erosion;

II. reduction of soil quality by mixing topsoil with subsoil or by bringing excess rocks to the surface;

III. soil compaction due to traffic by heavy construction equipment; and

IV. disruption of surface and subsurface drainage systems.

In addition, the presence of certain soil conditions along the pipeline routes (e.g., droughty soils) could result in poor revegetation of the rights-of-way, increasing the time to stabilize soils.

To minimize impacts on soils, Atlantic will implement the best management measures outlined in the 2013 versions of FERC's Plan and Procedures. In addition, Atlantic will develop a site-specific Erosion and Sediment Control Plan and Stormwater Pollution Prevention Plan utilizing DTI's Annual Standards and Specifications, which will be reviewed and approved by DEQ. The Annual Standards and Specifications will be compared with FERC's Plan and Procedures to determine the appropriate (i.e., whichever is more stringent) best management practices.

Sediment barriers (e.g., silt fences, straw bales, and straw logs) protect surface waters and roadways by controlling the movement of sediment on the construction right-of-way and by preventing the transport of sediment off the construction right-of-way. Atlantic will install and maintain these devices at the base of slopes adjacent to wetland, waterbody, and road crossings, as appropriate, and in other areas, as necessary, until permanent revegetation measures have been deemed successful and the potential for siltation has been minimized.

If dewatering is required, it will be conducted in accordance with the Plan and Procedures, Annual Standards and Specifications and applicable permits in a manner that will not cause erosion or result in silt-laden water flowing into a wetland or waterbody.

An SPCC Plan has been prepared for the Project and will be utilized to identify and implement preventive measures, such as training, equipment inspection, and refueling procedures, to reduce the likelihood of spills; and mitigation measures, such as containment and cleanup, to minimize potential impacts should a spill occur. Atlantic's construction contractors, whose activities could result in a spill of fuel or other hazardous materials, will be required to adopt protocols for spill prevention, cleanup, and reporting during construction of the ACP.

Atlantic will make every effort to promote the rapid, successful establishment of vegetation on areas requiring revegetation as described in the Plan. Following final grading and cleanup, Atlantic will condition the construction right-of-way for planting, including the preparation of a seedbed and application and incorporation of soil amendments at rates agreed to

by the landowner or land managing agency, or as specified in writing by an appropriate soil conservation authority. Seeding and mulching in cultivated areas will conform to the adjacent off-right-of-way area unless otherwise requested in writing by the landowner. Atlantic will seed areas in accordance with written recommendations for seed mixes, rates, and dates obtained from the appropriate soil conservation authorities or land managing agencies.

The proposed Project complies with this the *Non-Point Source Pollution Control* section of the enforceable policies.

3.1.6 Point Source Pollution Control

The point source program is administered by the State Water Control Board (DEQ) pursuant to Virginia Code §62.1- 44.15. Point source pollution control is accomplished through the implementation of the National Pollutant Discharge Elimination System permit program established pursuant to Section §402 of the federal Clean Water Act and administered in Virginia as the Virginia Pollutant Discharge Elimination System permit program. The Water Quality Certification requirements of §401 of the Clean Water Act of 1972 is administered under the Virginia Water Protection Permit program.

Following construction, the pipeline will be hydrostatically tested to verify the integrity of the welds in accordance with 49 CFR 192.

Water for hydrostatic testing and HDD drill mud will be withdrawn from surface or municipal sources, and hydrostatic test water will be discharged, in accordance with Commonwealth regulations and required permits. Within the coastal zone area approximately 3.9 million gallons of water will be withdrawn from the Blackwater River and approximately 0.4 million gallons from the Western Branch Reservoir to complete hydrostatic testing and HDD activities (table 3.1-2). Once hydrostatic testing is complete, the test water will be discharged to well-vegetated upland areas. The discharge rate will be regulated using valves and energy dissipation devices to prevent erosion. No chemicals will be added to the test water during hydrostatic testing.

The proposed Project complies with this the *Point Source Pollution Control* section of the enforceable policies.

3.1.7 Shoreline Sanitation

The purpose of this program is to regulate the installation of septic tanks, set standards concerning soil types suitable for septic tanks, and specify minimum distances that tanks must be placed away from streams, rivers, and other waters of the Commonwealth. This program is administered by the Department of Health (Virginia Code §32.1-164 through §32.1-165).

N/A. The proposed aboveground improvements (M&R Stations, Valve Sites, Compressor Sites, etc.) do not include the addition of, or modification of any septic tanks or septic fields.

The proposed Project complies with this the *Shoreline Sanitation* section of the enforceable policies.

3.1.8 Air Pollution Control

The program implements the federal Clean Air Act to provide a legally enforceable State Implementation Plan for the attainment and maintenance of the National Ambient Air Quality Standards. This program is administered by the State Air Pollution Control Board (Virginia Code §10.1-1300 through 10.1-1320).

Atlantic has not proposed to install any compressor stations within the Commonwealth of Virginia's coastal zone (Cities of Suffolk and Chesapeake), and therefore will not negatively impact existing air quality conditions.

The proposed Elizabeth River M&R station located in the City of Chesapeake will not include heaters and/or microturbines, and therefore will not negatively impact existing air quality conditions.

Construction Emissions

Construction activities will result in temporary increases in emissions of some pollutants due to the use of non-stationary equipment powered by diesel fuel or gasoline engines; the temporary generation of fugitive dust due to disturbance of the ground surface, vegetation clearing, and other dust generating actions; and indirect emissions attributable to workers commuting to and from work sites during construction.

These sources are not considered stationary sources and their impacts will generally be temporary and localized. Therefore, the emissions are not required to be evaluated as part of the Prevention of Significant Deterioration or Nonattainment New Source Review major source determination analysis. Furthermore, the emissions from construction activities are not expected to cause or significantly contribute to an exceedance of the National Ambient Air Quality Standards.

Fugitive Dust Emissions

Fugitive dust will result from land clearing, grading, excavation, concrete work, and vehicle traffic on paved and unpaved roads. Contractor(s) are not expected to utilize open burning as a means of disposing of land-clearing waste during construction within the coastal zone.

The amount of dust generated will be a function of construction activity, soil type, soil moisture content, wind speed, precipitation, vehicle traffic, vehicle types, and roadway characteristics. Emissions will be greater during dry periods and in areas of fine textured soils subject to surface activity. The Project will employ proven construction-related practices to control and limit releases of fugitive dust, including the application of water or other commercially available dust control agents on unpaved areas subject to frequent vehicle traffic. Additionally, Atlantic has prepared and will implement a *Fugitive Dust Control and Mitigation*

Plan for the Project, which identifies the measures to be implemented during construction to control fugitive dust.

Construction Engine Emissions

Construction related emissions were estimated based on typical construction equipment, hours of operation, and vehicle miles traveled by the construction equipment and supporting vehicles for the ACP. Under a conservative estimate, based on worst-case assumptions and the EPA emission factors, the estimated air emissions from construction is expected to be transient in nature, with negligible impact on the regional air quality. Construction equipment will be properly maintained and operated only on an as-needed basis to minimize the construction engine emissions.

The proposed Project complies with this the *Air Pollution Control* section of the enforceable policies.

3.1.9 Coastal Lands Management

Coastal Lands Management is a state-local cooperative program administered by DEQ's Water Division and 84 localities in Tidewater, Virginia established pursuant to the Chesapeake Bay Preservation Act (Virginia Code §62.1-44.15:67 – 62.1-44.15:79) and Chesapeake Bay Preservation Area Designation and Management Regulations (Virginia Administrative Code 9 Virginia Code 25-830-10 et seq.).

In accordance with 9 Virginia Code 25-830-150 B.1., construction, installation, operation, and maintenance of natural gas transmission lines and their appurtenant structures in accordance with (i) regulations promulgated pursuant to the Erosion and Sediment Control Law and the Virginia Stormwater Management Act, (ii) an erosion and sediment control plan and a stormwater management plan approved by DEQ, or (iii) local water quality protection criteria at least as stringent as the above state requirements will be deemed to constitute compliance with the Chesapeake Bay Preservation Act requirements of this chapter.

Atlantic will adopt and implement the 2013 versions of FERC's Plan and Procedures. As such, the ACP will provide for the protection of water quality, while also accommodating economic development. In addition, Atlantic will update Annual Standards and Specifications used by DTI and seek review by DEQ. The DEQ-approved Annual Standards and Specifications will then be used to determine the appropriate best management practices that meet or exceed FERC's Plan and Procedures during construction.

The Plan and Procedures, and Annual Standards and Specifications, will be implemented before, during and after soil disturbing activities. Furthermore, after the pipeline is installed across a waterbody using one of the methods described in Section 2.5.1, the stream banks will then be restored as near as practicable to pre-existing conditions and stabilized. Stabilization measures could include seeding, tree planting, installation of erosion control blankets, or installation of riprap materials, as appropriate. Jute thatching or bonded fiber blankets will be installed on banks of waterbodies or road crossings to stabilize seeded areas. Temporary erosion controls will be installed immediately following bank restoration. The waterbody crossing area will be inspected and maintained until restoration of vegetation is complete.

To minimize or avoid potential impacts due to soil erosion and sedimentation, Atlantic will implement the measures outlined in the Plan and Procedures and Annual Standards and Specifications. Temporary erosion controls will be installed following initial clearing and prior to ground disturbance and will be maintained throughout construction. Atlantic will attempt to complete final cleanup and installation of permanent erosion control measures in an area within 20 days after backfilling the trench in that area or within seven days after final grade is reached, whichever occurs first, weather and soil conditions permitting. In no case will restoration of an area be delayed beyond the next available seeding season.

Temporary erosion control measures and permanent erosion control devices employed during and after construction are described below.

- Temporary Stone Construction Entrance - A construction entrance will be constructed at any point where construction equipment leaves the right-of-way and enters a paved public road or other paved surface. The construction entrance will function to remove mud from vehicles and equipment leaving the right-of-way.

- Slope Breakers - Temporary and permanent slope breakers will be installed, where required, to slow runoff velocity and direct water off the rights-of-way. Temporary slope breakers, constructed of materials such as compacted soil, stone, or some functional equivalent such as hay bales (weed free), silt fence, or earthen berms, will be installed prior to the start of construction activities. Permanent slope breakers will be installed during final grading.

- Temporary Sediment Barriers – Temporary sediment barriers, such as silt fences, staked hay or straw bales (weed free), or a combination of both, will be installed at the base of slopes adjacent to road, wetland, and waterbody crossings, and in other areas where required to prevent the transport of sediment off the construction rights-of-way.

- Permanent Trench Breakers - Sacks of subsoil or sand, polyurethane foam, or bentonite clay bags installed around the pipe will remain in the trench to prevent subsurface channeling of water along the trench.

- Temporary Diversion Dike – A temporary ridge of compacted soil constructed at the top of a sloping disturbed area will be used to divert stormwater runoff from upslope drainage areas away from the unprotected slope. Temporary diversion dikes can also be constructed at the base of a slope to protect adjacent and downstream areas by diverting sediment-laden runoff from a disturbed area to a sediment-trapping control measure.

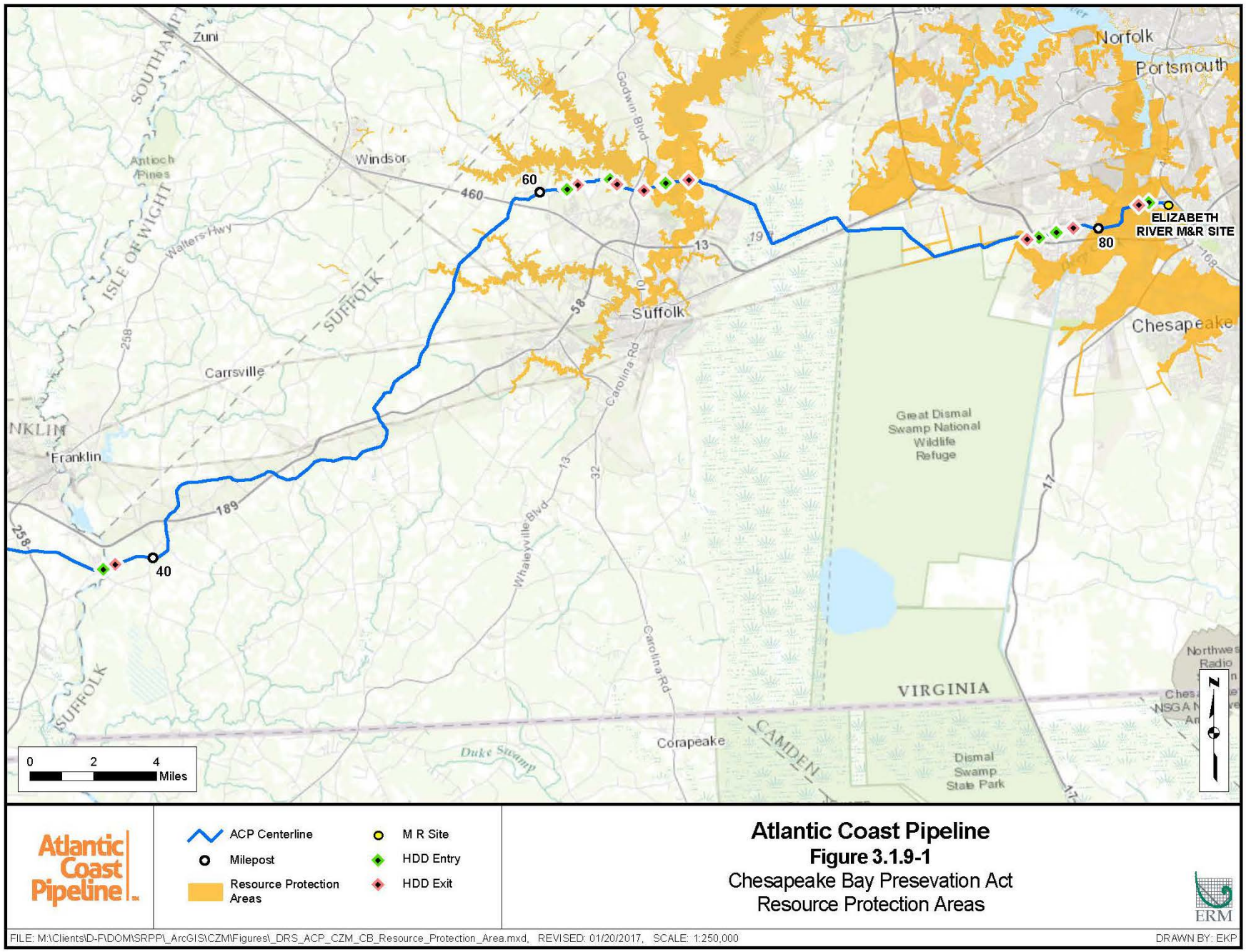
- Temporary Sediment Trap - A temporary ponding area formed by constructing an earthen embankment with a stone outlet may be used to detain sediment-laden runoff from small disturbed areas (where total drainage area is less than three acres) to allow sediment to settle out prior to discharge. The sediment trap may be constructed either independently or in conjunction with a temporary diversion dike as a suitable option for outlet control.

- Mulch – Straw (weed free), hay (weed free), erosion-control fabric, or other equivalent material will be placed on the rights-of-way, where required, to protect the soil surface from water and wind erosion and to optimize the soil moisture regime necessary for successful revegetation, especially on dry, sandy sites.

During construction, the effectiveness of temporary erosion control devices will be monitored by Atlantic's Environmental Inspectors. The effectiveness of revegetation and permanent erosion control devices will be monitored by Atlantic's operating personnel during the long-term operation and maintenance of each pipeline system. Except in active agricultural areas, temporary erosion control devices will be maintained until the right-of-way is revegetated successfully. Following successful revegetation of construction areas, temporary erosion control devices will be removed.

Resource Protection Areas (RPA)

Resource Protection Areas (RPA), lands significant to the protection of water quality as outlined in the Chesapeake Bay Preservation Act, are composed of tidal wetlands, nontidal wetlands connected by surface flow and contiguous to tidal wetlands or water bodies with perennial flow, tidal shores, such other lands considered necessary to protect the quality of state waters, and a 100-foot-buffer adjacent to and landward of these features (see Figure 3.1.9-1). RPAs within the coastal zone along the ACP AP-3 lateral consist of waterbodies and adjacent wetlands along the Southern Branch Elizabeth River, Blackwater River, and estuarine wetlands identified in Appendix 5.


Zuni
Windsor
Norfolk
Portsmouth
Antioch Pines
ISLE OF WIGHT
SUFFOLK
Walters Hwy
460
60
Godwin Blvd
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58
Suffolk
Carrsville
Carolina Rd
Franklin
189
258
40
Whaleyville Blvd
32
ELIZABETH RIVER M&R SITE
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Resource Protection Areas
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HDD Exit
Atlantic Coast Pipeline
Atlantic Coast Pipeline
Figure 3.1.9-1
Chesapeake Bay Presevation Act
Resource Protection Areas
ERM
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Options for routing the AP-3 lateral were limited due to urbanization in and around the cities of Suffolk and Chesapeake, which have built out to the northern boundary of the GDS-NWR, another significant routing consideration for Atlantic. Atlantic proposes a route in the City of Chesapeake that maximized avoidance of the GDS-NWR by routing along the northern boundary of the refuge, and proposes HDD construction to cross the Southern Branch Elizabeth River.

The ACP route in the City of Suffolk has reduced impacts to RPAs in the coastal zone by proposing HDD construction methodology to cross the Blackwater River, and select tributaries to Lake Prince, Western Branch Reservoir, and the Nansemond River.

Resource Management Areas

While RPAs protect and benefit water quality, resource management areas have the potential to damage water quality without proper management; examples include but are not limited to floodplains, erodible soils, and steep slopes.

Within the coastal zone, only the Elizabeth M&R Station is located aboveground and within the 100-year floodplain; the remaining portions of the Project within the coastal zone are underground. Atlantic will implement design criteria and applicable local permit requirements at these facilities to mitigate impacts on floodplains. Floodplain permits are expected to be acquired for both the pipeline and aboveground facilities where they cross or are within floodplains and where floodplain permits are required.

Access roads built within 100- and 500-year floodplains also could require permitting. Permitting requirements are dependent on local ordinances regarding aboveground improvements within the floodplain and general permitting requirements for road construction and land disturbance. Atlantic anticipates that access road design will avoid impacts to floodplains, but could require some level of site-specific analysis to confirm no impacts to base-line flood elevations. Atlantic will implement design criteria based on local permit requirements and Federal Emergency Management Agency standards for new access roads located within designated floodplains.

Soils most susceptible to erosion by water are typified by bare or sparse vegetative cover, noncohesive soil particles with low infiltration rates, and moderate to steep slopes. Wind erosion processes are less affected by slope angles. Clearing, grading, and equipment movement could accelerate the erosion process and, without adequate protection, result in discharge of sediment to waterbodies and wetlands.

Approximately 38 acres (approximately 8.0 percent) of the soils that will be impacted by the proposed ACP facilities within the coastal zone are considered susceptible to erosion by water. Additionally, approximately 169.0 acres (approximately 35.7 percent) of the soils crossed by the proposed AP-3 lateral within the coastal zone have a Wind Erodibility Group classification of 2 or less and are considered highly wind erodible.

To minimize or avoid potential impacts within the Chesapeake Bay Preservation Areas due to soil erosion and sedimentation, Atlantic will implement the measures outlined in the Plan

and Procedures and Annual Standards and Specifications, as well as Commonwealth and local regulations or guidelines. Temporary erosion controls will be installed following clearing and prior to initial ground disturbance and will be maintained throughout construction. Atlantic will attempt to complete final cleanup and installation of permanent erosion control measures in an area within 20 days after backfilling the trench in that area or within seven days after final grade is reached, whichever occurs first, weather and soil conditions permitting. In no case will restoration of an area be delayed beyond the next available seeding season.

During construction, the effectiveness of temporary erosion control devices will be monitored by Atlantic's Environmental Inspectors. The effectiveness of revegetation and permanent erosion control devices will be monitored by Atlantic's operating personnel during the long-term operation and maintenance of each pipeline system. Except in active agricultural areas, temporary erosion control devices will be maintained until the right-of-way is revegetated successfully. Following successful revegetation of construction areas, temporary erosion control devices will be removed.

The proposed Project complies with this the *Coastal Lands Management* section of the enforceable policies.

3.2 COMPLIANCE WITH ADVISORY POLICIES OF THE VCP

The ACP demonstrates adequate consideration of policies which are in the nature of recommendations.

3.2.1 Coastal Natural Resource Areas

These areas are vital to estuarine and marine ecosystems and/or are of great importance to areas immediately inland of the shoreline. Such areas receive special attention from the Commonwealth because of their conservation, recreational, ecological, and aesthetic values. These areas are worthy of special consideration in any planning or resources management process and include the following resources:

I. Wetlands

Wetlands, wetland impacts, and wetland restoration is described in Section 3.1.3.

II. Aquatic Spawning, Nursery, and Feeding Grounds

Waterbodies with Commonwealth Fish Classifications

The waterbody crossings by the proposed AP-3 lateral route in Virginia are classified as Inland Waterbodies with the Aquatic Life classification, Migratory Fish Spawning and Nursery, or are unclassified waterbodies. The proposed AP-3 lateral does not cross any trout waters.

There are 5 waterbodies crossed by the proposed AP-3 lateral within the coastal zone that are classified as Aquatic Life with sub-classifications, and an additional 14 tributaries of these classified waterbodies are crossed. Four waterbodies are classified as Migratory and Fish Spawning Nursery areas including crossings of the Blackwater River, Western Branch

Nansemond River Nansemond River and the Southern Branch Elizabeth River. Additionally, these are all either warmwater habitats or estuarine habitats that do not support coldwater trout.

Anadromous Fish

The Fisheries Division of the DGIF identifies Anadromous Fish Use Areas, which are stream reaches that are confirmed, or potential migration pathways, spawning grounds, or nursery areas for anadromous fish. The proposed AP-3 lateral route crosses waterbodies in Virginia known to contain anadromous species (see Table 3.2.1-1).

Waterbodies containing confirmed anadromous fish use are listed in Appendix 4. Review of data provided in the Wildlife Environmental Review Map Service (WERMS) in addition to correspondence with DGIF identified crossings of waterbodies along the proposed AP-3 lateral route which are known to contain anadromous fish use areas where migration and spawning occur. For the AP-3 coastal zone, these areas consist of the Blackwater River and the Southern Branch Elizabeth River. DGIF and NOAA recommend avoidance of in-stream work in anadromous fish waters and their tributaries generally from February 15 through June 30, with some exceptions (DGIF, 2013b, NOAA Fisheries, 2015). In addition to the confirmed anadromous fish use areas identified above, DGIF identified the Nansemond River in the City of Suffolk as Potential Anadromous Fish Use Areas. The proposed AP-3 lateral will cross Western Branch Nansemond River and the Nansemond River which are classified as a Potential Anadromous Fish Use Areas. As identified in Section 3.1.1, the ACP will avoid impacts to the Blackwater, Western Branch Nansemond, Nansemond, and Southern Branch Elizabeth Rivers by utilizing the HDD construction method and a committment to not withdrawing water from these waterbodies.

TABLE 3.2.1-1

Representative Fish Species in Waterbodies Crossed by the Atlantic Coast Pipeline in the Commonwealth of Virginia

Virginia[a]		
Warmwater Fishes		
striped bass[b] (*Morone saxatillis*)	yellow perch (*Perca flavescens*)	redear sunfish (*Lepomis microlophus*)
largemouth bass (*Micropterus salmoides*)	longnose gar (*Lepisosteus osseus*)	flathead catfish (*Pylodictis olivaris*)
Alewife[b] (*Alosa pseudoharengus*)	American shad[b] (*Alosa sapidissima*)	fathead minnow (*Pimephales promelas*)
golden shiner (*Notemigonus crysoleucas*)	white crappie (*Pomoxis annularis*)	bowfin (*Amia calva*)
Coldwater Fishes		
rainbow trout (*Oncorhynchus mykiss*)	brown trout[b] (*Salmo trutta*)	brook trout[b] (*Salvelinus fontinalis*)
chain pickerel (*Esox niger*)	least brook lamprey (*Lampetra aepyptera*)	walleye (*Sander vitreus*)

[a] Source: DGIF, 2013a
[b] Anadromous species

Hatcheries

N/A. DGIF operates nine fish cultural stations around the Commonwealth. These are categorized as either “rearing stations” or “hatcheries.” Four stations are coolwater and warmwater facilities that hatch and rear species like muskellunge, northern pike, striped bass, walleyes, catfish, largemouth bass, bluegill, and redear sunfish. Five stations are coldwater facilities engaged entirely in trout production, from hatching and raising to stocking sizes. The

Montebello Fish Cultural Station, a small trout rearing facility, is located approximately 13 miles west of the proposed AP-1 mainline route in Nelson County (approximate MP 170.0). None of the other stations are located in the Counties or Cities crossed by the ACP.

Game Fish

Game Fish as defined by the Code of Virginia includes trout, all fish of the sunfish family (including largemouth bass, smallmouth bass, spotted bass, rock bass, bream, bluegill, and crappie), walleye, white bass, chain pickerel, muskellunge, northern pike, and striped bass. There is a continuous, year-round season for all freshwater game and nongame fish with the exception of special times and limited closures for trout (DGIF, 2014a).

Regulations for anadromous (coastal) striped bass, alewife, and blueback herring above and below the fall line in tidal rivers of the Chesapeake Bay, anadromous (coastal) American shad and hickory shad, and all other saltwater fish below the fall line in tidal rivers of the Chesapeake Bay, are set by the Virginia Marine Resources Commission. Approximately 21 waterbodies crossed by the proposed ACP pipeline facilities in Virginia are classified as supporting recreational fishing and game species. According to the WERMS data, the proposed AP-3 mainline crosses two public fishing lakes in City of Suffolk County, Lake Prince, and Western Branch Reservoir. As stated in Section 3.1.1, fish will temporary relocate during construction activities. In addition, implementation of the FERC Plan and Procedures will minimize negative impacts to fish.

Commercial Fisheries

VMRC is the Commonwealth agency responsible for carrying out the Commonwealth's marine resource management, including control and issuance of approximately 78 different types of commercial fishing licenses based on gear type, number of gear, and species (Kirkley, 1997). The commercial fisheries industry in Virginia includes finfish and shellfish within Virginia marine and estuarine waters or the Territorial Sea (all inshore waters out to three miles offshore). No commercial fisheries in Virginia are crossed by the ACP.

III. Coastal Primary Sand Dunes

N/A. The proposed Project does not impact primary dunes as the ACP is not located in any of the eight localities listed in the *Coastal Primary Sand Dunes and Beaches Protection Act*.

IV. Barrier Island

N/A. The proposed Project is not located in or near Barrier Islands.

V. Significant Wildlife

The potential for the ACP to affect significant wildlife habitats important to migratory birds and federally listed threatened and endangered species has been evaluated as described below.

Migratory Birds

Important Bird Areas are sites identified by the National Audubon Society that provide essential habitat for one or more species of birds. These areas can support breeding, wintering,

or migrating birds; can be publicly or privately owned; and may or may not be protected (National Audubon Society, 2014a). The proposed ACP facilities cross five Important Bird Areas in Virginia, one of which, GDS Important Bird Area, is located in the coastal zone. The area is a significant stopover habitat for migrating passerines in the spring and fall. Important habitats within the GDS include forested wetlands, cypress-tupelo habitat, and Atlantic white-cedar forest. Measures have been taken so the ACP will not be located in the GDS-NWR and the route is collocated with existing infrastructure to the extent feasible.

A variety of migratory bird species could occur seasonally along the proposed pipeline route. The Project will be located in the Atlantic Flyway, which is a major migratory route for birds during both spring and fall. Various migratory bird species, including both songbirds and raptors, use the vegetation communities identified within the GDS and potentially along the proposed pipelines as part of their migratory route. Productive riparian, wetland, and coastal habitats are typically important for migratory birds in the Atlantic Flyway. Bird species that are predominantly associated with migratory patterns in the ACP Project area include wood thrush, canvasback, American black duck, mallard, ruby-throated hummingbird, white-eyed vireo, summer tanager, hooded warbler, broad-winged hawk, common tern, black-throated blue warbler, and cerulean warbler (National Audubon Society, 2014b; Ducks Unlimited, 2014).

To address potential impacts on migratory birds, Atlantic has taken appropriate steps to avoid and minimize the potential for the unintentional take of migratory birds during construction and operation of the proposed facilities. Further, implementation of the required construction and operational practices for FERC-regulated projects, as described in the Plan and Procedures, will reduce the potential for impacts on migratory birds. Mitigation required for wetland impacts under Section 404 of the Clean Water Act, particularly mitigation for the conversion of forested wetlands to other cover types, will provide habitat mitigation for birds that utilize wetland habitats.

It is possible that construction, operation, and maintenance of the ACP could result in impacts on migratory birds. Potential impacts on nesting migratory bird species include direct impacts on nesting birds; noise generated during construction which could disturb nesting birds, if present; habitat fragmentation; and loss of wooded habitat, including temporary removal of vegetation, which could cause nesting species to relocate to other suitable habitat.

Atlantic is coordinating with the FWS regarding impacts on migratory birds. A Migratory Bird Plan has been developed to identify avoidance, minimization, and mitigation measures for effects to migratory birds as a result of the Project. A revised *Migratory Bird Plan* that identifies Project related avoidance, minimization, and mitigation measures for effects to migratory birds, including bald and golden eagles, as a result of the Project was submitted to FERC and FWS on January 27, 2017.

Beyond the Migratory Bird Treaty Act, the Bald and Golden Eagle Protection Act provides additional protection to bald and golden eagles. Review of the Center for Conservation Biology Virginia Eagle Nest Locator indicated that there are nests and communal roosts in the vicinity of the proposed ACP route. During 2015 and 2016 bald eagle nest surveys, one bald eagle nest was identified on the proposed AP-3 mainline in the City of Chesapeake. Atlantic is coordinating with the FWS regarding recommended timing restrictions and the need for a federal

permit for non-purposeful take of eagles in accordance with National Bald Eagle Management Guidelines.

Federally Listed Species

A review of the county lists from the FWS Information, Planning, and Conservation System (IPaC) to identify federally listed species located within the counties crossed by the ACP. Table 3.2.1-2 provides a summary of the species that are known or believed to occur within the counties crossed by the proposed pipeline route in Virginia.

TABLE -3.2.1-2

Atlantic Coast Pipeline
Federally Listed and Proposed Species in Counties Crossed by the Proposed Project in Virginia

Species Common Name	Scientific Name	Federal Status [a]	County Occurrence [b]
Birds			
Red cockaded woodpecker	*Picoides borealis*	E	Southampton, Suffolk
Crustaceans			
Madison Cave isopod	*Antrolana lira*	T	Augusta
Chowanoke crayfish	*Orconectes virginiensis*	UR	Chowan River drainage
Fish			
Roanoke logperch	*Percina rex*	E	Brunswick, Dinwiddie, Greensville, Nottoway, and Southampton
Mammals			
Gray bat	*Myotis grisescens*	E	Bath
Indiana bat	*Myotis sodalis*	E	Bath, Highland, Augusta, and Cumberland
Northern long-eared bat	*Myotis septentrionalis*	T	All Counties Crossed [c]
Virginia big-eared bat	*Corynorhinus townsendii virginianus*	E	Bath and Highland
Mussels			
Dwarf wedgemussel	*Alasmidonta heterodon*	E	Brunswick, Dinwiddie, and Nottoway
James spinymussel	*Pleurobema collina*	E	Bath, Highland, Buckingham, Cumberland, and Nelson
Atlantic pigtoe	*Fusconaia masoni*	UR	James River Basin
Green floater	*Lasmigona subviridis*	UR	Greenbrier watershed
Yellow lance	*Elliptio lanceolata*	UR	Nottoway River, Meherrin River, Sturgeon Creek
Insects			
Rusty Patched Bumble Bee	*Bombus affinis*	E	All Counties Crossed
Plants			
American chaffseed	*Schwalba americana*	E	Greensville
Eastern prairie fringed orchid	*Platanthera leucophaea*	T	Augusta
Michaux's sumac	*Rhus michauxii*	E	Brunswick, Dinwiddie, and Nottoway
Northeastern bulrush	*Scirpus ancistrochaetus*	E	Augusta, Bath, and Highland
Shale barren rock cress	*Boechera serotina*	E	Augusta, Bath, and Highland
Small whorled pogonia	*Isotria medeoloides*	T	Augusta and Highland
Swamp pink	*Helonias bullata*	T	Augusta and Nelson
Virginia sneezeweed	*Helenium virginicum*	T	Augusta
Marine Mammals			
Common bottlenose dolphin	*Tursiops truncatus*	MMPA	Chesapeake and Suffolk
Harbor seal	*Phoca vitulina*	MMPA	Chesapeake and Suffolk

[an] Abbreviations for species federal status are as follows:
T = Threatened, E = Endangered, UR = Under Review for Federal Listing, MMPA = Marine Mammal Protection Act

[b] Species occurrence based on county lists obtained through the FWS Information, Planning, and Conservation System (IPaC) queried in July 2014, April 2016.

[c] Occurrence of the Northern long-eared bat in Virginia has not been defined at the county level.

Below is an assessment of the potential for each of the species to occur in or near the coastal zone:

- Red-cockaded Woodpecker (RCW): According to the IPaC System, the RCW has the potential to occur in mature pine forests in the County of Southampton and the City of Suffolk, Virginia. During a June 3, 2014 conference call between Atlantic and the Virginia Ecological Field Services Office, FWS staff indicated that the red-cockaded woodpecker is only known to occur in the Piney Grove Preserve in Sussex County, Virginia, which is located approximately 23 miles to the north of the proposed AP-3 lateral. Virginia NHI data listed one occurrence of the red-cockaded woodpecker within two miles of the mainline and an access road in the City of Suffolk, Virginia (Virginia Department of Conservation and Recreation, 2014a).

- Atlantic's biological survey crews documented potential foraging habitat for RCW along the proposed AP-2 and AP-3 routes during environmental field surveys completed in the summer and fall of 2014 and for a reroute in spring of 2016. Based on the results of these habitat surveys, agency communications, and review of IPaC System and National Heritage Inventory data, Atlantic prepared a study plan for aerial surveys for nesting cavity trees within 0.5 mile of foraging habitat.

- Aerial surveys were conducted in March 2015 and in March 2016 prior to leaf-out on hardwood trees present in the canopy or subcanopy of survey stands. Global positioning system data were collected for RCW cavity trees or suspect cavity starts identified during the aerial surveys. The original aerial surveys did not identify any active RCW cavity trees within the study area or within 0.5 mile of the study area in Virginia. No sign of RCW were found in or near the coastal zone.

- Roanoke logperch: According to the IPaC county list, the Roanoke logperch has the potential to occur in waterbodies within six counties crossed by the ACP, including Brunswick, Dinwiddie, Greensville, Nottoway, Prince Edward, and Southampton. There is no listing of occurrence in the Cities of Suffolk and Chesapeake, therefore there is no anticipated impact within the coastal zone.

- Northern long-eared bat: The northern long-eared bat was listed as threatened under the Endangered Species Act, effective May 4, 2015. The FWS has issued a Final Rule under Section 4(d) of the Endangered Species Act, effective February 16, 2016, providing for certain prohibitions under Section 9 regarding take, including incidental take that occurs due to tree removal (a) within a 0.25 mile (0.4 kilometer) radius of known hibernacula or (b) that cuts or destroyed known occupied maternity roost trees, or any other trees within a 150 foot (45-meter) radius from known maternity trees during the pup season (June 1 through July 31) in areas affected by White Nose Syndrome.

Atlantic prepared 2016 survey plans describing survey methods in accordance with Northern long-eared bat survey protocol. The plans were submitted to Virginia ESFOs on May 2, 2016. Surveys were completed between May 15 and August 15, 2016. Final reports were submitted to the Virginia Ecological Field Services Office on October 13, 2016. Northern long-eared bats were detected during acoustic surveys in the City of Suffolk however no bats were captured in follow up mist net surveys in the coastal zone. Atlantic will adhere to the no tree clearing during pup season restriction if active roost trees are identified within 150 feet of the project workspace in the coastal zone.

- Freshwater mussels: Two species of freshwater mussel, the dwarf wedgemussel and James spinymussel, are known or have the potential to occur in waterbodies crossed by the ACP in Virginia. Based on prior discussion of freshwater mussels during Atlantic's June 3, 2014 meeting with the Virginia Ecological Field Services Office, staff indicated that the dwarf wedgemussel is only known to occur in the Nottoway River drainage, and the James spinymussel is only known to occur in the James and Dan River Basins. Based on this information there is no occurrence in the coastal zone; therefore no impact is anticipated.

Additional research was conducted using the List of Endangered and Threatened Marine Species under NOAA Fisheries jurisdiction, other information available on NOAA Fisheries website, and Federal Register documents to identify federally listed species under NOAA Fisheries jurisdiction that have the potential to occur in waterbodies crossed by the ACP. Federally listed species under NOAA Fisheries jurisdiction that are known or believed to occur within waterbodies crossed by the proposed pipeline route in Virginia include the Atlantic sturgeon from any one of the five Distinct Population Segments and shortnose sturgeon. Several federally listed sea turtles species also have the potential to occur in estuarine waters crossed by the ACP, as described below.

- Atlantic sturgeon: The Status Review of the Atlantic sturgeon issued by NOAA Fisheries in 2007 indicates that this species spawns in the James River system and evidence supports that some of the Chesapeake Bay tributaries may support spawning. In the City of Chesapeake, the ACP crosses the East Ditch, Deep Creek Canal, and Southern Branch Elizabeth River Intracoastal Waterway north of the confluence of Deep Creek.

- Shortnose sturgeon: The IPaC system does not yet identify county level occurrences for this species. Based on information presented in a Report to National Marine Fisheries Service, Northeast Regional Office by the Shortnose Sturgeon Status Review Team in 2010 (Biological Assessment of Shortnose Sturgeon) the Roanoke and Chowan River basins are known to support the shortnose sturgeon. There are no listings of occurrences in the coastal zone.

- Sea turtles: Based on review of information on NOAA Fisheries Greater Atlantic Region (GAR) website, Five species of sea turtle are listed as threatened or endangered by NOAA Fisheries in the GAR including the Green, Loggerhead,

Hawksbill, Leatherback, and Kemp's Ridley. With exception of the Hawksbill, which is considered a rare visitor in the GAR, juvenile and adult sea turtles are generally present migrating and foraging in marine and estuarine waters of the GAR from May through November. In Virginia, juveniles and adults of these species of sea turtle may arrive in Virginia as early as April/May in Virginia. In the City of Chesapeake, the ACP crosses estuarine waters including the East Ditch, Deep Creek Canal, and Southern Branch Elizabeth River Intracoastal Waterway north of the confluence of Deep Creek.

Based on information provided by the Northeast Region of the NOAA Fisheries, none of the five species of sea turtle are expected to occur in the ACP Project area, and sea turtles are not expected to experience direct or indirect effects from the proposed ACP (NOAA Fisheries, 2014). Based on information provided by the Northeast Region of NOAA Fisheries, shortnose sturgeon is unlikely to occur in waterbodies crossed by the proposed ACP pipeline in Virginia (NOAA, 2014). No impacts to sea turtles or the shortnose sturgeon are expected in the coastal zone in Virginia.

Based on consultation with the Northeast Region of NOAA Fisheries, the City of Chesapeake, Virginia, is the only location in the ACP Project area where Atlantic sturgeon may be present. The proposed AP-3 lateral crosses the Southern Branch Elizabeth River, which may contain Atlantic sturgeon from any one of the five distinct population segments (NOAA, 2014). Atlantic plans on crossing the South Branch Elizabeth River using HDD; therefore no in-stream impacts and no impacts to the Atlantic sturgeon are expected within the coastal zone in Virginia. Water withdrawals from the South Branch Elizabeth River are not proposed. Additionally, Atlantic will follow state and federal water quality requirements and implement best management practices to reduce and minimize potential erosion and sedimentation of waterbodies associated with construction activities that could impact federally listed aquatic species.

VI. Habitat Areas

On June 3, 2016 NOAA proposed critical habitat for the Gulf of Maine, New York Bight, and Chesapeake Bay Distinct Population Segments. No proposed critical habitat for the Atlantic sturgeon is crossed by the Project in the coastal zone in Virginia. There are no designated critical habitats for federally listed species under NOAA Fisheries crossed by the ACP AP-3 lateral in Virginia.

VII. Public Recreation Areas

The proposed ACP pipeline will cross or pass within 0.25 mile of publicly owned and managed lands within the AP-3 coastal zone as listed in Table 3.2.1-3.

Publicly Owned and Managed Lands

In addition to the recreation and special interest areas discussed below, recreational fishing occurs in many of the streams crossed by proposed ACP pipeline route. The amount of recreational fishing varies according to season, accessibility, and regulations.

TABLE 3.2.1-3

Special Management Areas and Special Interest Areas Crossed by or within 0.25 Mile of the Atlantic Coast Pipeline Coastal Zone

Ownership	Begin Milepost	End Milepost	Crossing Length (miles) [a]	City	State	Name
ATLANTIC COAST PIPELINE						
Federal						
U.S. Fish and Wildlife Service	71.0	73.5	N/A	City of Chesapeake	VA	Great Dismal Swamp
U.S. Fish and Wildlife Service	74.2	76.3	N/A	City of Chesapeake	VA	Great Dismal Swamp
Local						
Private	60.1	60.1	<0.1	City of Suffolk	VA	Suffolk Loop Trail
Private	71.2	71.2	<0.1	City of Suffolk	VA	Suffolk Loop Trail Access

[a] When "N/A (not applicable)" is provided as a crossing length it is an indication that the land is not crossed by the pipeline but is located within 0.25 mile of the construction workspace.

It is possible that during pipeline construction access to certain fishing locations may be temporarily unavailable to anglers for safety purposes. This potential impact will be dependent upon site-specific conditions at the time of construction. Consequently, while some anglers may experience a temporary inconvenience in accessing favorite fishing spots during construction, such inconvenience will be of short duration, and other alternative fishing spots and stream access routes will be available. Atlantic will work with the land managing agencies to develop methods to inform the angling community about safety-driven temporary closures of stream reaches or fishing access routes (e.g., signage, newsletters, advertisements, and/or website notices.

During operations, the presence of a natural gas pipeline right-of-way will not have a significant impact on recreational fishing opportunities. At some locations, a cleared pipeline right-of-way may increase the accessibility for anglers to particular stream segments. In cases where this is not desirable, however Atlantic will work with land managing agencies or landowners to develop site-specific measures to prohibit access.

VIII. Sand and Gravel Resources

A wide variety of exploitable and potentially exploitable non-fuel mineral resources occur in Virginia. The most predominant exploitable resource is crushed stone. Additional mineral resources include cement, sand and gravel, and lime (USGS, 2013).

Atlantic reviewed USGS topographic maps, recent (2011- 2015) aerial photography, and available USGS and Commonwealth databases to identify active mining operations in the vicinity of the Project (Virginia Department of Mines, Minerals, and Energy, 2015a).[4]

[4] Atlantic initially reviewed aerial photography from an ArcGIS data layer (World Imagery) available from ESRI. This data layer aggregates satellite aerial photography from multiple sources. The date range of the photography in the project area ranges from 2008 to 2015. This analysis will be updated through review of 2015 aerial photography recorded for the Projects.

The proposed ACP pipeline will not cross or pass within 0.25 mile of active mining operations within the coastal zone. Since no active mining operations are crossed by the proposed ACP pipeline the proposed project complies with this section.

IX. Underwater Historic Sites.

The Phase I archaeological survey, which is ongoing, began in June 2014. The survey examined (or will examine) a 300-foot-wide corridor centered on the centerlines of the proposed pipelines as well as aboveground and ancillary facilities, including compressor stations, M&R stations, valves, pig launcher/receiver sites, access roads, contractor yards, and other work areas.

A historic structures survey identified three historic districts within the Area of Potential Effects (APE) for the ACP. Two of these districts, the Dismal Swamp Canal Historic District and Sunray Agricultural Rural Historic District, both in the City of Chesapeake, Virginia, are listed on the National Register of Historic Places (NRHP). Crestwood Historic District in the City of Chesapeake, Virginia, is not eligible for listing on the NRHP.

N/A. The proposed Project complies with this section, since the historic districts identified in the search are not known to contain underwater historic sites.

The proposed Project complies with this the *Coastal Natural Resource Areas* section of the advisory policies.

3.2.2 Coastal Natural Hazard Areas

This policy covers areas vulnerable to continuing and severe erosion and areas susceptible to potential damage from wind, tidal, and storm related events including flooding. New buildings and other structures should be designed and sited to minimize the potential for property damage due to storms or shoreline erosion. The areas of concern are as follows:

I. Highly Erodible Areas

N/A. The proposed ACP is not located in or near Highly Erodible Areas, including beaches and dunes.

II. Coastal High Hazard Areas, including floodplains.

The proposed ACP traverses floodplain areas of the Cities of Suffolk and Chesapeake; however the only aboveground structure within the floodplain will be at the Project's termination at Elizabeth River M&R Station, which is designed to minimize the potential for property damage due to storms and flooding.

The proposed Project complies with this the *Coastal Natural Hazard Areas* section of the advisory policies.

3.2.3 Waterfront Development Areas

These areas are vital to the Commonwealth because of the limited number of areas suitable for waterfront activities. The areas of concern are as follows:

I. Commercial Ports
II. Commercial Fishing Piers
III. Community Waterfronts

N/A. The proposed Project is not located in or near commercial ports, fishing piers, or waterfronts.

Although the management of such areas is the responsibility of local government and some regional authorities, designation of these areas as Waterfront Development Areas of Particular Concern (APC) under the VCP is encouraged. Designation will allow the use of federal Coastal Zone Management Act funds to be used to assist in planning for such areas and in the implementation of such plans. The VCP recognizes two broad classes of priority uses for waterfront development APC:

I. water access-dependent activities;

II. activities significantly enhanced by the waterfront location and complementary to other existing and/or planned activities in a given waterfront area.

N/A. The proposed Project is not located in Waterfront Development Areas of Particular Concern, nor is the proposed Project classified as a priority use for Waterfront Development APC.

The proposed Project complies with this the *Waterfront Development Areas* section of the advisory policies.

3.2.4 Virginia Public Beaches

Approximately 25 miles of public beaches are located in the cities, counties, and towns of Virginia exclusive of public beaches on state and federal land. These public shoreline areas will be maintained to allow public access to recreational resources.

N/A. The proposed Project is not located in or near public beaches on state or federal lands within the coastal zone.

The proposed Project complies with this the *Virginia Public Beaches* section of the advisory policies.

3.2.5 Virginia Outdoors Plan

Planning for coastal access is provided by the Department of Conservation and Recreation in cooperation with other state and local government agencies. The Virginia Outdoors Plan (VOP), which is published by the Department, identifies recreational facilities in the Commonwealth that provide recreational access. The VOP also serves to identify future needs of the Commonwealth in relation to the provision of recreational opportunities and shoreline access. Prior to initiating any project, consideration should be given to the proximity of the project site to recreational resources identified in the VOP.

The 2013 VOP Mapper online tool was used to assist in identifying potential impacts to recreational facilities in the coastal zone. There were no boat ramps or scenic byways identified along the ACP route in the coastal zone.

Great Dismal Swamp – National Wildlife Refuge

Construction of the proposed AP-3 lateral could affect recreational users of the GDS-NWR as construction passes north of the area. Short-term impacts may include reduced access across the construction right-of-way; increased noise, dust, and heavy equipment emissions; and fewer opportunities to view wildlife. These impacts will be temporary, and limited primarily to the construction phase of the ACP. No significant impacts during operation of the proposed facilities are anticipated.

Blackwater River, Nansemond River, and Southern Branch Elizabeth River

The VOP Mapper identifies the Blackwater River as a Designated Scenic River, and the Nansemond and Southern Branch Elizabeth Rivers as existing Blueways. Atlantic will utilize HDD construction methods for installation of the ACP under all three rivers to minimize impacts to recreational activities.

The amount of recreational fishing done in the rivers and their tributaries varies according to season, accessibility, and regulations. It is possible that during pipeline construction access to certain fishing locations may be temporarily unavailable to anglers for safety purposes. This potential impact will be dependent upon site-specific conditions at the time of construction. Consequently, while some anglers may experience a temporary inconvenience in accessing favorite fishing spots during construction, such inconvenience will be of short duration, and other alternative fishing spots and stream access routes will be available. Atlantic will work with the land managing agencies to develop methods to inform the angling community about safety-driven temporary closures of stream reaches or fishing access routes (e.g., signage, newsletters, advertisements, and/or website notices.

Lake Prince and Western Branch Reservoir

The VOP Mapper identifies Lake Prince and Western Branch Reservoir as Public Fishing Lakes. It is possible that during pipeline construction access to certain fishing locations may be temporarily unavailable to anglers for safety purposes. This potential impact will be dependent upon site-specific conditions at the time of construction. To minimize impacts, the HDD method of construction is proposed at these two locations.

Deep Creek Canal (Historic Resource)

The Dismal Swamp Canal Historic District is a man-made canal between Deep Creek Borough in Chesapeake, Virginia, and South Mills, North Carolina. The canal was excavated between 1793 and 1805 and expanded over the course of the next century. The Dismal Swamp Canal Historic District is listed on the NRHP. The AP-3 lateral will cross the Deep Creek Canal using the Dam and Pump construction method described in Section 2.8.1.

Virginia Outdoors Foundation

Atlantic has been closely coordinating with Virginia Outdoors Foundation (VOF) to work to avoid conservation easements held by VOF. Where easements are crossed, Atlantic is working with the VOF and has submitted requests to cross and mitigation for crossings of VOF easements. However, there will be no VOF easements crossed by the ACP within the coastal zone.

The proposed Project complies with this the *Virginia Outdoors Plan* section of the advisory policies.

3.2.6 Parks, Natural Areas, and Wildlife Management Areas

Parks, Wildlife Management Areas, and Natural Areas are provided for the recreational pleasure of the citizens of the Commonwealth and the nation by local, state, and federal agencies. The recreational values of these areas should be protected and maintained.

The proposed AP-3 lateral route passes north of the GDS-NWR in Virginia. Tourist uses of the refuge are concentrated in areas further to the south in and around Lake Drummond, which is located approximately 8 miles south of the proposed ACP. As a result, construction along the route is unlikely to cause significant impacts on tourist uses of the Refuge. Atlantic has consulted, and will consult as necessary, with the FWS to identify and assess potential impacts on tourist resources for passing near the GDS-NWR.

The proposed ACP pipeline facilities will cross recreational trails in Virginia including the Suffolk Loop at MP 60.1 and 71.3. Construction activities at open-cut trail crossings could temporarily disrupt uses of the trails, but the impact will be short-term and limited to the period of construction. Following installation of the pipeline, the trails will be restored to preconstruction condition or better. No direct impacts on trails crossed by HDD are anticipated, though construction noise could temporarily affect trail users during drilling. For each trail crossing, Atlantic will consult with the appropriate land managing agency or trail steward to identify and assess potential impacts on trails and appropriate mitigation measures, such as detours, temporary closures, and public notifications.

Because of the short construction period, the Project is not expected to affect tourism industry revenues at Commonwealth or local levels. The Project is not expected to affect visits to the GDS-NWR, which contains multiple and widely dispersed recreational and tourist opportunities. No impacts on tourist revenues are expected from operation of the Project.

The proposed Project complies with this the *Parks, Natural Areas and Wildlife Management Areas* section of the advisory policies.

3.2.7 Waterfront Recreational Land Acquisition

It is the policy of the Commonwealth to protect areas, properties, lands, or any estate or interest therein, of scenic beauty, recreational utility, historical interest, or unusual features which may be acquired, preserved, and maintained for the citizens of the Commonwealth.

City of Suffolk

The City of Suffolk is the tenth most populous City in Virginia. While still mostly agricultural, the City is growing quickly, with two major centers of development: the historic downtown area, and a more recently developed suburban northern core area, which expands outward from Interstate 664 (City of Suffolk, 2015a). By 2031, Suffolk expects the addition of approximately 25,000 residents, 10,400 housing units, and 13,312,000 square feet of non-residential space (City of Suffolk, 2015b).

Suffolk's comprehensive plan "Suffolk 2035: A Vision for the Future" was adopted in April 2015. In general, the plan seeks to manage growth while continuing to maintain a sense of place by preserving the distinct characteristics of rural, urban, and suburban areas. In areas surrounding Suffolk's urban/suburban core, the most intense development is moving to the north and west. Suffolk has two defined growth areas, the Northern and Central Growth Areas, with varying land use districts and developable densities. The growth areas focus development in areas of the City where infrastructure already exists (or is proposed) and relieves sprawl pressures while preserving sensitive environmental features and the agricultural history of Suffolk (City of Suffolk, 2015b).

While the majority of the proposed AP-3 lateral route traverses rural areas, the route lies within Suffolk's Central Growth Area for about 2.3 miles, of which 0.5 mile abuts an existing gas transmission right-of-way. While not currently developed the City expects this area will fill in over time.

Atlantic's originally proposed route traversed approximately 10 miles within the City's Central Growth Area, south of the City. Subsequently, Atlantic proposed a route to the north of the City that reduced its length within the Central Growth Area to 2.3 miles. The City of Suffolk has commented that "construction of the ACP through the City designated Central Growth Area may impact the growth potential of certain use districts and could possibly impact the City's ability to accommodate planned capacity for forecasted growth within the City", and asked Atlantic to locate the AP-3 lateral outside the Central Growth Area (City of Suffolk, 2015b). Atlantic has reduced the impact on the Central Growth Area from 10 miles to 2.3 miles by incorporating the route north of the urban core. In a February 2, 2016 meeting, City officials and staff acknowledged the reasons supporting Atlantic's selection of the proposed route across the northern edge of the Central Growth Area.

Suffolk's Planning Department initially identified two potential developments within the Central Growth Area that could conflict with the proposed AP-3 lateral, but one of these was

found to be approximately 0.4 mile from the proposed route, and the other (Bridlewood Estates) is a small cluster of existing homes rather than a planned development; no plans to expand Bridlewood Estates have been filed with the City, and City representatives at a February 2, 2016 meeting expressed the opinion that an expansion of Bridlewood Estates was unlikely.

A number of municipal infrastructure projects are planned between 2016 and 2026. Projects may include widening Highway 58, and several sewer and water projects sponsored by the City and the Hampton Roads Sanitation District, which may require coordination with the AP- 3 lateral design and/or construction. The Commonwealth of Virginia may also consider an alternative design for Highway 460, which if proposed, may require coordination with the ACP.

Suffolk's unified development ordinance requires conditional use permits for utility facilities and installations, except those exempt under local, Commonwealth, or Federal law (City of Suffolk Zoning Ordinance, 2014).

City of Chesapeake

The City of Chesapeake is the third most populous City in Virginia and the second largest City by area. A broad range of existing land uses are found throughout the City, ranging from protected open space and agricultural areas to residential, commercial, and industrial developments (City of Chesapeake, 2014).

Chesapeake's *Moving Forward – Chesapeake 2035 Comprehensive Plan/Technical Document*, which includes its *2035 Land Use Plan* and *2035 Transportation Plan*, was adopted in 2014 (City of Chesapeake, 2014). The Land Use Plan divides the City into nine planning areas. The proposed AP-3 lateral lies within the Deep Creek Planning Area, except for the last 0.2 mile east of the Elizabeth River crossing, which lies within the Rivercrest Planning Area.

Land uses along the current route are principally urban, with smaller areas devoted to conservation and agriculture, and more industrial areas occurring along the Elizabeth River. The proposed AP-3 lateral route traverses the neighborhoods of Sunray and Oak Manor, and lies near or adjacent to Colony Manor, Forest Cove, Marsh Pointe Estates, and the McMillan Trailer Park. About 70 percent of the route through Chesapeake parallels and/or abuts existing pipeline or electric transmission rights-of-way, including the most urbanized sections of the route. As in the City of Suffolk, the GDS-NWR is a growth limiting factor in areas along and near the proposed pipeline route south of Interstates 664 and 264.

South of Sunray, the proposed AP-3 lateral crosses and parallels three linear channels that have been designated by the City as Chesapeake Bay Preservation Area overlay zoning districts. The Chesapeake Bay Preservation Area program is aimed at addressing water quality issues associated with surrounding land uses (City of Chesapeake, 2014). The program establishes performance standards, such as maintenance of vegetative buffers, for various types of development and ground disturbing activities. In this area, the route crosses approximately 2.1 miles of the Chesapeake Wetland Mitigation Bank south of the community of Sunray.

While the pipeline route lies in proximity to over twenty residences, no residential developments are planned along or within 0.25 mile of the route. Three proposed

commercial/industrial developments lie within 0.25 mile of the AP-3 Lateral, but these developments are not expected to conflict with the ACP.

The AP-3 Lateral crosses or lies near several planned municipal infrastructure projects within the City of Chesapeake. The AP-3 lateral route is adjacent to the planned Red Top Raw Water Transmission Main project, which runs between the City of Suffolk and the Lake Gaston Water Treatment Plant in the City of Chesapeake. The route also crosses a future connection for an outfall between Colony Manor and a future regional stormwater facility.

The proposed AP-3 lateral route also traverses numerous existing infrastructures within the City of Chesapeake. As noted above, south of the Sunray area, the proposed AP-3 lateral route crosses several large public drainage channels. The route additionally crosses numerous roads, canals, drainage ditches, storm drain lines, stormwater facilities, wastewater interceptor lines, sewer mains, and water lines, and is located near several sanitary sewer pump stations. Atlantic is working with the City of Chesapeake Department of Public Utilities and the Hampton Roads Sanitation District to avoid or minimize conflicts between the existing and proposed infrastructure.

The proposed AP-3 lateral route lies near the City of Chesapeake's In-Town Lakes, a drinking water supply. Atlantic will coordinate with City of Chesapeake Department of Public Utilities to identify measures to prevent water from entering the In-Town Lakes property via the AP-3 trench.

In accordance with Section 5(d) of the Wild and Scenic Rivers Act, the National Park Service has compiled and maintains a Nationwide Rivers Inventory, which is a register of river segments that potentially qualify as National Wild, Scenic, or Recreational River areas. No listed National Wild, Scenic, or Recreational Rivers are crossed by the proposed ACP facilities.

The proposed Project complies with this the *Waterfront Recreational Land Acquisition* section of the advisory policies.

3.2.8 Waterfront Recreational Facilities

This policy applies to the provision of boat ramps, public landings, and bridges which provide water access to the citizens of the Commonwealth. These facilities shall be designed, constructed, and maintained to provide points of water access when and where practicable.

N/A. The proposed Project will not create new, or impact existing boat ramps, public landings, and/or bridges within the coastal zone.

The proposed Project complies with this the *Waterfront Recreation Facilities* section of the advisory policies.

3.2.9 Waterfront Historic Properties

The Commonwealth has a long history of settlement and development, and much of that history has involved both shorelines and near-shore areas. The protection and preservation of historic shorefront properties is primarily the responsibility of the Department of Historic

Resources. Buildings, structures, and sites of historical, architectural, and/or archaeological interest are significant resources for the citizens of the Commonwealth. It is the policy of the Commonwealth and the VCP to enhance the protection of buildings, structures, and sites of historical, architectural, and archaeological significance from damage or destruction when practicable.

The Virginia Cultural Resource Information System (V-CRIS) was consulted to determine the number and nature of previously recorded archaeological sites and historic properties that occur within the project vicinity. This search identified 193 previously recorded archaeological sites and 411 previously recorded aboveground historic resources (seven districts, six battlefields, and 398 individual sites) along or near the proposed ACP facilities in Virginia. Archaeological surveys are ongoing as of winter of 2017. Atlantic anticipates filing addendum survey reports for ongoing surveys in the first quarter of 2017.

A total of 26 archaeological sites have been discovered or revisited along the Project corridor segment that passes through the cities of Suffolk and Chesapeake. Twenty-one of those resources are recommended ineligible for the NRHP. The NRHP status of the four sites remains unknown. They will be avoided or undergo Phase II testing to determine their NRHP eligibility status. The two remaining sites are recommended eligible for the NRHP. Current plans are to avoid both sites by using the HDD method.

Two historic districts are located within the City of Chesapeake, the Dismal Swamp Canal Historic District and Sunray Agricultural Rural Historic District. Both are listed on the NRHP. A third historic district, Crestwood Historic District, is also in the City of Chesapeake, but it has been recommended ineligible for listing on the NRHP.

Dismal Swamp Canal Historic District

The Dismal Swamp Canal Historic District is a man-made canal that extends from Deep Creek Borough in Chesapeake, Virginia, to South Mills, North Carolina. The canal was excavated between 1793 and 1805 and expanded over the course of the next century. The district is listed on the NRHP. The AP-3 lateral will cross the Deep Creek Canal using the Dam and Pump construction method described in Section 2.5.1.

Sunray Agricultural Rural Historic District

The Sunray Agricultural Rural Historic District is a planned community characterized by large lots arranged around a road network with a series of drainage ditches. It is listed on the NRHP and includes 228 structures that were built between 1908 and 1956. Atlantic recently adopted a route alternative that avoids the district entirely, and it is no longer in the APE.

Crestwood Historic District

The Crestwood Historic District was identified during a reconnaissance survey in 1997; it occurs south of the current project corridor and is not within the APE. A large portion of the neighborhood had been demolished by 2004, and the Virginia Department of Historic Resources has determined that the Crestwood Historic District is ineligible for listing on the NRHP.

ACP will avoid the Sunray Agricultural Rural Historic District and the Crestwood Historic District. The Deep Creek Canal will be affected during construction, but it is our opinion that the effect will be temporary, and mitigated by reconstructing the canal at the pipeline crossing.

The proposed Project complies with this the *Waterfront Historic Properties* section of the advisory policies.

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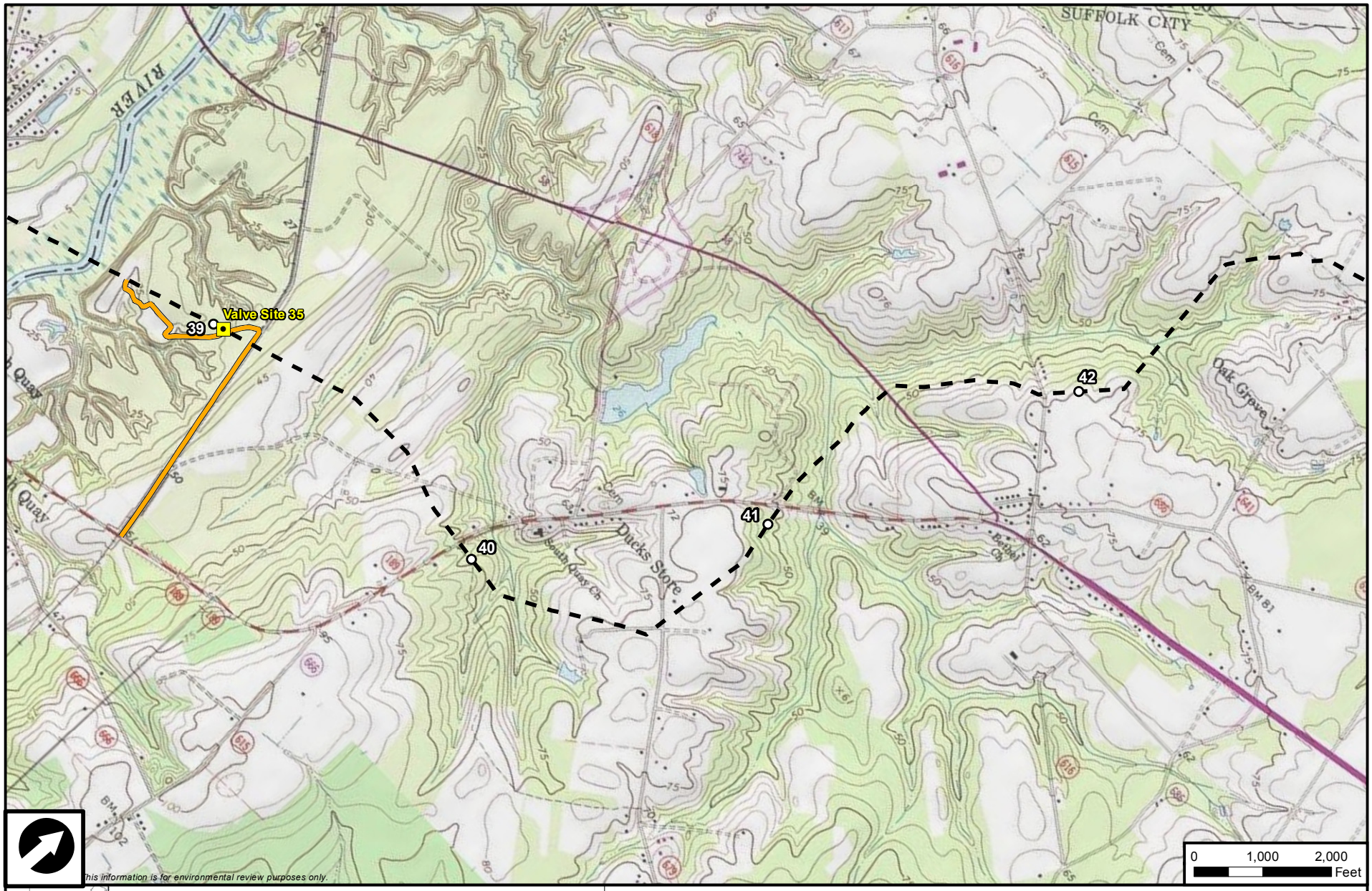
APPENDIX 1
Topographic Route Maps



Atlantic Coast Pipeline

- Atlantic Coast Pipeline
- Access Road
- Milepost
- Aboveground Facility

Atlantic Coast Pipeline

Appendix 1

Topographic Route Maps
City of Suffolk, Virginia

ERM

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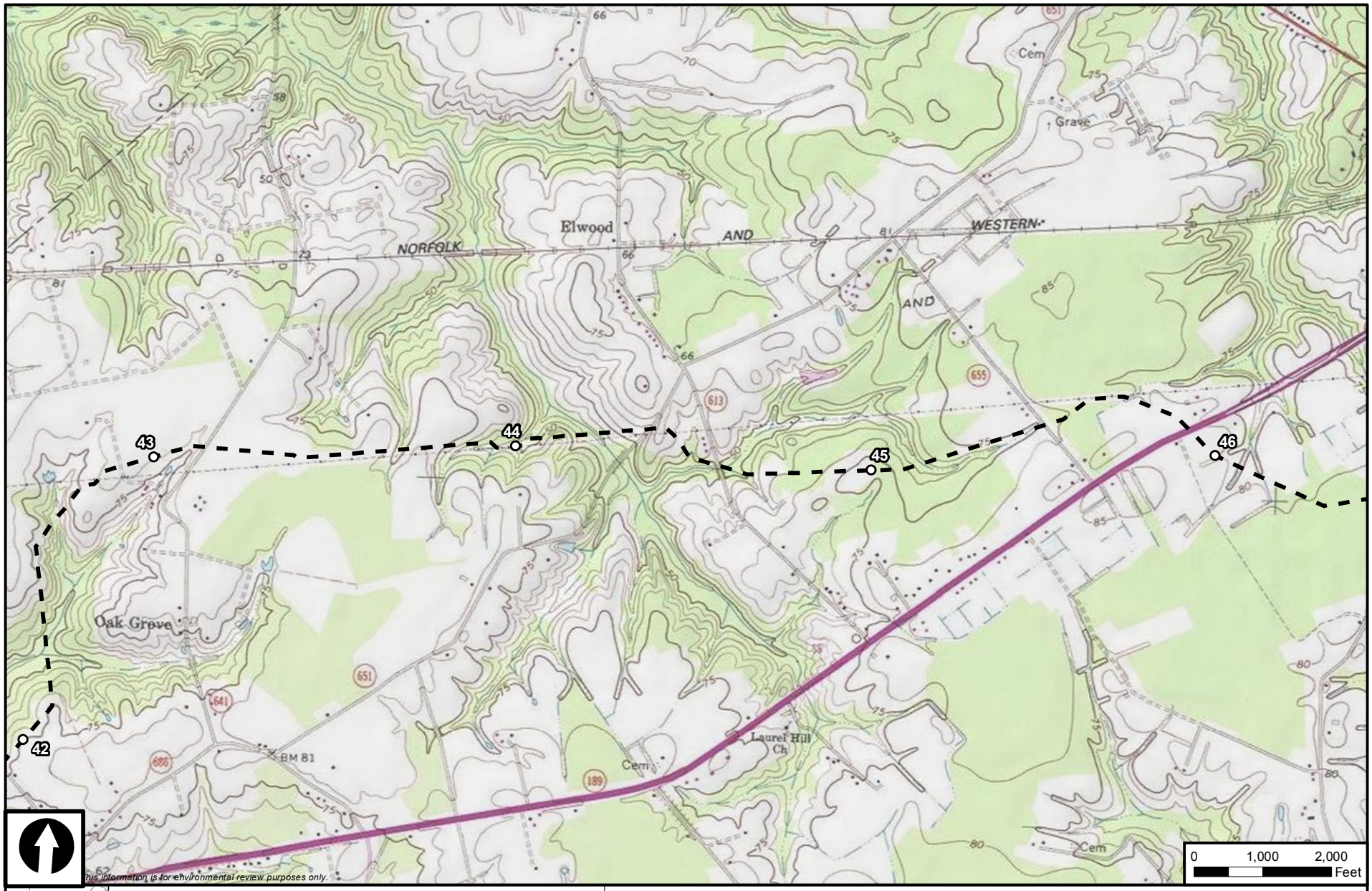

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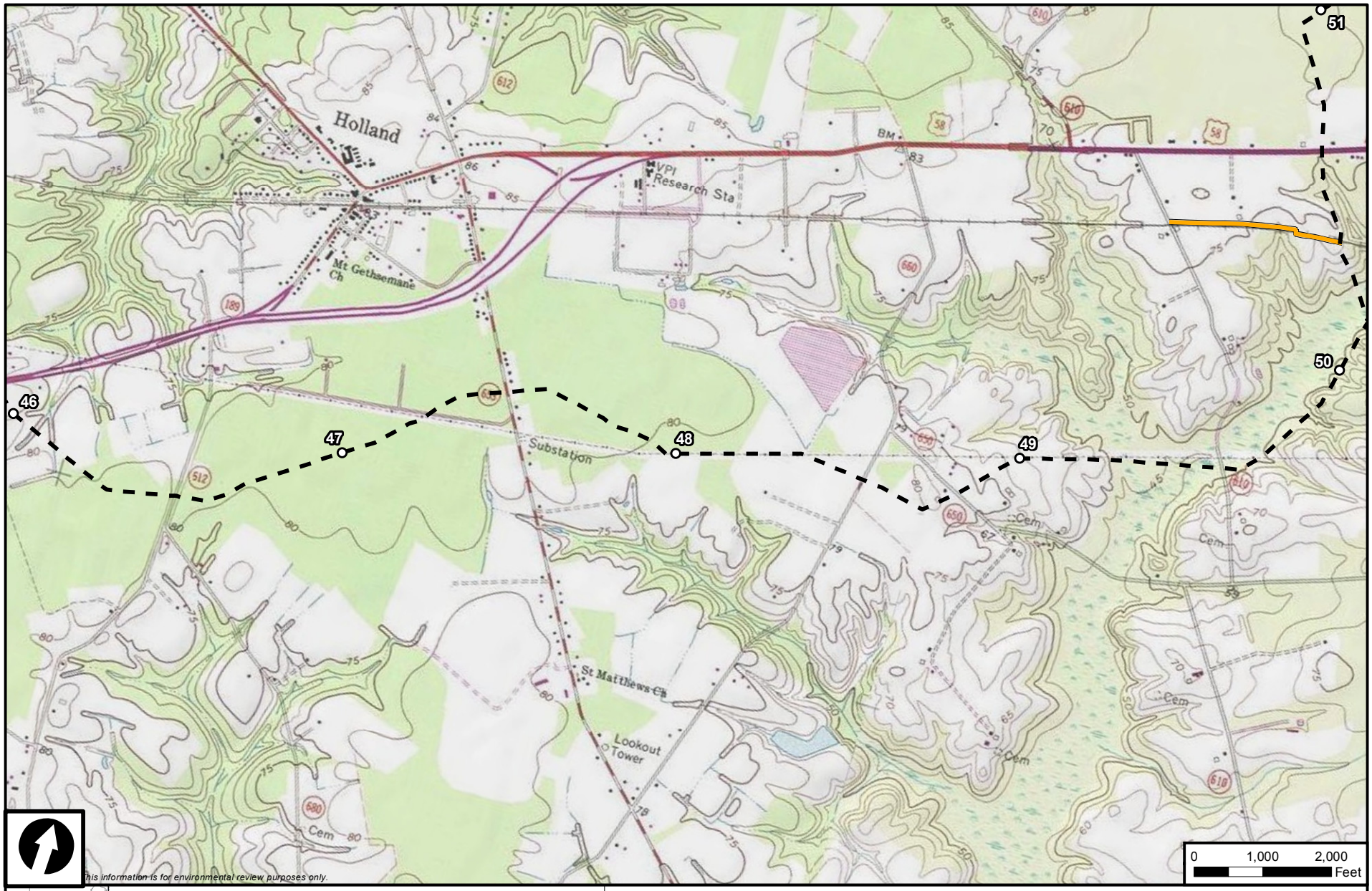

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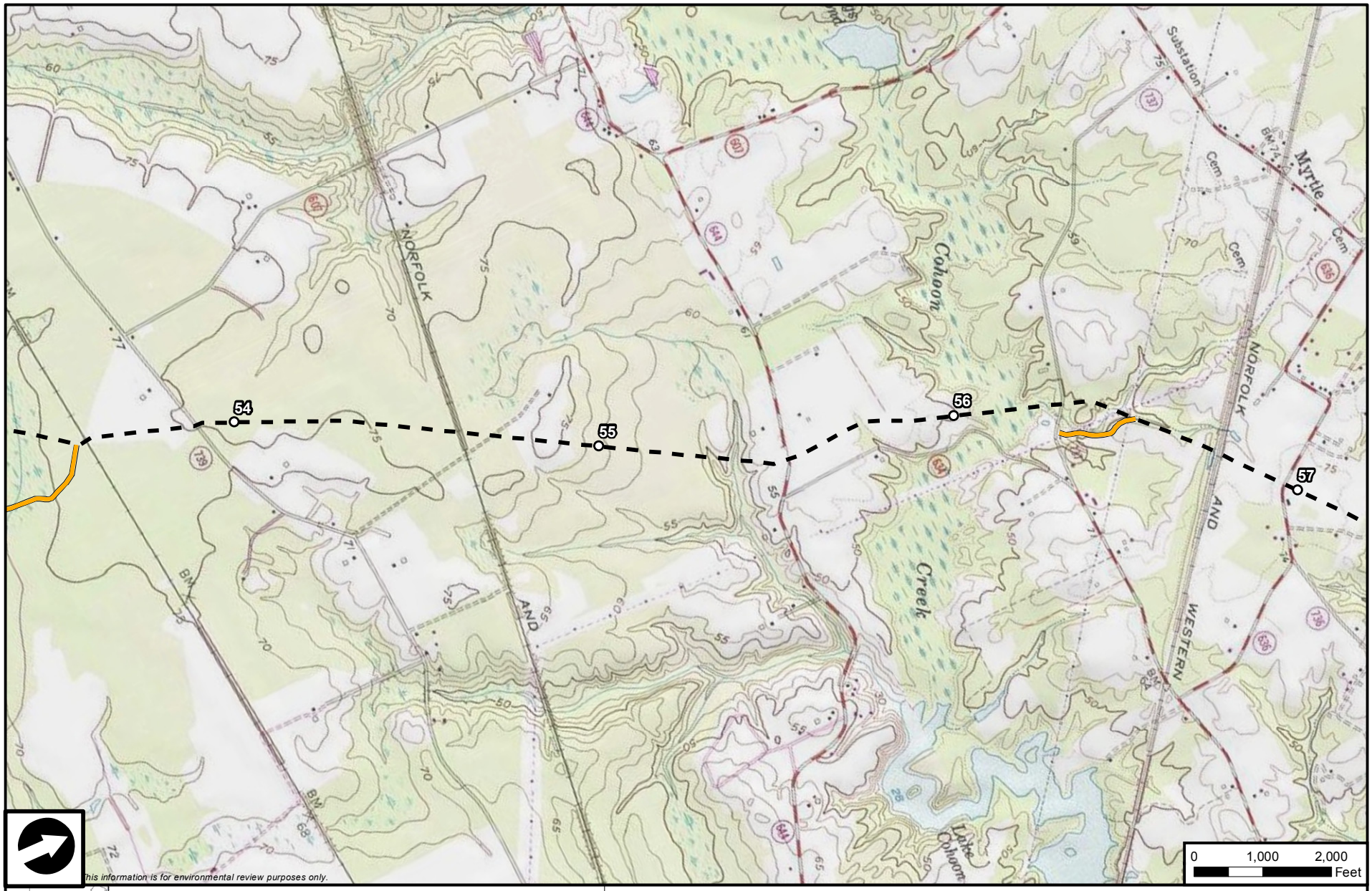

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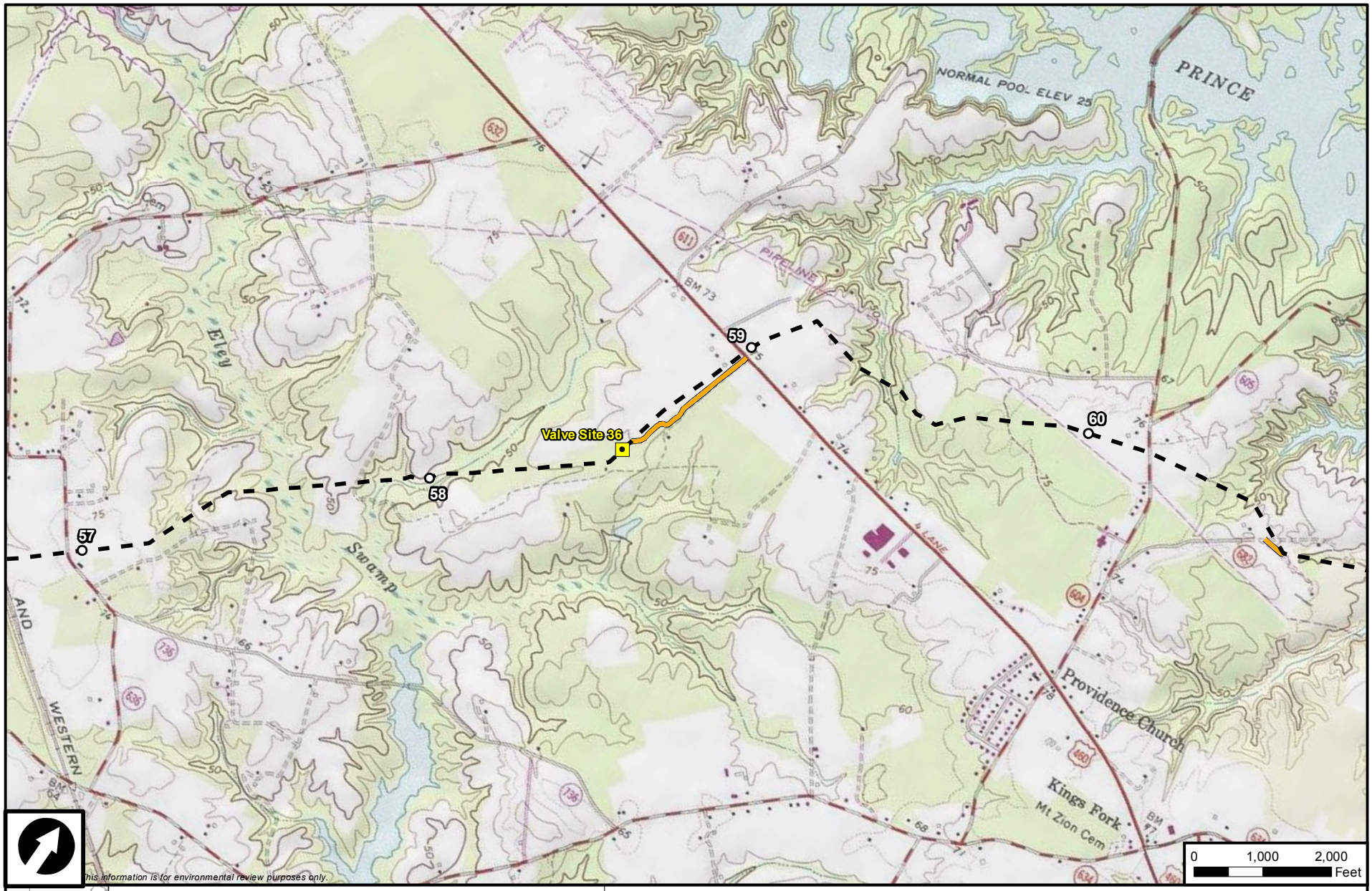

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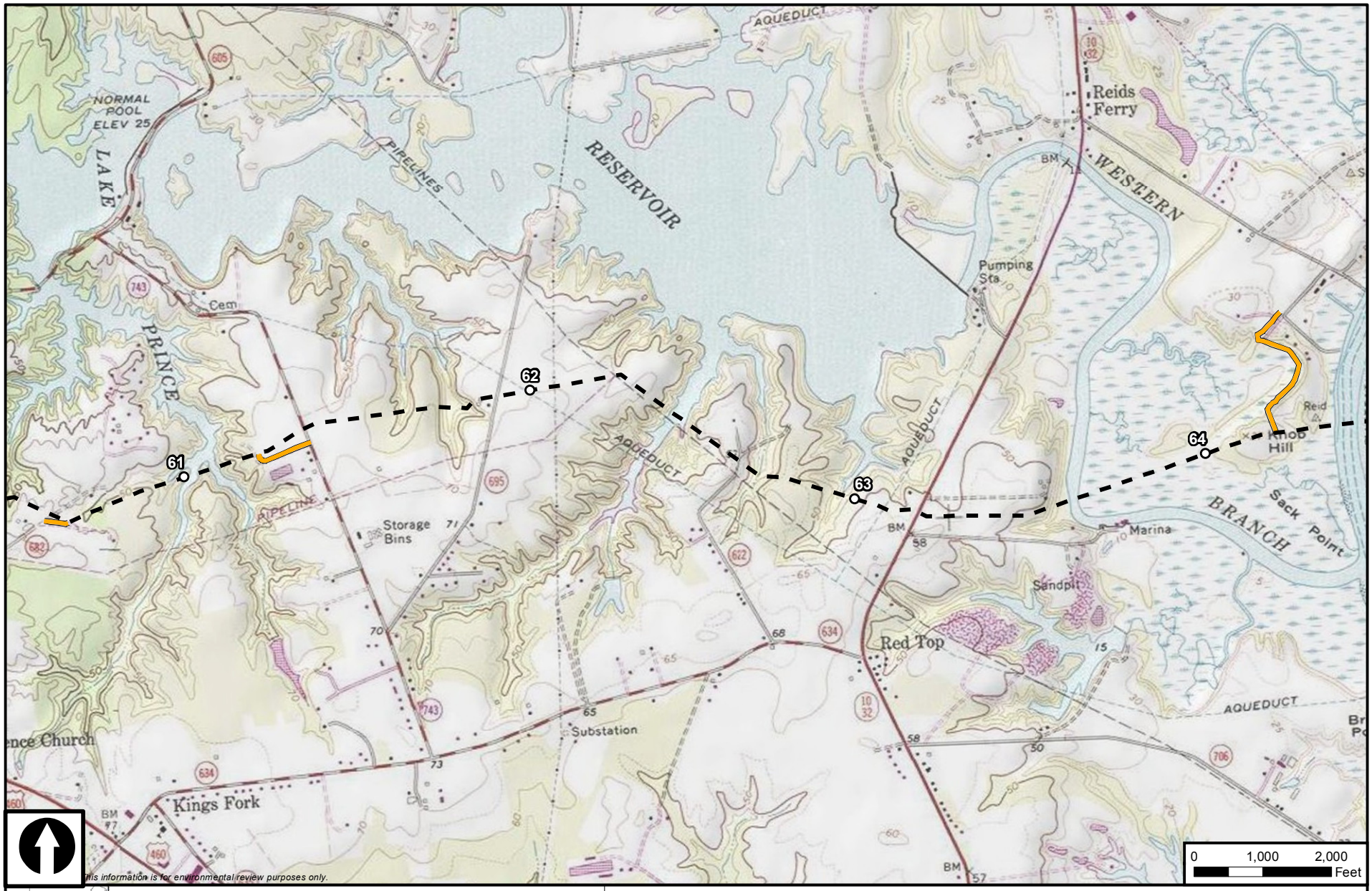

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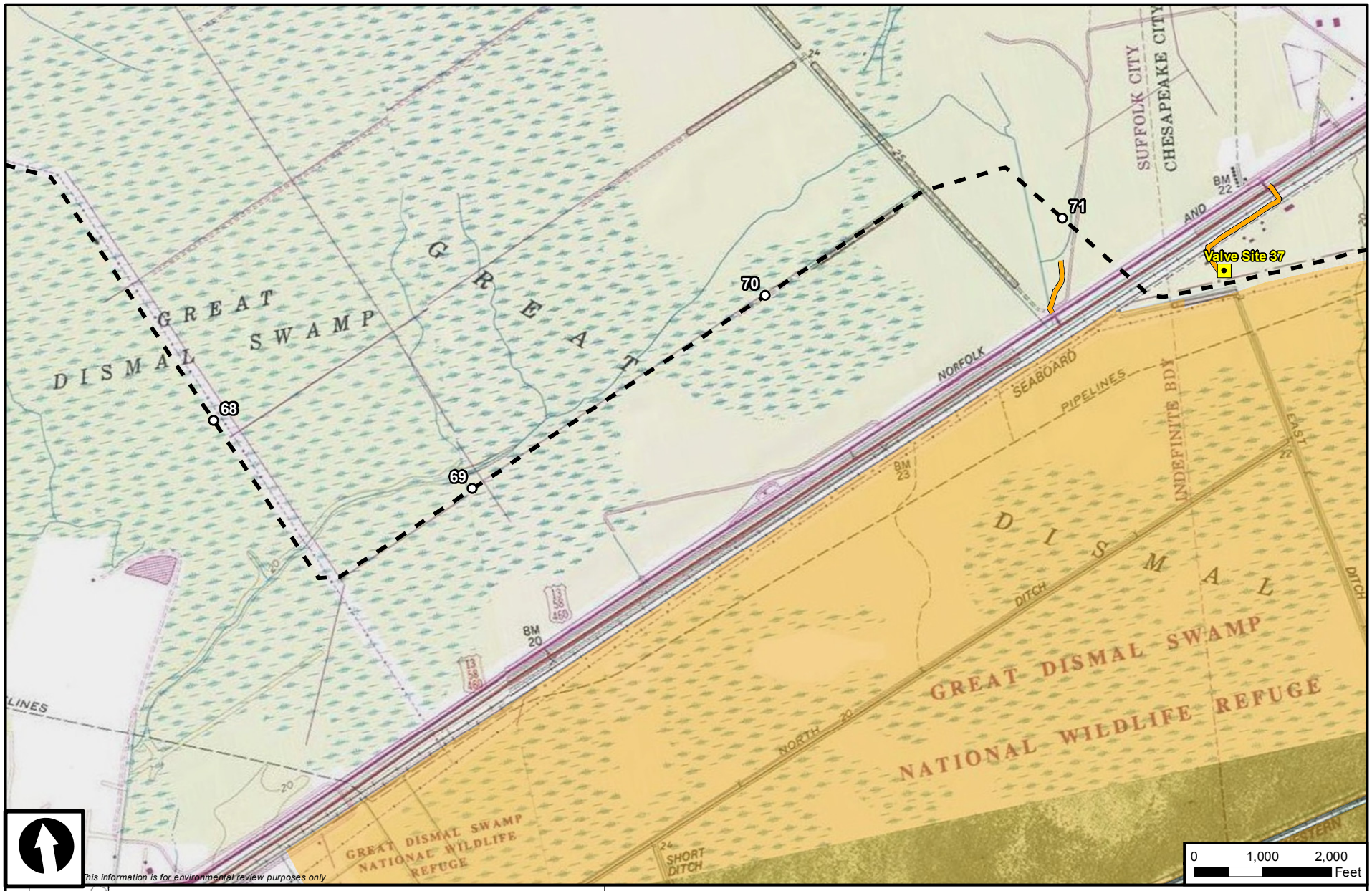

Atlantic Coast Pipeline

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Atlantic Coast Pipeline

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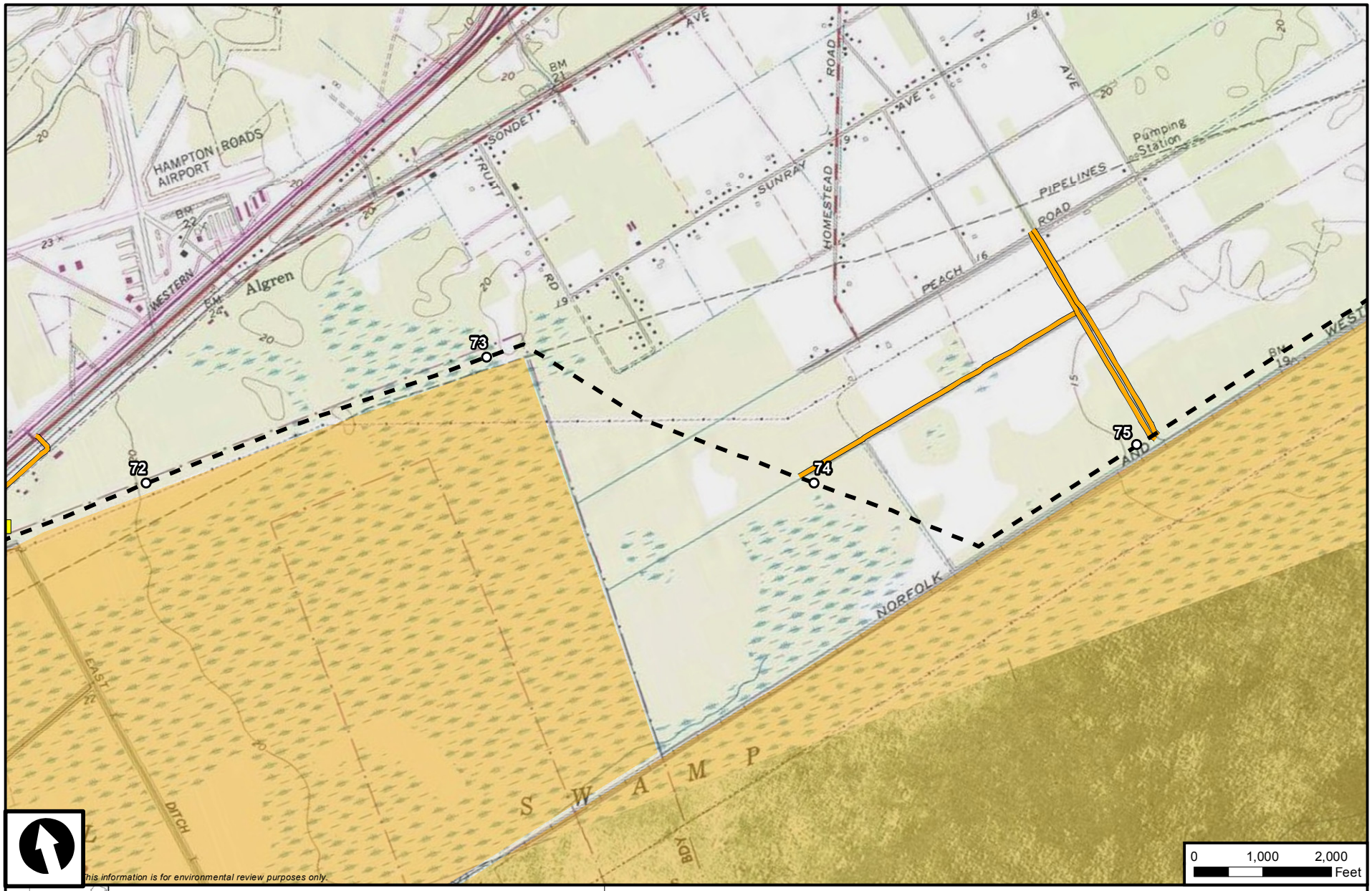

Atlantic Coast Pipeline

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Atlantic Coast Pipeline

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Topographic Route Maps
City of Chesapeake, Virginia

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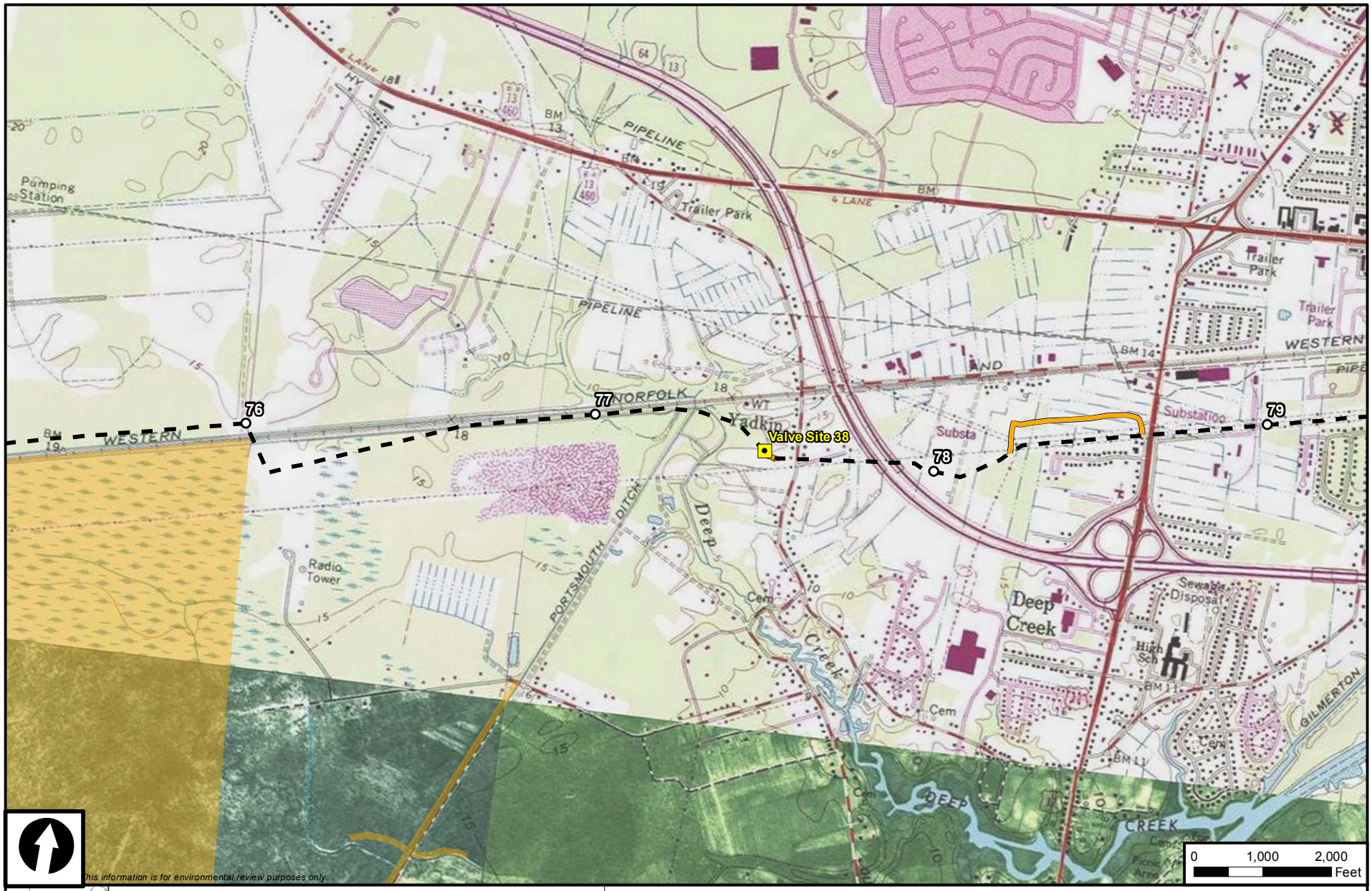

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Atlantic Coast Pipeline

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Topographic Route Maps
City of Chesapeake, Virginia

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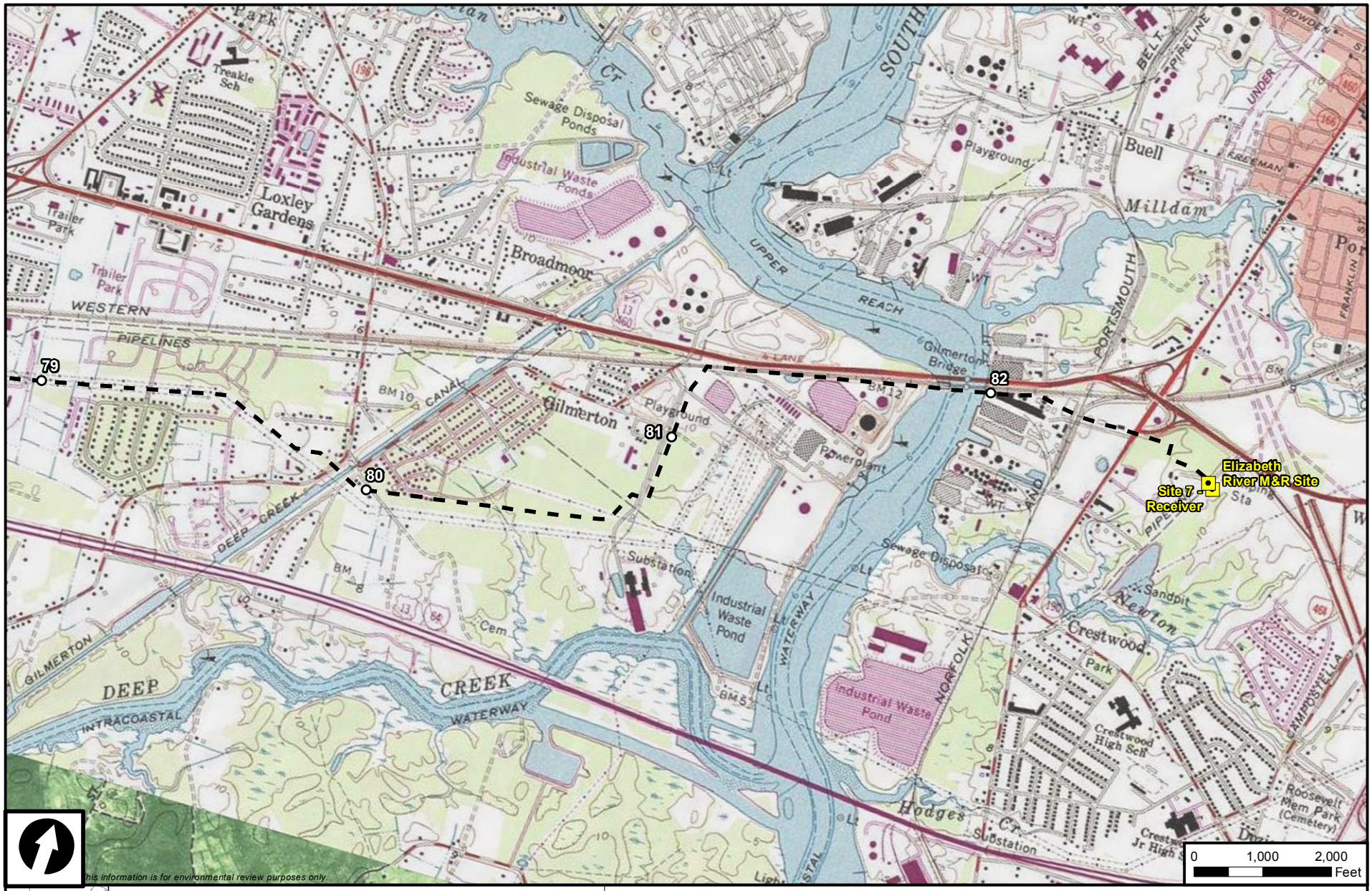

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City of Chesapeake, Virginia

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APPENDIX 2
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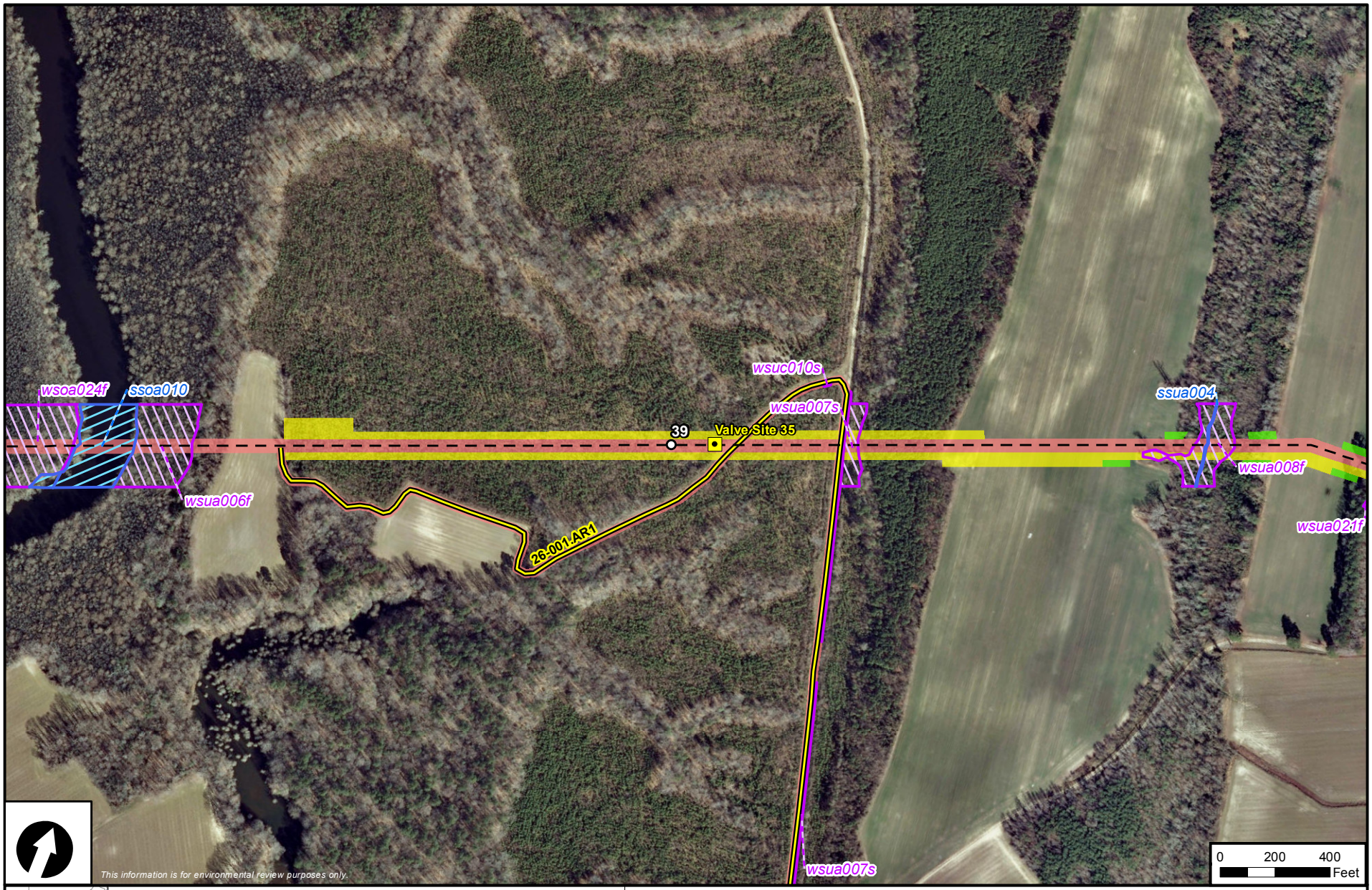

Atlantic Coast Pipeline

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Atlantic Coast Pipeline

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Aerial Route Maps

City of Suffolk, Virginia

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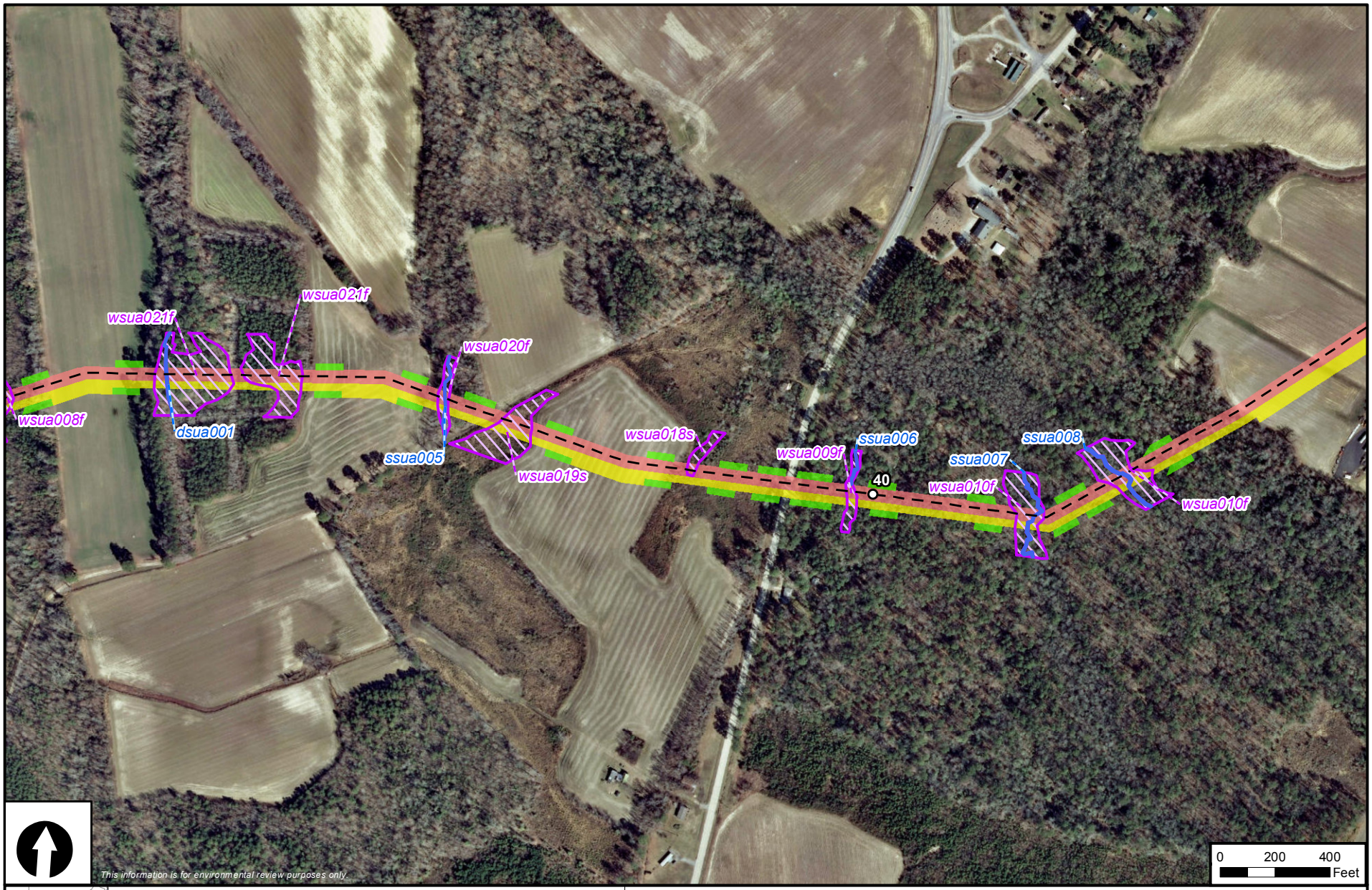

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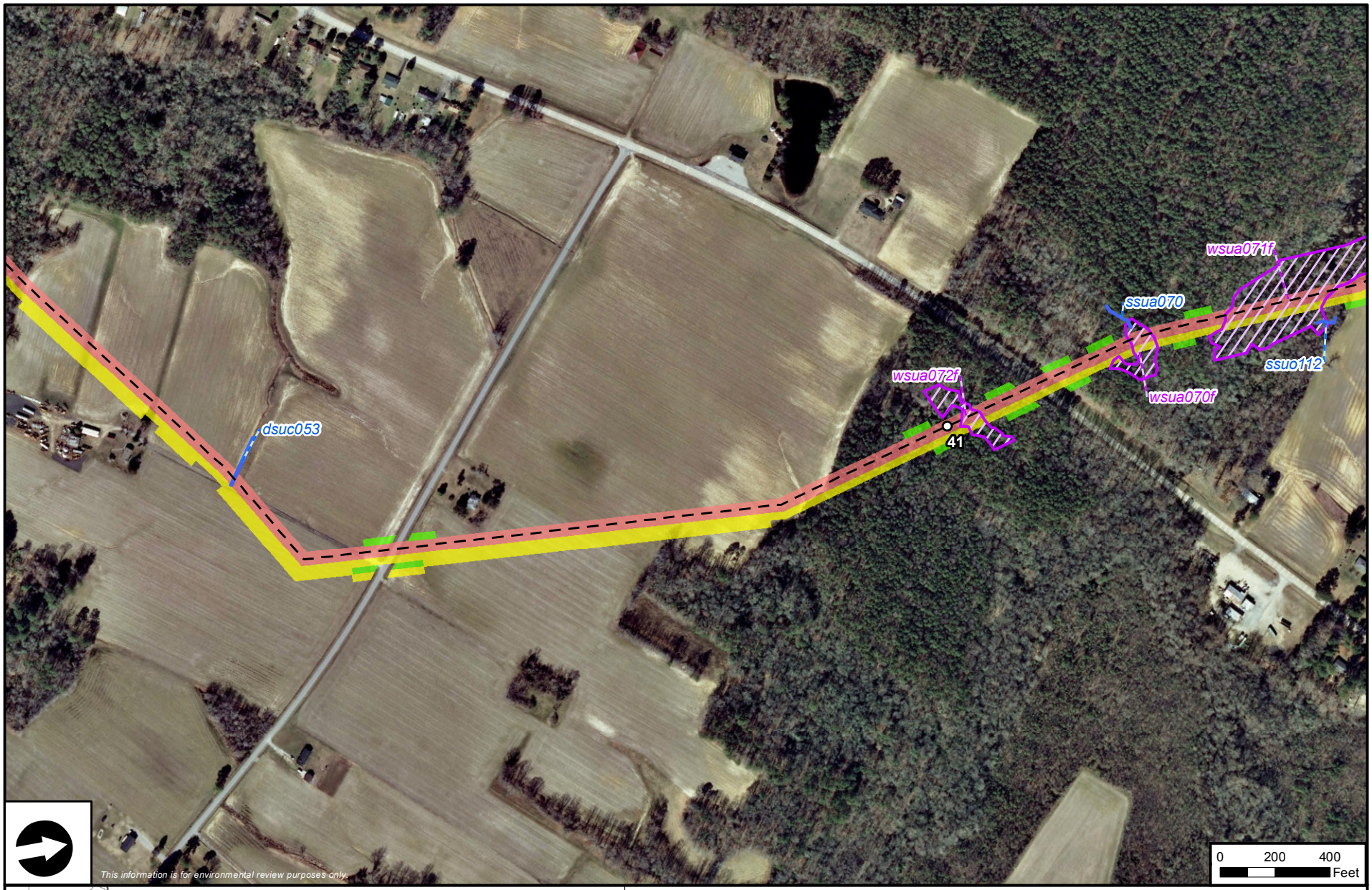

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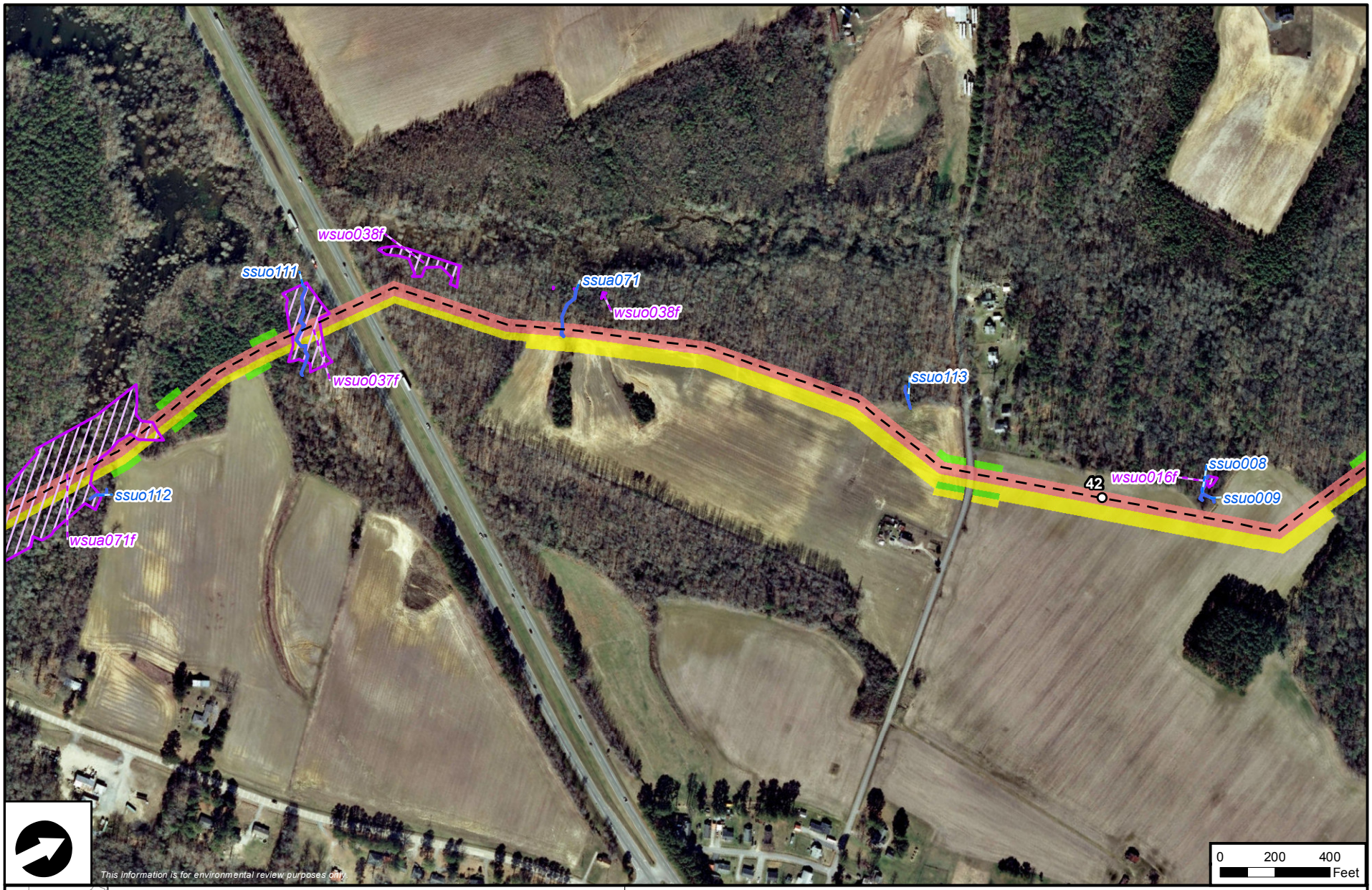

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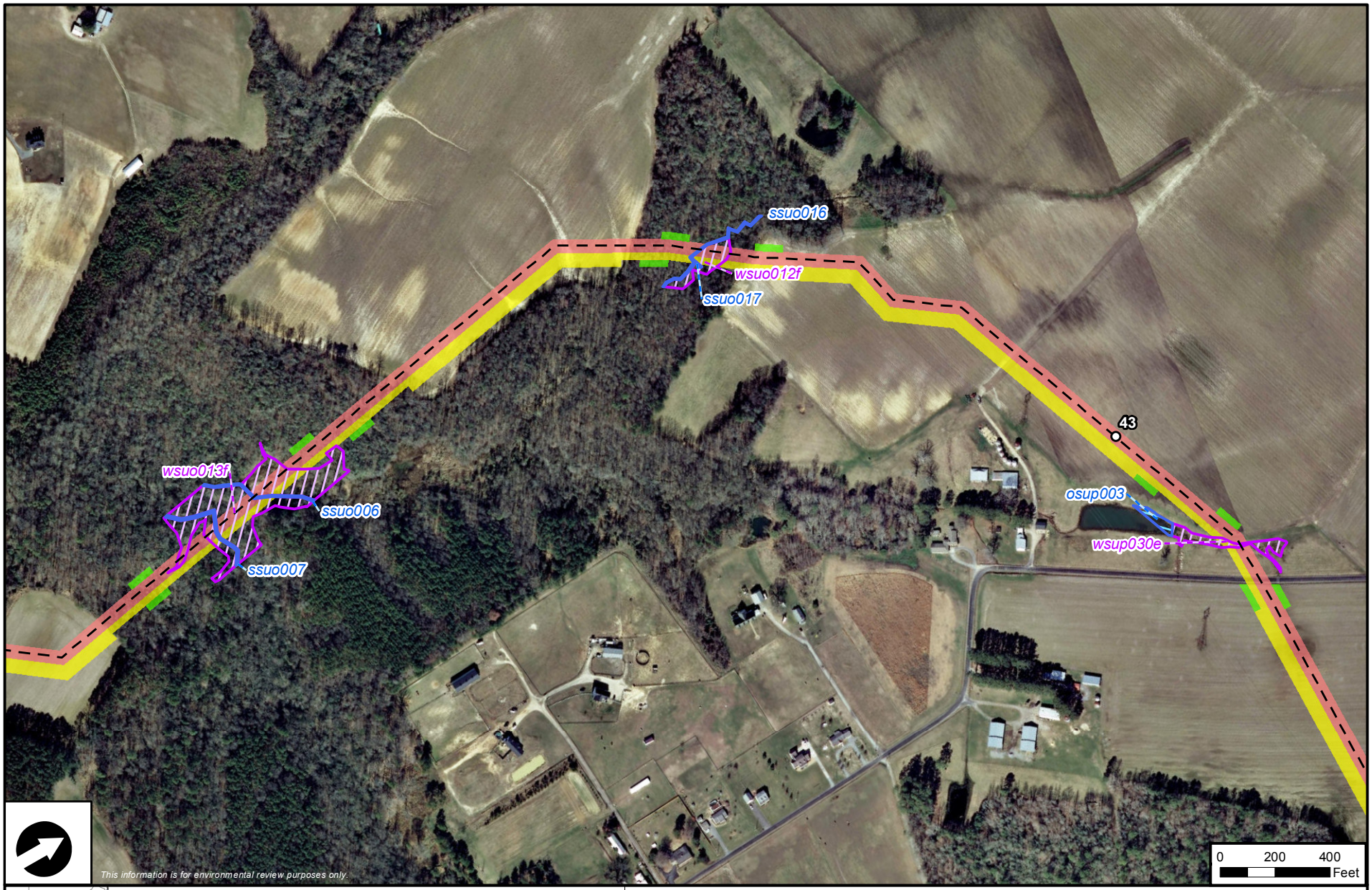

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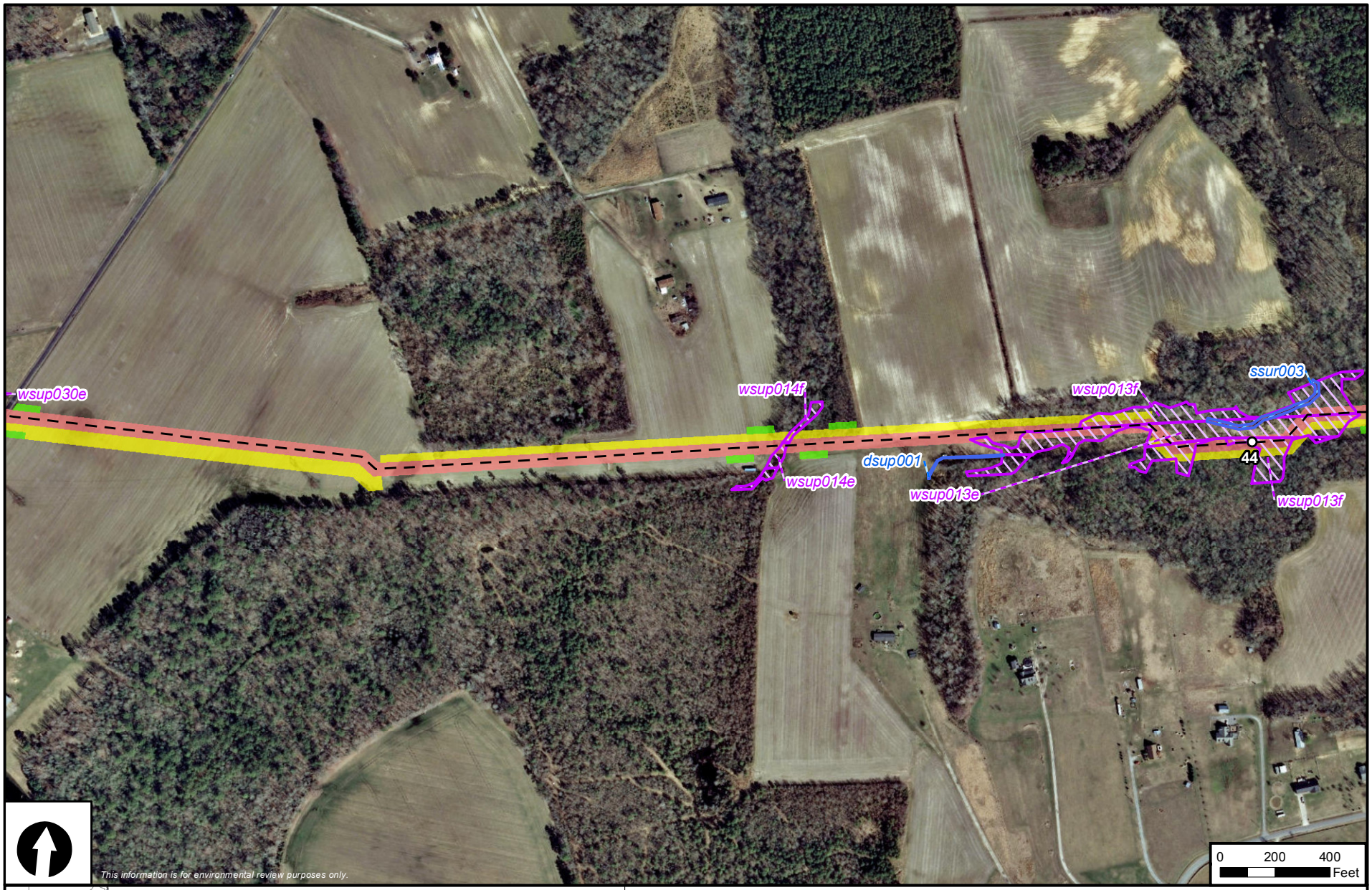

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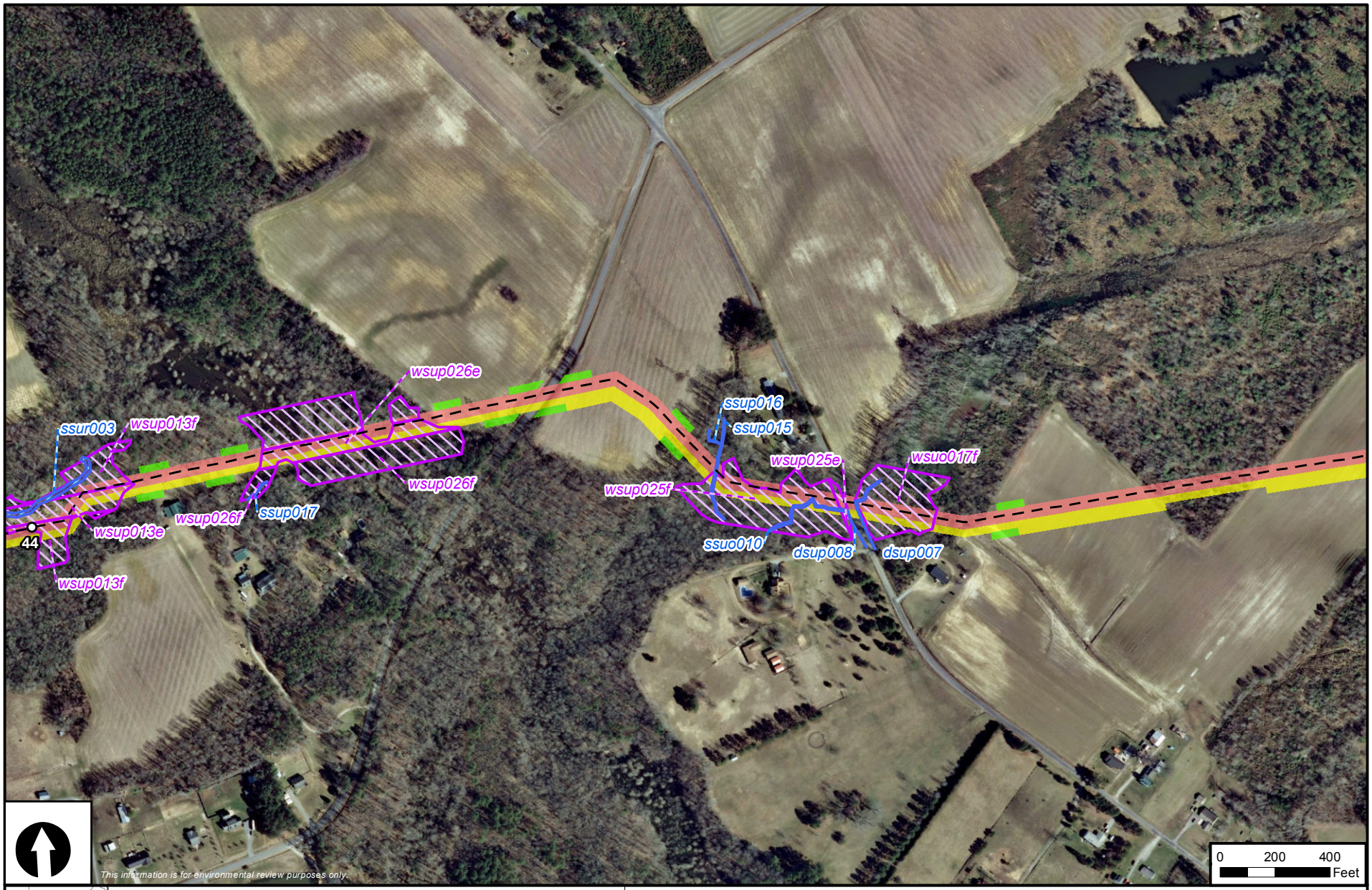

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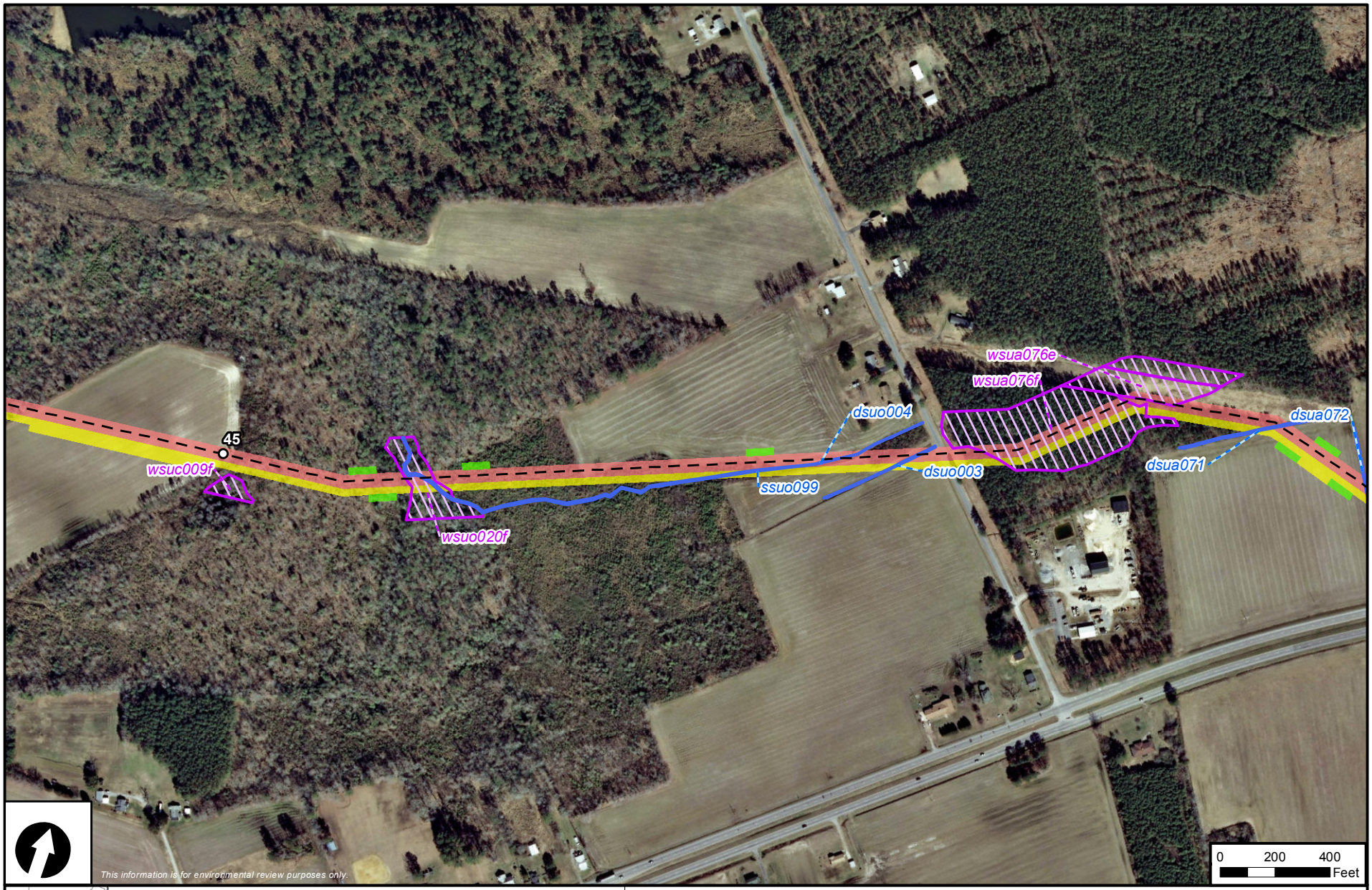

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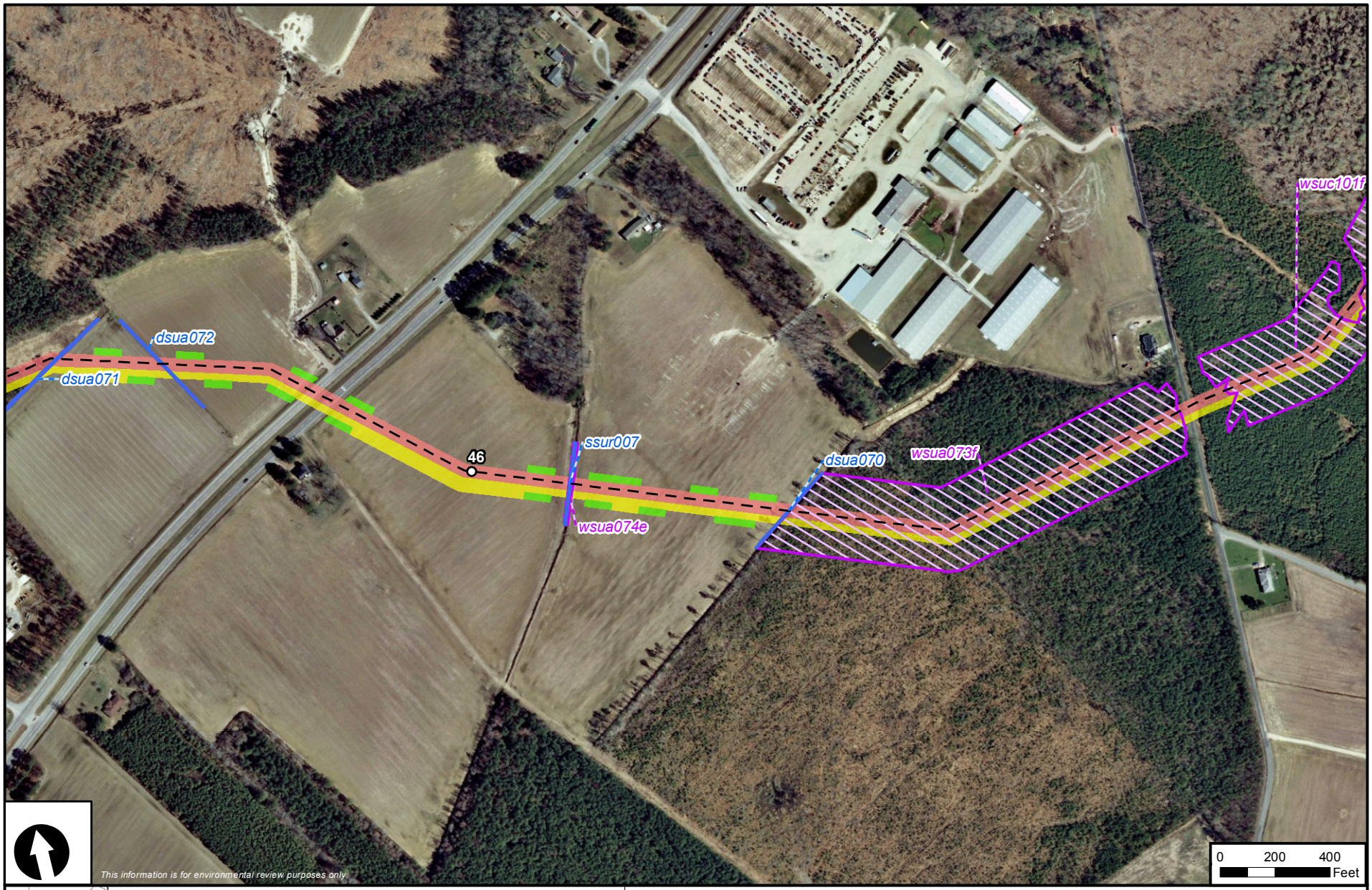

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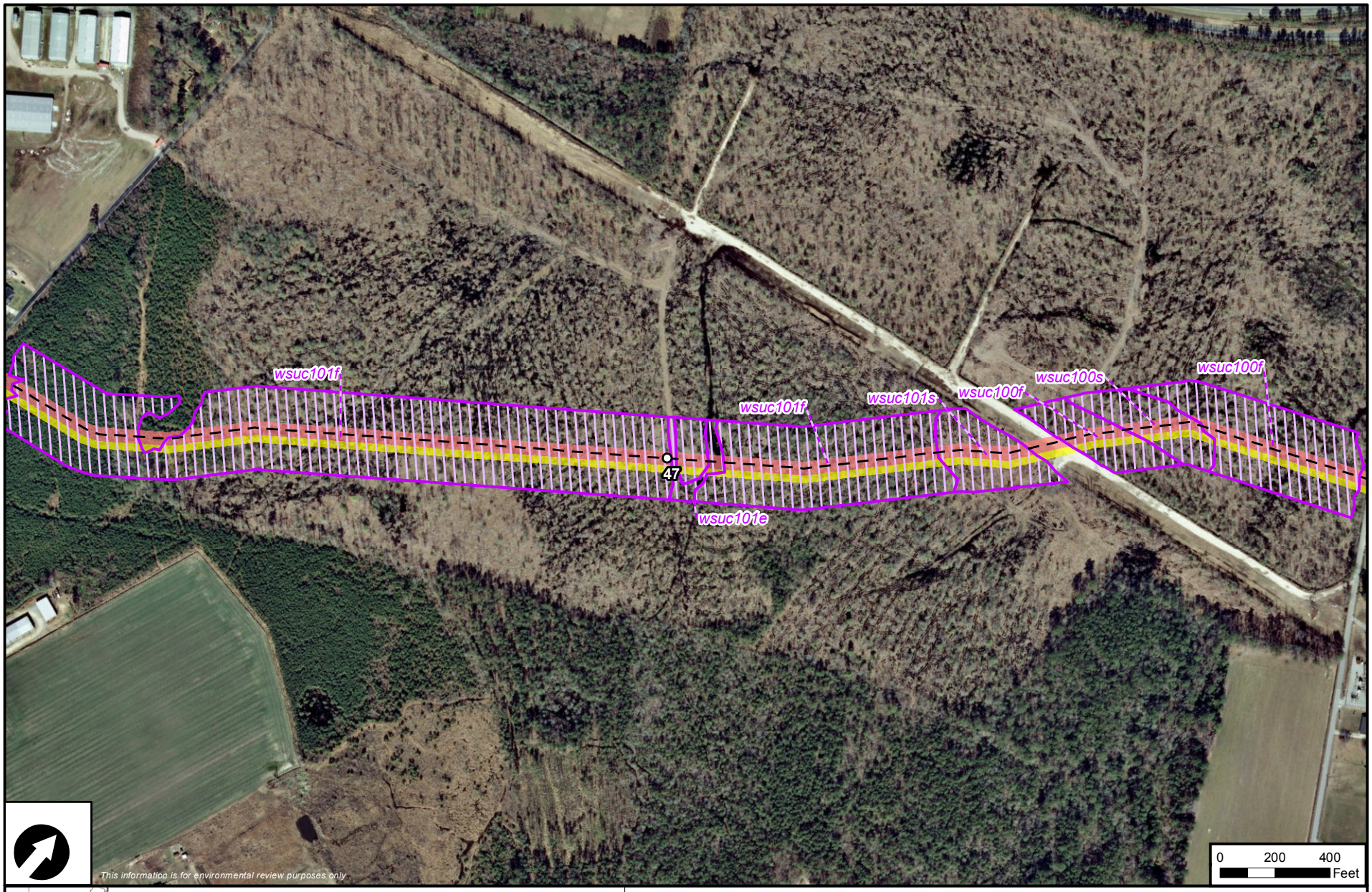

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Atlantic Coast Pipeline

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Aerial Route Maps

City of Suffolk, Virginia

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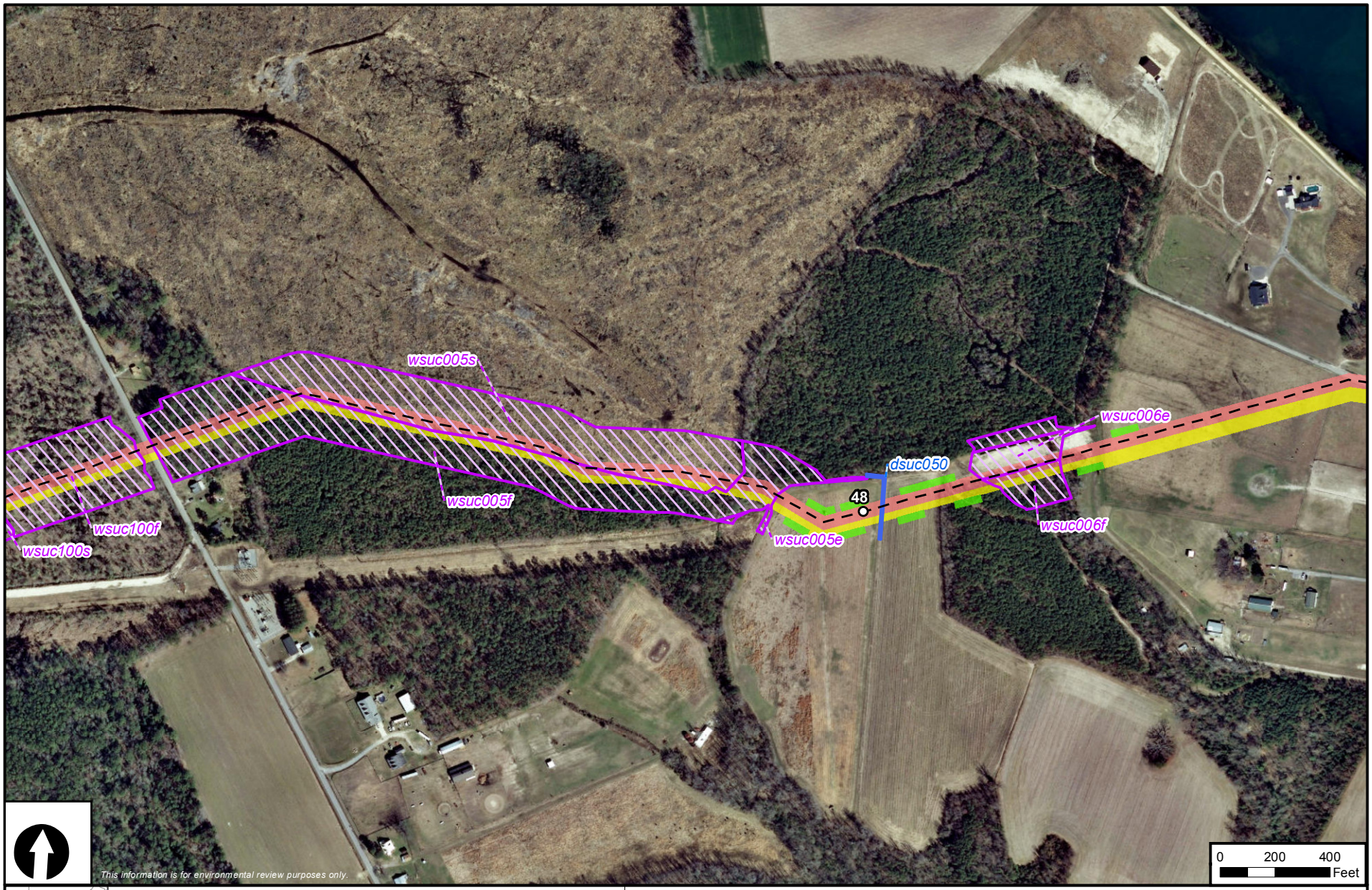

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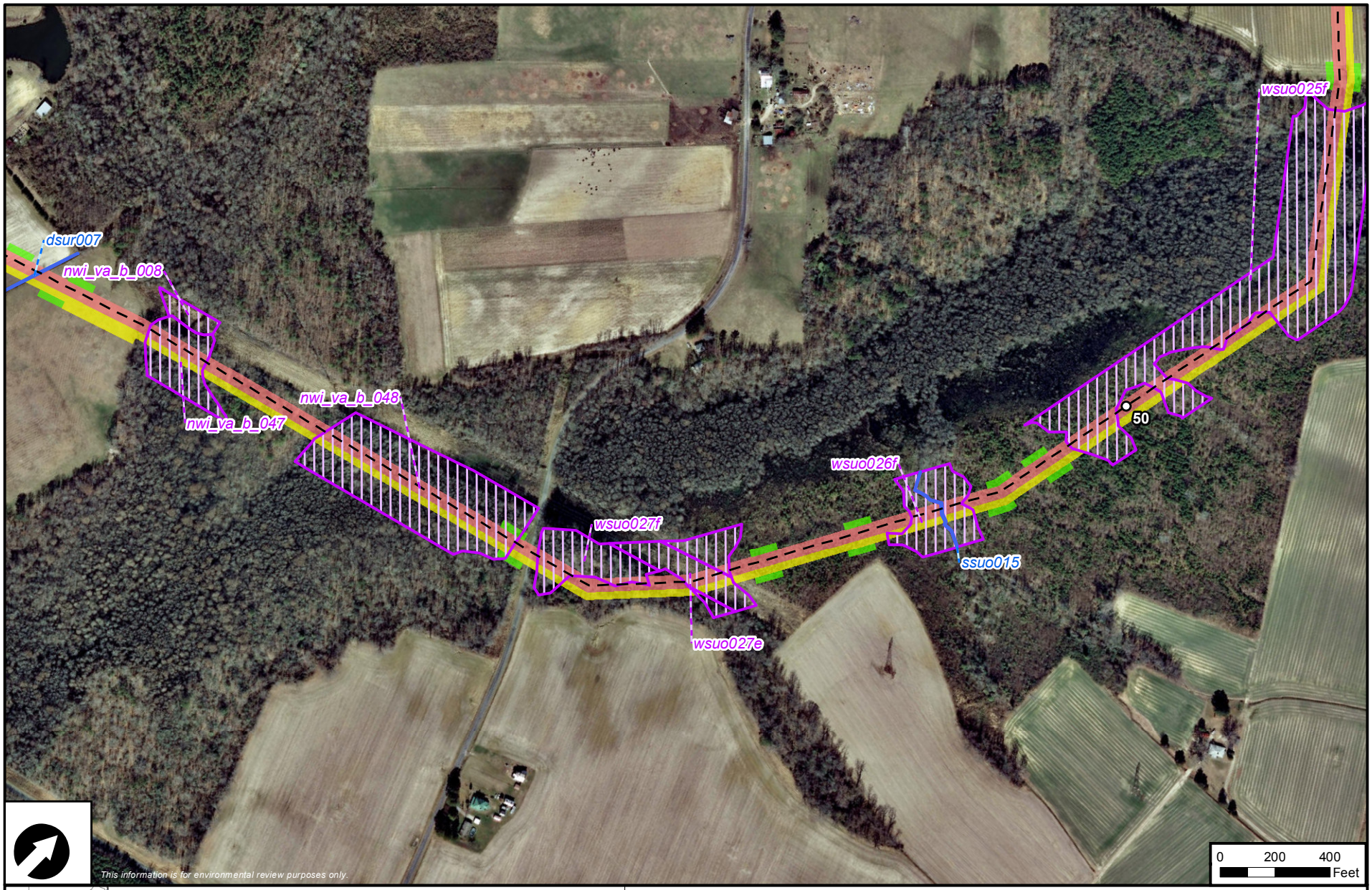

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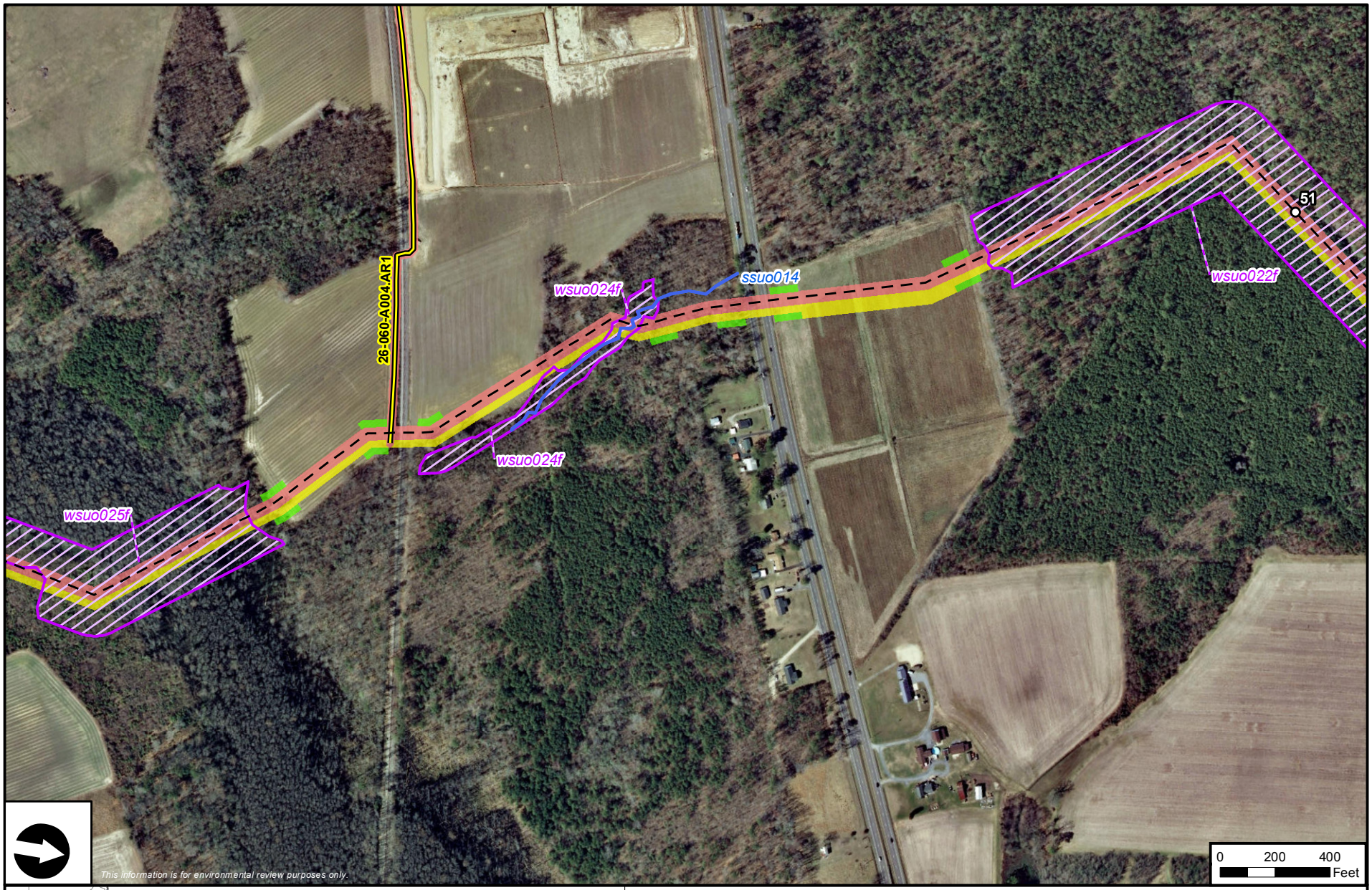

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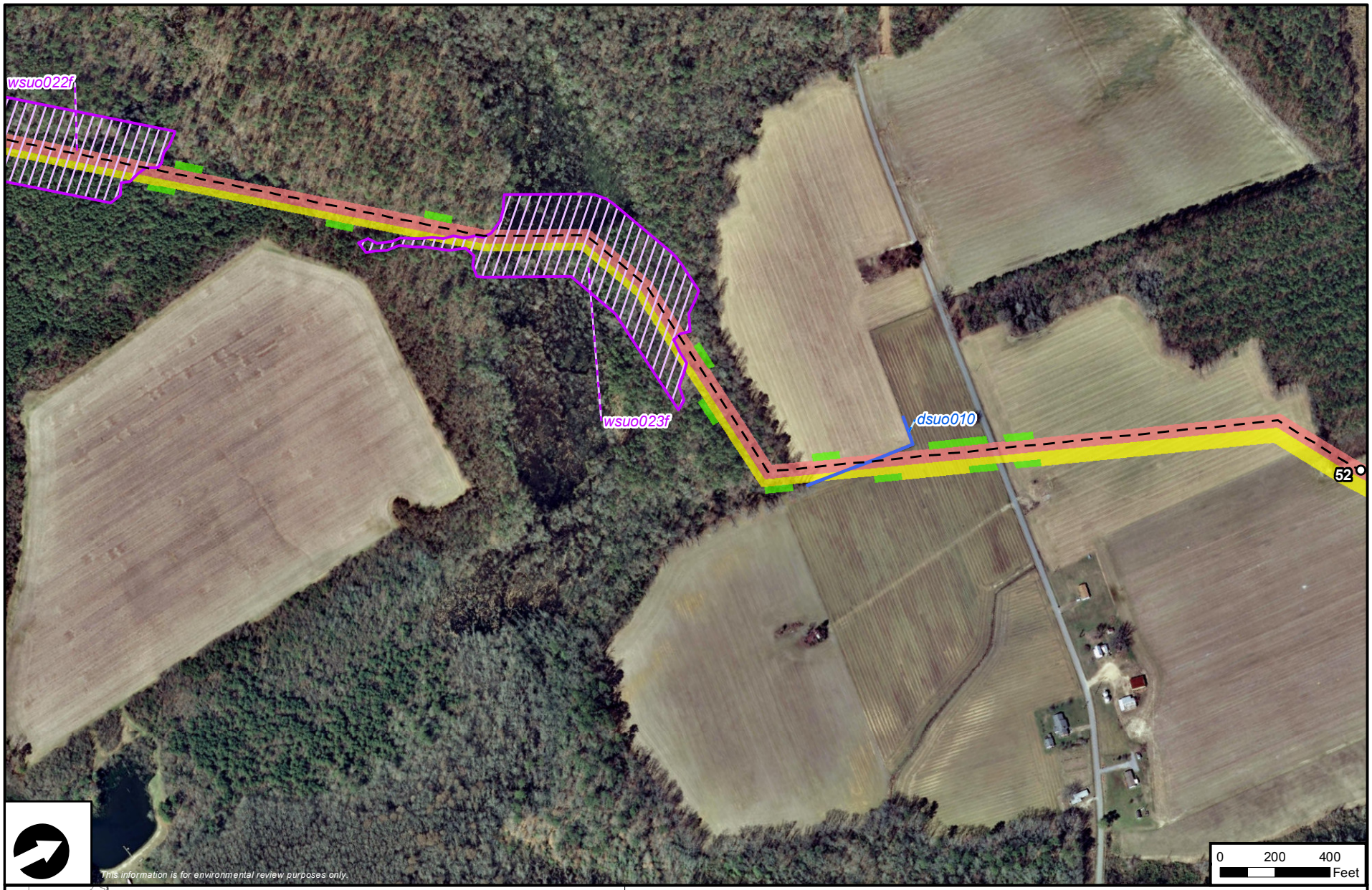

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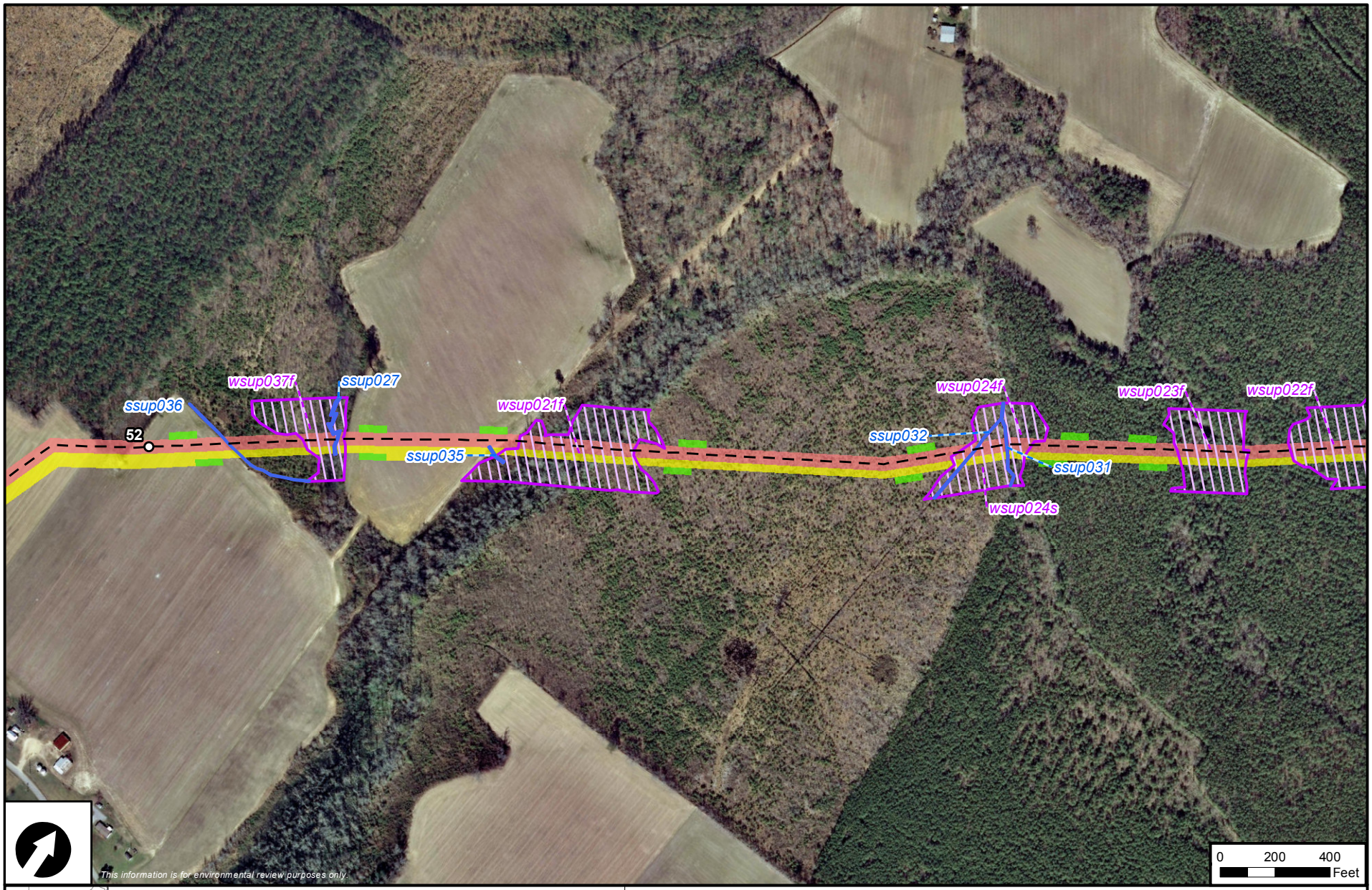

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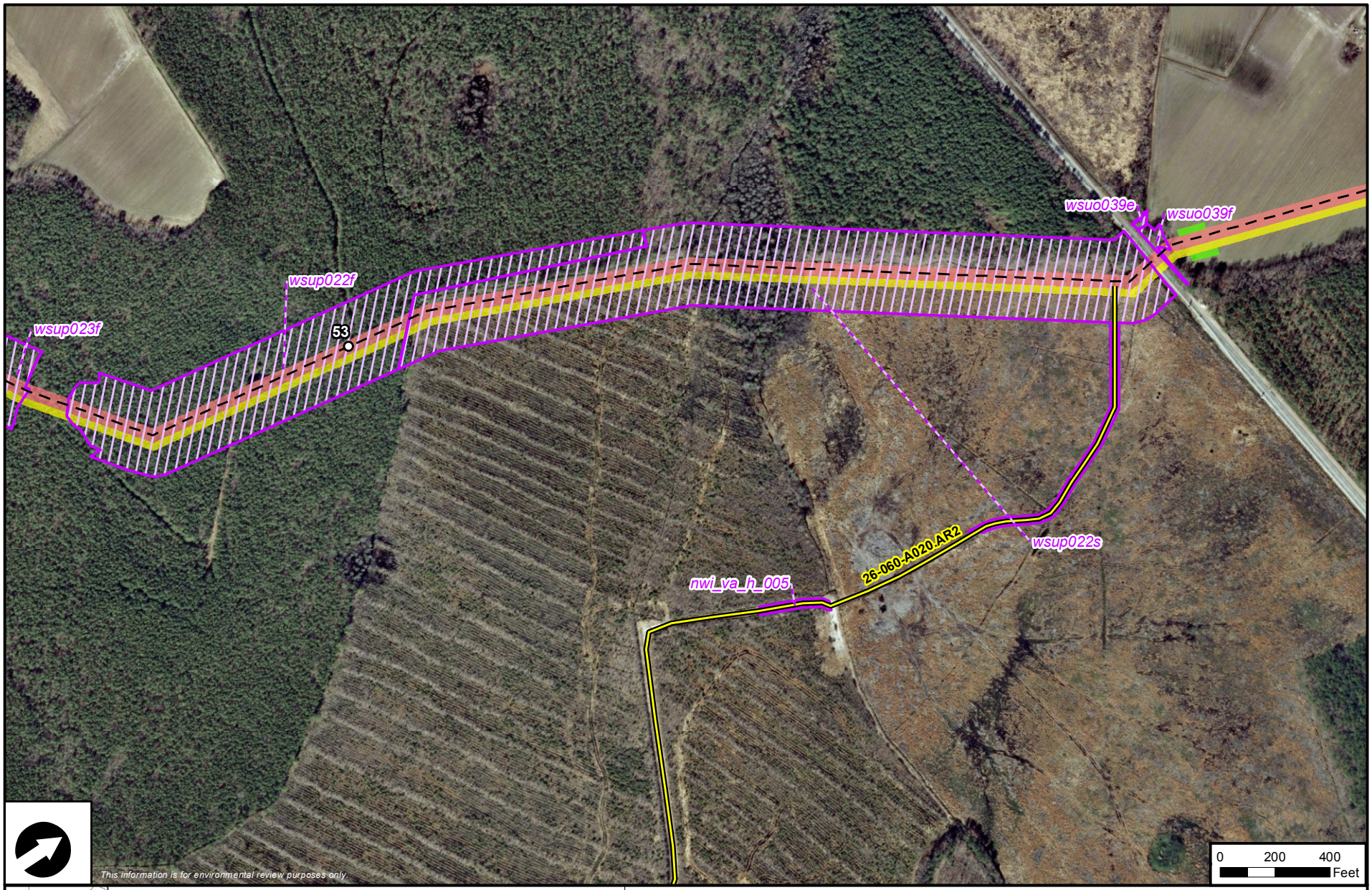

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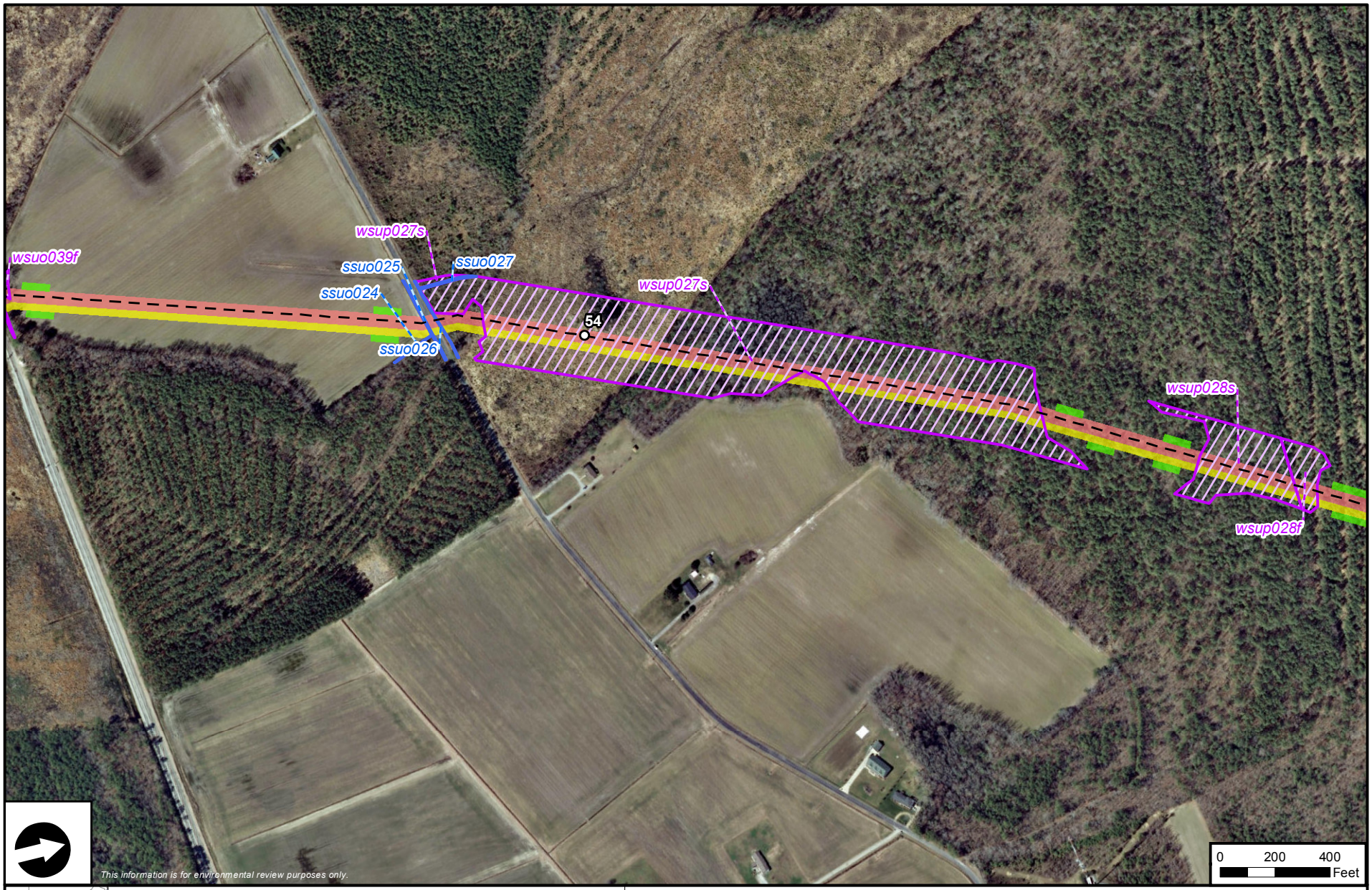

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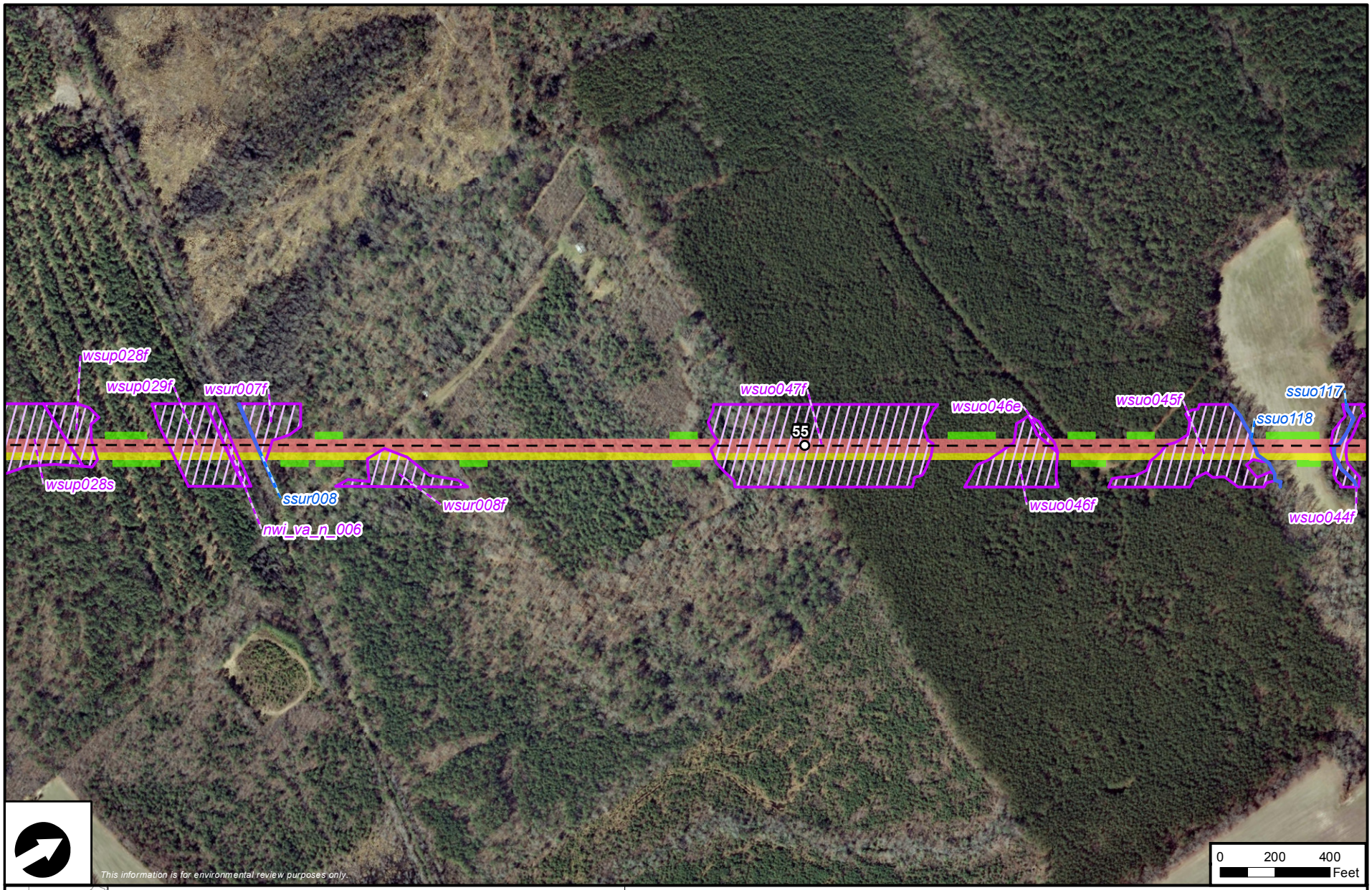

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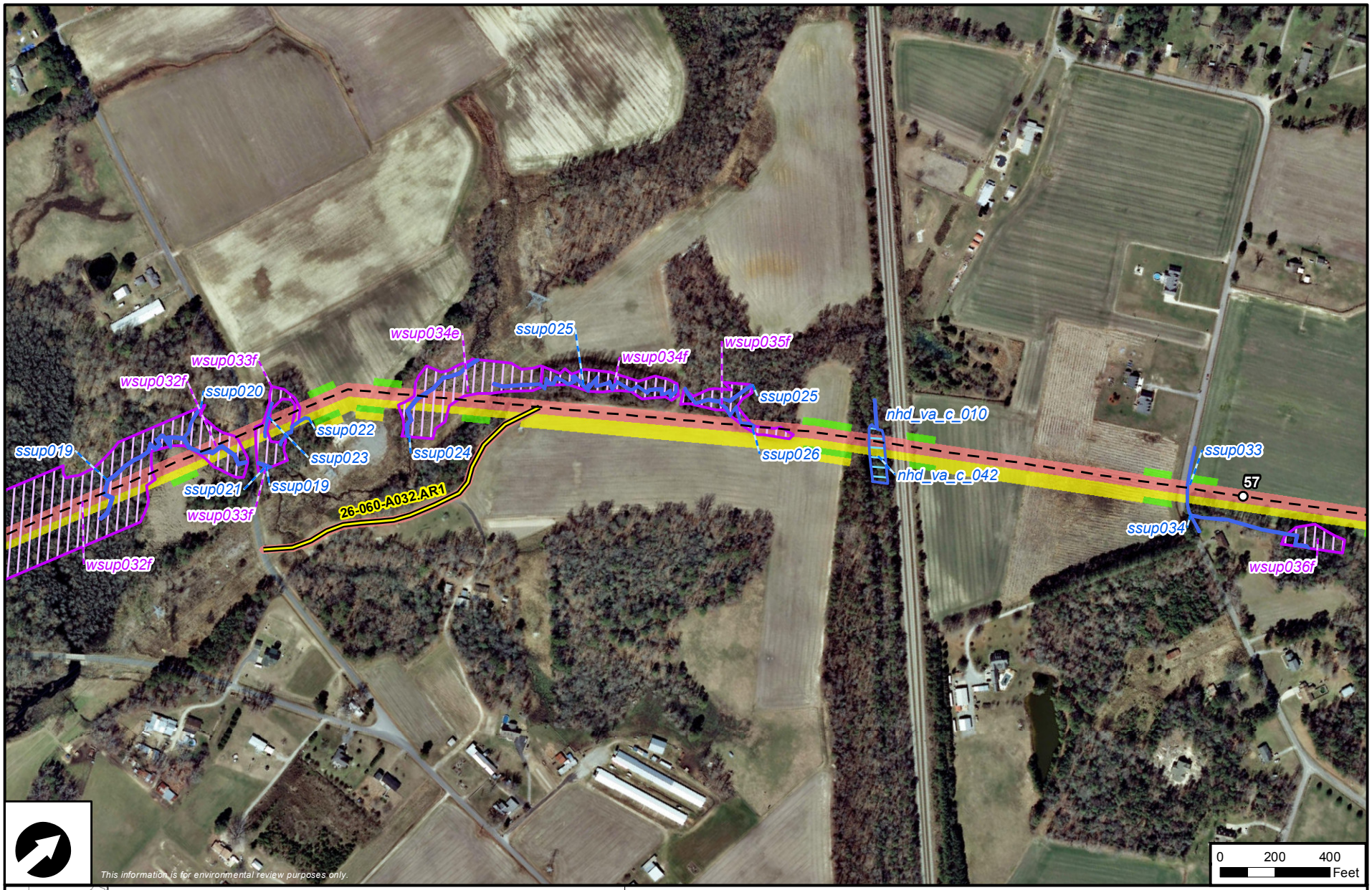

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