Transcontinental Gas Pipe Line Company, LLC

Joint Permit Application

Pittsylvania County, Virginia

Southeast Supply Enhancement Project

Virginia

June 2025

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LIST OF ACRONYMS AND ABBREVIATIONS

APE	Area of Potential Effect
ATWS	additional temporary workspace
BMP	best management practice
CGP	Virginia Pollution Discharge Elimination System's Construction General Permit
Corps	U.S. Army Corps of Engineers
CWA	Clean Water Act
dBA Ldn	day-night average sound pressure level
DCR	Virginia's Department of Conservation and Recreation
VADEQ	Virginia's Department of Environmental Quality
DHR	Virginia's Department of Historic Resources
DSPT	Direct steerable pipe thrusting
Dth/d	dekatherms per day
DWR	Virginia Department of Wildlife resources
EA	Environmental Assessment
EI	Environmental Inspector
EJ	Environmental Justice
EMD	electric motor-driven
EPA	U.S. Environmental Protection Agency
EPCA	Energy Policy and Conservation Act
ePIX	Electronic Project Information Exchange
E&S	Erosion and sediment control
FEMA	Federal Emergency Management Agency
FERC	Federal Energy Regulatory Commission
GIS	Geographic Information System
HDD	horizontal directional drill(ing)
HP	horsepower
HUC	Hydrologic Unit Code
IBA	Important Bird Area
LEDPA	Least Environmentally Damaging Practicable Alternative
MAOP	maximum allowable operating pressure
MLV	mainline valves
MOC	Management of Change
MP	Milepost

MTBM	Microtunnel boring machine
NEPA	National Environmental Protection Act
PAR	Permanent Access Road
PEM	Palustrine Emergent wetland
PFO	Palustrine Forested wetland
PHMSA	Pipeline and Hazardous Materials Safety Administration
PJD	Preliminary Jurisdictional Determination
PRAM	Pipe ramming
PRCI	Pipeline Research Council International
PRM	Permittee responsible Mitigation
Project	Southeast Supply Enhancement Project
psig	pounds per square inch gauge
PSS	Palustrine scrub/shrub wetland
RCI	Reach Condition Index
ROW	right-of-way[1]
SFHA	Special Flood Hazard Area
SHPO	State Historic Preservation Office
SSE	Southeast Supply Enhancement Project
SSWD	State Surface Waters Determination
SWM	Stormwater management
TAR	Temporary Access Road
TOYR	Time of Year Restriction
Transco	Transcontinental Gas Pipe Line Company, LLC
USACE	U.S. Army Corps of Engineers
USDOT	U.S. Department of Transportation
USFWS	U.S. Fish and Wildlife Service
USM	Unified Stream Methodology
VCRIS	Virginia Cultural resources Information System
VMRC	Virginia Marine Resources Commission

[1] For the purpose of this Application, except where the context may indicate otherwise, the term “right-of-way” refers to Transco’s existing maintained pipeline corridor or the company’s proposed pipeline corridor for the Eden Loop, and is not intended to limit the extent of Transco’s existing easements and other rights or interests in lands that the company may own or acquire

VWP	Virginia Water Protection
Williams	The Williams Companies, Inc.
WQC	Water Quality Certification
WSSI	Wetland Studies and Solutions, Inc.
WOTUS	Waters of the United States

1 PROJECT INFORMATION

Transcontinental Gas Pipe Line Company, LLC (Transco) is proposing to construct the Southeast Supply Enhancement Project (SSE or Project). The Project is an expansion of Transco's existing natural gas transmission system designed to enable Transco to reliably provide additional natural gas to major local distribution and utility companies in Virginia and throughout the southeast to meet the growing demand for natural gas in the southeast United States. The Project is regulated by the Federal Energy Regulatory Commission (FERC) pursuant to Section 7(c) of the Natural Gas Act. Transco began public outreach for the Project in November 2023 to educate and build relationships with stakeholders and communities. On October 29, 2024 Transco filed a request for authorization from FERC under Sections 7(b) and 7(c) of the Natural Gas Act for appropriate abandonment and a Certificate of Public Convenience and Necessity (Certificate) to construct, own, operate, and maintain the proposed Project facilities (FERC Docket No. CP25-10). In addition to the Certificate, the Project will require several additional permits, authorizations and approvals to construct or operate the Project facilities. The purpose of this application package (Application) is to support the following requests for the portions of the Project in Virginia:

- Individual Permit from the U.S. Army Corps of Engineers (USACE or~~,~~ Corps) Norfolk District for wetland and waterbody impacts under Section 404 of the Clean Water Act (CWA);
- 401 Water Quality Certification (WQC) from the Virginia Department of Environmental Quality (VADEQ); and
- Request for authorization to rely on a Virginia Marine Resources Commission (VMRC) General Permit for Utility Line Encroachments Beneath or Over State-Owned Subaqueous Beds for the utility crossings associated with the Banister and Sandy River crossings.[2]
- Under separate cover, Transco is concurrently requesting from VADEQ Additional Upland Conditions for Water Quality Certification[3]

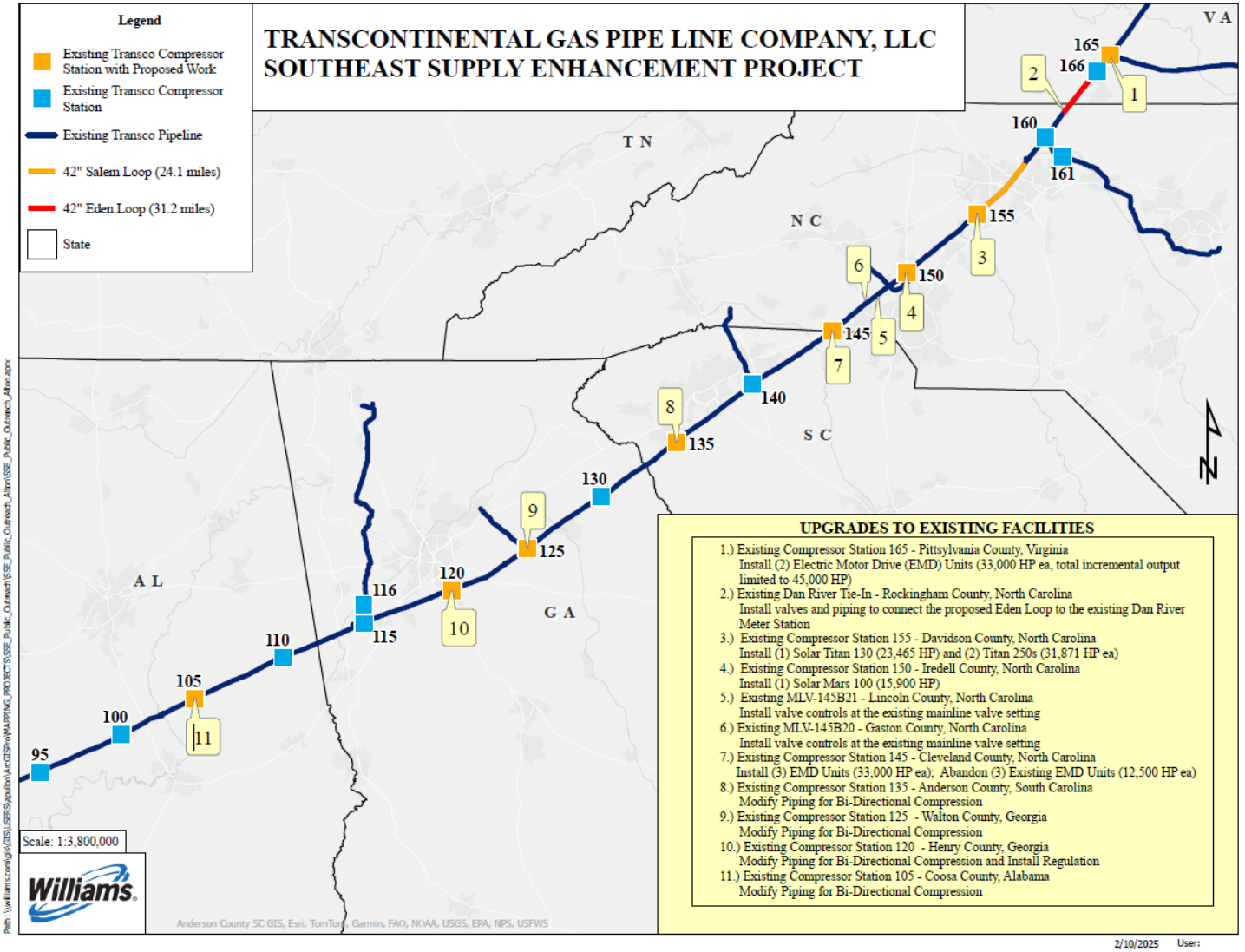
Pre-application meetings regarding this Application and other state applications were held between representatives of Transco and the USACE Norfolk District and VADEQ between March

[2] *See* 4 VAC 20-1410.

[3] In accordance with Article 2.6 § 62.1-44.15:80 in the Code of Virginia

2024 and May 2025. On February 14, 2025, Transco requested a 401 WQC and Upland 401 pre-filing meeting with VADEQ which was held on February 20, 2025. A Project overview map depicting the overall Project components is provided in Figure 1.1 below.

Figure 1.1: Southeast Supply Enhancement Project Overall Map



1.1 PROJECT DESCRIPTION

The Virginia components of the Southeast Supply Enhancement Project included in this application are outlined below:

Pipeline Facilities

- Approximately 26.8 miles of the 42-inch-diameter Eden Loop pipeline in Pittsylvania County, Virginia.

Compression Facilities

- The addition of two [33,000 horsepower (HP) each] electric motor-driven (EMD) compressor units at Transco's existing Compressor Station 165 located in Pittsylvania County, Virginia. Compressor Station 165 will be limited to a total incremental output of 45,000 HP, thereby increasing the total certificated station output to 96,930 HP;

The use of existing, improved, and new access roads, and contractor yards will also be required for the Project. Additional ancillary facilities and piping, such as mainline valves (MLVs), cathodic protection, communication facilities, and internal inspection devices (e.g., pig launchers and receivers[4]) will be necessary to support the Project.

Transco has designed the workspace at Compressor Station 165 to avoid crossings of wetlands or waterbodies. A section of the Eden loop extends into Compressor Station 165 limits of disturbance and includes stream and wetland crossings. Those impacts are accounted for in this Application associated with Eden Loop.

1.1.1 Project Schedule

Subject to FERC's certification of the Project and receipt of other necessary permits and authorizations, Transco anticipates construction of the Project would commence in March 2026 to meet a proposed partial in-service date for the pipeline components in December 2026 with a full Project proposed in service date of November 1, 2027.

[4] Pipeline inspection gauge

The Applicant understands that the USACE will evaluate this Application under the Executive Order 14156 Energy Emergency. However, based on the Project timeline described in the previous paragraph, the Applicant requests that, where practical, the Application be processed under standard permitting procedures. In particular, Transco requests the USACE use the full 30-day public notice to ensure the opportunity for public participation. Additionally, to the extent the USACE determines that a public hearing would be appropriate, Transco believes given the Project timeline, such a hearing could be held in the normal course of the USACE's review.

1.1.2 Wetland and Stream Delineation

Wetland delineations were conducted in accordance with the 1987 Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory 1987) and the applicable Regional Supplements to the Corps of Engineers Wetlands Delineation Manuals; Eastern Mountains and Piedmont region (USACE 2012). The delineation report, including data forms, figures, and photographs for wetlands and streams within the Project's environmental survey boundary is provided in Attachment 1. These resources were delineated and survey-located from March 2024 through August 2024. Additional fieldwork was performed in October 2024, November 2024, January 2025, and February 2025. The results of this delineation are described in the report entitled, "Waters of the U.S. (Including Wetlands) Delineation – Southeast Supply Enhancement Project – Eden Loop – VA Portion and Compressor Station 165" and dated September 16, 2024, with updates on April 22, 2025. A Preliminary Jurisdictional Determination (PJD) request was submitted to the USACE on October 4, 2024, with updates submitted May 16, 2025 (NAO-2024-02627-PB). Additionally, a State Surface Waters Determination (SSWD) request was submitted to VADEQ on October 4, 2024 with updates submitted May 13, 2025 (SSWD No. 000214). The PJD and SSWD approvals are both pending.

1.1.3 National Historic Preservation Act Section 106 Consultation

Transco initiated Section 106 consultation for the Project in Virginia directly with the Virginia Department of Historic Resources (DHR), acting as the Virginia State Historic Preservation Office (SHPO). Prior to formal studies, a desktop review of the Project components was conducted using background research available digitally. Locations of previously recorded cultural resources and surveys were compiled from the online Virginia Cultural Resources Information System (VCRIS), a geographic information system (GIS) database maintained by DHR. A Project Review Request and an initial cultural resources consultation letter with mapping, proposed Areas of Potential

Effects (APEs), and proposed field methods were submitted via online upload to the Electronic Project Information Exchange (ePIX) system on April 4, 2024. Archaeological and historic architectural surveys have been completed for the Project. Initial technical reports were submitted to the DHR (see Attachment 2 for additional information). The DHR requested revisions and additional information for both surveys; revised reports will be submitted in May and June 2025. Additionally, changes to the Project that occurred after submission of the initial reports have been surveyed and addendum reports presenting the results of those surveys also will be submitted in May and June 2025. DHR responses are pending and will be provided when available. Overall, the Project is currently recommended to have no adverse effects on cultural resources eligible for or listed in the National Register of Historic Places (NRHP). Further, Transco began coordination with numerous federally and Virginia state recognized Native American tribes, beginning in January 2024; and to date, none of them have expressed concerns to Transco regarding the Project.

In the event that unanticipated cultural resources are found during construction, Transco will follow its Unanticipated Discovery Plan for Cultural Resources and Human Remains (Attachment 3).

1.1.4 Endangered Species Act Section 7 Consultation

Section 7 of the ESA (16 U.S.C. §§ 1531-1543, PL 93-205) requires each federal agency to ensure that an action authorized, funded, or carried out by the agency does not jeopardize the continued existence of federally listed threatened or endangered species or result in the destruction or adverse modification of the designated critical habitat for federally listed threatened or endangered species. FERC, as the lead agency in the review of the Project, is required to consult with the US Fish and Wildlife Service (USFWS) to determine whether federally listed species proposed for listing, or their designated critical habitat may occur in the Project area and to determine the Project's potential effects on these species and critical habitats.

The Virginia agencies with jurisdiction over state-listed species are the Virginia Department of Conservation and Recreation (DCR) and Virginia Department of Wildlife Resources (DWR) both of which were consulted to identify the potential occurrences of endangered and threatened species, including species proposed for listing, or their designated critical habitat, and to determine the mitigation measures required to avoid impacts on these species.

Consultations with federal and state agencies are ongoing. A list of the federally- and state-listed species potentially occurring within the full extent of the Project area is provided within Attachment 4. Additional consultation information is provided within Attachment 5.

1.2 PERMIT APPLICATION FORMS AND CHECKLISTS

The completed Joint Permit Application forms and associated USACE and VADEQ Completeness Checklists, as well as the CWA Section 401 Certification Request are enclosed as Attachments 6-9. Please refer to the Table of Contents and list of Attachments for other pertinent information.

1.3 GENERAL CONSTRUCTION INFORMATION

Transco will use conventional techniques for buried pipeline construction to ensure safe, stable, reliable transmission facilities consistent with FERC and U.S. Department of Transportation (USDOT) specifications. Transco proposed a 100-foot-wide construction right-of-way (ROW) or limit of disturbance, for the Eden Loop 42-inch pipelines. This includes 65 feet on the working side, which includes the travel lane, and 35 feet on the spoils side. The proposed 100-foot-wide construction ROW is consistent with the Interstate Natural Gas Association of America's (INGAA's) recommendations for pipelines with diameters of 42 inches. INGAA recommends a ROW width of 125 feet for a 42-inch pipeline. Transco safely designed the construction ROW with a 100-foot construction ROW to minimize and avoid disturbances where practicable. Transco is proposing to collocate the proposed Project within or adjacent to the existing Transco Mainline System to the extent practicable. Approximately 91.5 percent of Eden Loop in Virginia is collocated with existing ROWs. This collocation design will help reduce the overall operational footprint of the Project, minimizing new disturbances to the extent practicable.

Additional temporary workspace (ATWS) outside the standard 100-foot construction ROW will be required at or near roads, railroad, wetland, waterbody, and agricultural land crossings, cathodic protection, and in areas where specialized construction techniques are required (e.g., on steep slopes). The ATWS will be limited to the minimum amount necessary to safely perform construction and be protective of the environment based on site specific conditions. Typical cross sections 13-22 in Attachment 10 illustrate an example of how ATWS can be used during construction. Upon completion of the Project, ATWS areas will be restored to pre-construction conditions as outlined in Transco's Plan and Procedures (Attachment 11). ATWS will typically be

set back 50 feet from the waterbody bank, where practicable. Exceptions to ATWS the 50-foot setbacks may be required when there is limited work area between features such as wetlands, waterbodies, and roads; when additional area is needed for temporary spoil storage to avoid sensitive areas, or because excavated soils are poorly consolidated; or to accommodate the additional workspace required for specialized construction techniques. Please refer to Section 5.2.6 for additional information regarding ATWS.

Transco will use temporary contractor yards for temporary contractor field offices, parking, equipment/pipe/material storage, equipment turn-arounds, and pipe preparation/field assembly areas. The contractor yards will be located at various points in the vicinity of the Project, and in locations with convenient and safe access to the Project components.

Temporary access roads and permanent access roads are necessary to construct and operate the Project facilities. Transco will utilize existing and new roads to access Project workspaces where possible. Temporary access roads will be used during the Project's construction phase and restored to pre-construction conditions following Project completion. Permanent access roads used during construction will be maintained for the life of the respective facility. Temporary access roads will have a typical width of up to 30 feet to provide adequate space for equipment and safe travel, with additional width as needed to support site-specific requirements. Permanent access roads will have a typical width of up to 12 feet, with additional width (up to 30 feet wide) as needed to support site-specific requirements.

There are 6.6 miles of access roads along the Eden Loop in Virginia including one new permanent access road (PAR), 55 feet in length, designated as PAR-VA-MAIN-1405-2 providing permanent access to a mainline valve. There are no stream or wetland impacts associated with this permanent access road. The remaining access roads are temporary and will be restored to pre-existing conditions as specified below and in the Erosion and Sediment Control (E&S) and Stormwater Management (SWM) Plans submitted separately in connection with the VADEQ Additional Upland Conditions for Water Quality Certification.

There are four types of access roads:

- Type 1 – Existing Gravel Road to be maintained. No widening proposed. No best management practices (BMPs) proposed.
- Type 2 – Existing Gravel Road to be widened and then restored to pre-construction width and conditions upon restoration. Perimeter BMPs near wetlands and streams proposed.

- Type 3 – New Temporary Gravel Road to be restored to pre-construction conditions upon restoration. Perimeter BMPs proposed for entire road length.
- Type 4 – Existing Paved Road. No maintenance or BMPs proposed.

The following excerpt from the E&S plans describes the Construction Sequence for Restoration of Type 2 and Type 3 Access Roads:

1. Remove gravel to pre-construction width and condition. Heavy vehicular and foot traffic shall be kept out of all restored pervious area after construction.
2. Spread a minimum of 6-inches of approved compost across the surface and incorporate into the soil using a rototiller, tiller, or subsoiler to a depth of 12-inches. Compost shall be incorporated during dry conditions.
3. Permanent seeding or sodding shall follow immediately upon completion of soil restoration.

The construction ROW width was reduced to 75 feet at wetland and waterbody crossings to the extent practicable. Specialized construction techniques will be utilized in sensitive resource areas where stream and wetland impacts are proposed on the Eden Loop. Limited areas along Eden Loop where Transco determined more than 75 feet of workspace is required in a stream or wetland are listed with detailed justifications in Attachment 12. Additionally, Transco will utilize Transco's Plan and Procedures, Virginia approved erosion and sedimentation control plans and stormwater plans, which include best management practices including but not limited to topsoil segregation and matted travel lanes when crossing wetlands and crossing streams via dry-open cut methods and trenchless technologies. Streams or wetlands on access roads will be matted or bridged to minimize impacts. Refer to Section 5 for additional information on avoidance and minimization of impacts.

Aboveground facilities associated with the project include Compressor Station 165 and mainline valves (MLV). MLV facilities are installed along pipelines to isolate gas flows. There are two proposed MLVs in Virginia which are located along the permanent ROW. Pig launchers/ receivers and communication equipment are often located at the MLVs. Transco designs aboveground facilities to ensure safe, stable, and reliable transmission facilities in accordance with FERC and US DOT requirements. The aboveground facilities will be cleared of vegetation, graded, and compacted, as necessary, to create level surfaces for the movement of construction vehicles on the sites and to prepare the areas for construction. Transco will install appropriate erosion and sediment controls around disturbed areas prior to the start of facility construction to

minimize the potential for erosion and the potential for impacts on off-site wetlands and waterbodies.

Areas disturbed by construction that are not part of the permanent aboveground facilities will be restored following the completion of construction activities as required by applicable agency requirements. ROWs will be restored to approximate pre-construction contours; however, permanent ROWs will be maintained in an herbaceous state for the operational life of the pipeline.

For stream and wetland restoration and revegetation maintenance, a more detailed description is in Section 5.2.7 Restoration of Temporary Wetland impacts and Section 5.2.8 Restoration of Temporary Stream Impacts.

1.4 PROJECT LOCATION

Transco's compressor station 165 is located within Transco Village, Pittsylvania County, Virginia (36.834228° N, -79.336743° W). The Virginia portion of the Eden Loop starts at milepost (MP) 1386.90 in Pittsylvania County, Virginia (36.541636° N, -79.633178° W) and ends at Compression Station 165. A vicinity map of the location and boundary of the proposed project area is enclosed within Attachment 13. The topography is provided in USGS Quad excerpt in Attachment 14.

Directions to Compressor Station 165, 945 Transco Road, Chatham, VA 24531 – the northern terminus of the Eden Loop from the USACE Norfolk District office, 803 Front Street Norfolk, VA 23510 T. Head west on Front Street and turn right onto Botetourt Street. Proceed to Boush Street and turn left. Merge onto I-264 West via the ramp to the Downtown Tunnel/Portsmouth. Continue on I-264 W for approximately 3 miles. Take exit 5 to merge onto I-64 West toward Richmond. Stay on I-64 W for about 85 miles. Take exit 179A to merge onto US-15 South/US-33 East toward Gordonsville. Continue on US-15 S for approximately 30 miles. Turn right onto US-29 South and proceed for about 60 miles. Take the exit toward VA-57 East/Chatham. Turn left onto VA-57 East and continue for approximately 5 miles. Turn right onto Transco Road and proceed for about 1 mile to reach **945 Transco Road, Chatham, VA 24531**.

The portion of the proposed Project subject to Norfolk District review is solely within Pittsylvania County.

1.5 WATERSHED AND HYDROLOGIC UNIT CODES

The watersheds and hydrologic unit codes (HUCs) for the proposed Project crossings included in this permit application are provided in Table 1.1.

Table 1.1: Watersheds Crossed by the Project

Facility	Begin Milepost	End Milepost	Sub-Watershed (12-digit HUC)
Eden Loop	1384.88	1386.77	Cascade Creek (030101030902)
	1386.78	1393.10	Trotters Creek-Dan River (030101030903)
	1393.10	1398.05	Lower Sandy River (030101031003)
	1398.05	1402.04	Sandy Creek-Dan River (030101030907)
	1402.04	1409.70	White Oak Creek-Banister River (030101050103)
	1409.70	1413.17	Cherrystone Creek (030101050104)
	1413.17	1413.28	Shockoe Creek-Banister River (030101050203)
Source: USGS 2023b			

1.6 PROPERTY OWNERS

The names and addresses of the intersecting and adjacent property owners are enclosed within Attachment 15. The riparian property owners within ½-mile downstream of proposed impacts to WOTUS resources are enclosed within Attachment 16.

1.7 PROJECT AUTHORIZATIONS

A table depicting all the anticipated authorizations required by federal and state agencies for the entirety of SSE is enclosed within Attachment 17.

2 PURPOSE AND NEED

2.1 BASIC PROJECT PURPOSE

The Project's basic purpose is to expand Transco's existing natural gas transmission system to enable Transco to provide additional natural gas in the Southeast. The Project is not water dependent.

2.2 OVERALL PROJECT PURPOSE AND NEED

This section discusses the purpose and need for the entire Project and is not limited to the facilities located in Virginia. Transco proposes to construct and operate the Project to provide an incremental 1,596,900 Dth/d of year-round firm transportation capacity from Transco's existing

Station 165 Zone 5 Pooling Point and the Cherrystone Interconnect with Mountain Valley Pipeline located near MP 1413.0 in Pittsylvania County, Virginia to growing natural gas markets in the southeastern United States. The Project capacity would be provided along five paths:

- 1,500 Dth/d originating from Transco's Station 165 Zone 5 Pooling Point and the Cherrystone Interconnect with Mountain Valley Pipeline to Transco's existing Danville Meter Station located near MP 1393.33 in Pittsylvania County, VA;
- 5,000 Dth/d originating from Transco's Station 165 Zone 5 Pooling Point and the Cherrystone Interconnect with Mountain Valley Pipeline to Transco's existing Martinsville Meter Station located near MP 1389.25 in Pittsylvania County, VA;
- 300,000 Dth/d originating from Transco's Station 165 Zone 5 Pooling Point and the Cherrystone Interconnect with Mountain Valley Pipeline to Transco's existing Eden Meter Station near MP 1382.5, Transco's existing Dan River #2 Meter Station located near MP 1382.7, and Transco's existing Cardinal Meter Station near MP 1369.44, all in Rockingham County, NC;
- 2,000 Dth/d originating from Transco's Station 165 Zone 5 Pooling Point and the Cherrystone Interconnect with Mountain Valley Pipeline to Transco's existing Reidsville Meter Station located near MP 1377.73 in Rockingham County, NC; and
- 1,288,400 Dth/d originating from Transco's Station 165 Zone 5 Pooling Point and the Cherrystone Interconnect with Mountain Valley Pipeline to Transco's existing Station 85 Zone 4 Pooling Point located near MP 784.7 in Choctaw County, AL.

As a result of Transco's negotiations with shippers and Transco's open season for the Project that was held from June 19, 2023, through July 14, 2023, Transco has executed long-term, binding precedent agreements with multiple shippers for the full 1,596,900 Dth/d of firm transportation capacity under the Project (as detailed in Table 2.1).

Table 2.1: Transco's Customers and Transportation Capacity Subscribed to the Project

Shipper	Transportation Contract Quantity (Dth/d)	End Use
Duke Energy Carolinas, LLC	1,000,000	Power Generation
Southern Company Services, Inc.	400,000	Power Generation
South Carolina Public Service Authority	80,000	Power Generation
Atlanta Gas Light Company	75,000	Local Distribution
Patriots Energy Group	14,000	Local Distribution
Greer Commission of Public Works	10,000	Local Distribution
The City of Fountain Inn	2,400	Local Distribution
Municipal Gas Authority of Georgia	2,000	Local Distribution
City of Wilson	2,000	Local Distribution
City of Danville	1,500	Local Distribution
Fort Hill Natural Gas Authority	5,000	Local Distribution
Southwest Virginia Natural Gas	5,000	Local Distribution
Total	**1,596,900**	-

Key:
Dth/d = Dekatherms per day

3 ANALYSIS OF PRACTICABLE ALTERNATIVES

This alternatives analysis is provided to meet the requirements of Section 404(b)(1) of the CWA and similar provisions of Virginia law. It evaluates practicable alternatives to the proposed Project with the goal of identifying the least environmentally damaging practicable alternative (LEDPA), as required by USACE and VADEQ.

While the Project is also under review by the FERC pursuant to the National Environmental Policy Act (NEPA), this analysis supplements the alternatives considered in the Environmental Assessment (EA) being prepared by FERC to address the specific avoidance and minimization criteria applicable under the CWA. The EA is anticipated to be released for public comment in November 2025.

No practicable alternatives to the proposed Project would be less environmentally damaging under the Section 404(b)(1) Guidelines as further outlined below. The term practicable means “available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes” (40 CFR 230.3(l)).

3.1 NO-ACTION (NO BUILD) ALTERNATIVE

Under the No Action Alternative, the Project would not be constructed or operated. The potential environmental impacts of construction and operation of the Project would not occur; however, this alternative would not meet the energy demands, reliability, and flexibility objectives for the Project as discussed further below and this alternative would not satisfy the Purpose and Need of the Project.

Transco considered an energy conservation alternative under the no action alternative. The goal of energy conservation is to take steps toward the reduction of energy consumption to preserve resources and reduce environmental pollution. Federal and state authorities advocate energy conservation, and agency programs are in place to encourage large-scale energy conservation.

The Energy Policy and Conservation Act (the EPCA), as amended, partly guides federal energy conservation efforts. Title III of the EPCA outlines energy efficiency programs such as the ENERGY STAR labeling system for consumer products, incentives for states that enact energy conservation plans, and grants for industrial facilities that implement recoverable waste energy programs. The EPCA, as amended, establishes energy efficiency standards for building codes and provides incentives for upgrading existing buildings.

As of March 2023, the United States Energy Information Administration projects that the total United States domestic energy consumption will increase as much as 15 percent from 2022 to 2050 (EIA 2023a). The concept of energy conservation is to use fewer nonrenewable natural resources and increase efficiencies to conserve energy being consumed. Energy conservation measures alone cannot offset the short-term and long-term growth in natural gas demand within the United States. Additionally, Project shippers have stated energy demand needed for the Project, which energy conservation would not meet. Therefore, energy conservation is not a viable alternative to the Project.

Under the No Action Alternative, the purpose and need for the Project would not be met, and Transco would not be able to provide 1,596,900 dekatherms per day of incremental firm transportation capacity to the southeast United States. In addition, the No-Action Alternative would not alleviate the constrained takeaway capacity from the Marcellus and Utica Shale production areas, from which the Project would transport gas, and support the overall reliability and diversification of energy infrastructure in the southeast.

The development and implementation of additional conservation measures may have some effect on energy demand; however, energy conservation efforts alone are not expected to eliminate the need for the Project in the short- or long-term.

The No Action Alternative would force Project shippers to seek other transportation services and/or depend on other future development projects with unpredictable schedules and undetermined environmental impacts. Shippers' ability to dispatch load following energy generation becomes increasingly at risk under the no action alternative.

3.2 NO ACTION (NO PERMIT) ALTERNATIVE

Transco considered a No Action (No Permit) alternative to the Project. Under the No Action (No Permit) alternative, the proposed Project would fully avoid all impacts to jurisdictional wetlands and other WOTUS. In this alternative, the Applicant would need to reroute, bridge or bore the pipeline at each resource. Under this alternative, Transco would not seek authorization from USACE or applicable state agencies for stream or wetland impacts. Due to the linear nature of the Project, Transco's existing pipeline that provides an existing ROW, and technical and financial considerations related to bridging or trenchless crossings of every stream or wetland, this alternative is determined not to be practicable.

3.3 ALTERNATIVE ENERGY SOURCES

Transco evaluated the potential for other energy sources to meet the objectives of the Project. Energy sources were separated into two broad categories: renewable sources (biofuel/biomass, hydroelectric, solar, tidal, and wind) and other energy sources (coal, nuclear, and oil). Alternative energy sources must meet four criteria to be a viable alternative:

- Capable of providing the equivalent energy supplied by the 1,596,900 Dth/d of natural gas to the markets to be served by the Project
- Able to meet the criteria above with an environmentally superior alternative relative to the Project facilities
- Provide service in accordance with the Project schedule
- Have commercial viability.

3.3.1 Renewable Energy Sources

Renewable energy sources are not reasonable alternatives to the Project facilities. Wind and solar energy sources cannot provide the reliable dispatch of load following energy generation that natural gas can provide, nor can they be made available at the scale necessary to meet customer's required demand. As such, non-dispatchable wind and solar are not viable alternatives to the Project by the customers' requested in-service date. Hydroelectric energy sources likewise are not potential alternatives as they are limited to local availability and hydroelectric plants' output are affected by seasonal variations in water supply. In addition, current battery storage technology has a limited ability to work in conjunction with renewable energy sources to mitigate, to an extent, power availability when the wind is not blowing, and the sun is not shining. In most U.S. markets today, batteries primarily operate in ancillary service markets and are under 4 hours in duration[5]. According to the latest data from the U.S. Energy Information Administration, the average duration of large-scale battery storage installed in the U.S. in 2022 was only 2.3 hours[6]. As the growth of renewables accelerates and fossil fuels generation retirements throughout the US advance, clean, reliable, firm, dispatchable energy will be of critical importance.

The economic viability of battery storage is a major limiting factor for the advancement of the energy storage industry. A hypothetical 24-hour Li-ion battery would likely be cost-prohibitive[6]. According to S&P Global Commodity Insights, a 24-hour duration battery is estimated to cost ~$5,000/kilowatt (kW) in 2030 compared to the 4-hour duration battery which is estimated to cost ~$1,000/kW in 2030[6]. Another limitation to adequate battery storage to meet the power grid reliability needs of the future is sourcing raw materials used in battery manufacturing. According to research by McKinsey & Company, by 2030, Li-ion battery demand is expected to grow by 27 percent annually[7]. Given the challenges described above, renewable energy sources, even when paired with battery storage, cannot reliably meet customer demands through periods of extended weather events or twenty-four (24) hour demand loads. Although renewables contribute to power generation, they do not provide the reliable and readily available energy source demanded by the Project shippers.

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[5] *Source: S&P Global Commodity Insights © 2024*

[6] *Source: U.S. Energy Information Administration (EIA)*

[7] *Source: McKinsey & Company*

Regarding renewable alternatives, Transco notes that 93 percent of the subscribed capacity is intended for power generation. Importantly, those power generators have a large power generation portfolio that does include renewable resources. Natural gas-fired power plants, like those that would be supplied with gas from the Project, have higher availability than intermittent renewable power generators, which rely on the presence of sunlight and wind. There is a misconception that these natural gas plants are providing capacity that otherwise could be provided by renewable resources; however, that conclusion does not consider the availability demands of the power generators. In actuality, because the natural gas-fired plants increase the amount of non-intermittent generation, they enable utilities to add more intermittent renewable power generation to their portfolio as utilities balance availability concerns. These generation types, natural gas-fired and intermittent renewables, are complementary to each other. The Project shippers have assessed their own power generation portfolios, which again includes natural gas-fired power plants and renewable sources, amongst others. The Project will enable its shippers to fuel natural gas-fired power plants as a part of the shippers' "all of the above" power generation portfolio. Transco's shippers have considered the amount of renewables in their power generation portfolio that allow them to achieve load growth, cost, and availability requirements.

3.3.2 Traditional Fuel Sources

3.3.2.1 Coal

In 2022, coal-fired power plants in the United States had the capacity to generate approximately 205 gigawatts (GW) and accounted for approximately 10 percent of the nation’s total primary energy consumption (EIA 2023a, 2023b, and 2023c). The EIA projects that coal-fired generation will decline sharply by 2030 to about 50 percent of current levels, followed by a more gradual decline thereafter. The EIA projects between 23 GW and 103 GW of coal-fired capacity operating in 2050 (EIA 2023a).

While coal could be an option for serving the energy needs of certain power generation customers under the Project, use of coal would result in greater environmental impacts. Coal is not as clean burning or efficient as natural gas. Combustion of coal for energy production emits more criteria pollutants (e.g., sulfur dioxide, nitrogen oxide, carbon monoxide, and particulate matter) and greenhouse gases (e.g., carbon dioxide) than combustion of natural gas. Such pollutants are considered a major contributor to acid rain and climate change, which is causing ecological and economic consequences. Moreover, increased use of coal would result in

additional environmental impacts associated with the mining and transportation of coal, and disposal of coal ash.

The relative environmental benefits and efficiency of natural gas make it an attractive alternative to coal-fired generation. Further, natural gas provides energy for a growing residential heating market in the Project's service area, which cannot be directly replaced by coal. Finally, regulatory guidelines for carbon emissions do not favor an expansion of coal-fired power plants, and natural gas is a preferred fuel to offset coal use in producing electricity. Therefore, coal does not represent a viable alternative for replacing the incremental natural gas to be transported by the Project.

3.3.2.2 Oil (Petroleum)

In 2022, liquid petroleum supplies approximately 35 percent of the total energy consumed in the United States, but this is predominantly consumed by the transportation sector, which is not a market that is driving the current demand for natural gas (EIA 2023b and 2023c). A substantial portion of petroleum is also used in the industrial sector (including feedstock) at levels that are less than natural gas consumption in this sector. Oil provides approximately 5 percent of the energy consumed by the residential sector nationwide (primarily heating) (EIA 2023b). While domestic consumption of petroleum is projected to remain relatively stable, it is possible that any increases in the domestic petroleum supply, such as lower costs, could offset and reduce the demand for natural gas at industrial facilities in the Project's service area, but it is unlikely that oil could meet the growing demand for natural gas in the residential sector. While existing oil-fired generators have the capacity to supplement electricity needs during periods of peak demand, it is unlikely that fuel oil could significantly offset the increasing demand for natural gas at power plants given that oil currently only supplies approximately 0.5 percent of the electric power in the United States (EIA 2023b).

Increased use of fuel oil would result in environmental impacts associated with transportation and the burning of petroleum products. In terms of transportation, these impacts may include increased vessel traffic and risk of in-water oil spills for product transported by ship or additional petroleum pipeline facilities that would have similar or greater impacts as the proposed Project. Therefore, oil is not a suitable alternative to the Project.

3.3.2.3 Nuclear Energy

Nuclear energy development is an option that may be considered environmentally viable, particularly in terms of limiting air emissions of criteria pollutants. However, this alternative has drawbacks, specifically negative public perception concerning safety risks, and the long-term environmental impacts associated with the disposal of radioactive waste products. As a result, an unfavorable regulatory climate exists, and the probability of a new nuclear facility coming online in a timely manner to serve energy demands is low. Moreover, the time required to design, permit, and construct a nuclear generation facility would be extensive and significantly greater than the time required to design, permit, and construct the Project. Although NC, SC, GA, and AL are among the nation's leading nuclear power-producing states and nuclear energy is VA and SC's largest energy resource, the EIA projects total nuclear electric generating capacity to decline (EIA 2023a, 2023d, 2023e, 2023f, 2023g, and 2023h). Natural gas and nuclear power accounted for the majority of VA's total in-state electricity net generation in 2021, with natural gas fueling the largest share (EIA 2023d). Over the past decade in NC, the contribution of natural gas-fired generation has increased as electric utilities have added natural gas-fired power plants. Subsequently, natural gas provided slightly more generation than nuclear power in NC in 2021 (EIA 2023e). Nuclear energy is the leading source of electricity generation in SC and produced 54 percent of total in-state electricity in 2021. SC ranks third in the nation in nuclear power generating capacity; however, total natural gas consumption has nearly doubled in the last decade in SC (EIA 2023f). Natural gas and nuclear power fuel almost three-fourths of GA's total in-state electricity net generation; however, natural gas accounts for almost half of the state's net generation (EIA 2023g). Although one of AL's nuclear power plants has the second-largest generating capacity of any nuclear power plant in the United States, natural gas has fueled the largest share of electricity in AL since 2014 and accounted for 43 percent of the state's net generation in 2022 (EIA 2023h). Consequently, the nuclear alternative would not be available to meet market demands.

3.3.2.4 Energy Source Alternatives Conclusion

Following a review of energy source alternatives, Transco identified no other energy sources that meet the objectives of the Project and satisfy the increased demand for natural gas in the service territory. Electrical energy produced by traditional energy sources, such as coal-fired plants or nuclear plants, is not a viable alternative. Primarily because of environmental concerns, the capacity of these energy sources is not increasing, and the timeline to permit new

facilities is not expected to be sufficient to meet the projected energy demand in the service territory within the timeframe proposed. It is unlikely that the current demand for natural gas could be satisfied by increases in fuel oil, and the increased use of oil would result in the environmental impacts associated with processing, transporting, and burning the fuel. Therefore, increasing the use of fuel oil to meet the projected energy demand in the service territory would not be viable.

Renewable sources do not satisfy the purpose and need of this Project. Wind and solar sources, even when equipped with current battery backup technology, cannot provide the reliable dispatch of load following generation and cannot be available at the scale necessary to meet demand by the Project's in-service date. In addition, in-home natural gas energy systems would require conversion for the delivery and use of the electricity generated by the alternative energy sources discussed above. For these reasons, other traditional and renewable energy sources are not considered viable alternatives to satisfying the Project's purpose and need.

3.4 NATURAL GAS TRANSPORTATION ALTERNATIVES

Transco considered natural gas transportation alternatives, including truck and trailer and rail transportation. To match the peak flow rate of the proposed project, shipping gas via truck would result in 230 truckloads per hour or 4 trucks per minute. Rail transportation of natural gas is typically done with the natural gas in a liquified state. A liquified natural gas (LNG) plant would need to be constructed as well as rail spurs to every delivery meter, increasing the Project footprint and impacts to resources. Truck and rail transportation are not as reliable nor as safe as transportation by pipeline. Transco considers this alternative as not practicable.

3.5 SYSTEM ALTERNATIVES

System alternatives are alternatives to the proposed Project that would make use of other existing, modified, or proposed pipeline systems to meet the purpose and need of the Project. A system alternative would make it unnecessary to construct all or part of the Project, although some modifications or additions to another existing pipeline system may be required to increase its capacity, or another entirely new system may need to be constructed. System alternatives involving modifications or additional system facilities would also result in environmental impacts. To be a viable system alternative to the proposed Project, potential system alternatives must meet three criteria:

- The system must be capable of providing the equivalent energy supplied by the 1,596,900

Dth/d of natural gas to the markets to be served by the Project;

- The system alternative must be capable of transporting the required volumes within the same schedule as the Project.
- Use of an alternative system must be able to meet the criteria above and at the same time result in reduced environmental impacts when compared to the Project facilities.

3.5.1 Existing Pipeline Systems

Transco owns and operates its Mainline System within the Project area. Transco's existing system does not have available unsubscribed capacity to service the volume under contract for the Project. Therefore, Transco's system is currently constrained in Zones 4 and 5 between Alabama and Virginia and incapable of providing 1,596,900 Dth/d of incremental firm transportation capacity to meet the growing demand for clean, reliable natural gas in the southeast United States. SSE offers a path along the existing Transco Mainline System, providing shippers with access to existing markets along Transco's corridor. In general, there are no system alternatives that can replicate this offering in whole.

As part of this alternative, Transco evaluated the Mountain Valley Pipeline (MVP) Southgate (Southgate) Project to determine if it could be considered as an alternative to SSE. Transco also evaluated compression and looping alternatives within the Transco system that could meet the objectives of the Project.

3.5.2 Proposed Pipeline Systems Alternatives

Transco evaluated the MVP Southgate project as an alternative to SSE. Transco understands that Southgate would transport 550,000 Dth/d of gas supply from Transco's Station 165 pool to new interconnects with Public Service Company of North Carolina (PSNC) and Duke Energy Carolinas (Duke) near Transco MPs 1382.7 and 1382.5, respectively. The proposed Southgate scope includes 31 miles of 30-inch pipe collocated with the existing Transco Mainline System. Notably, Transco's proposed 42-inch Eden Loop, a component of the SSE Project, also originates at Transco's Station 165 pool and extends south to Transco's existing Duke Eden Meter Station near MP 1382.5.

An alternative single 30-inch pipeline is not hydraulicly capable of transporting the 1,596,900 Dth/d currently subscribed to the SSE Project on top of the 550,000 Dth/d subscribed to the Southgate project. Therefore, although Southgate is in the same general area as SSE's Eden Loop, Southgate is not a viable alternative to the Eden Loop due to its hydraulic limitations.

Furthermore, Southgate would not be able to replicate the broader SSE Project path, which leverages the existing Transco system and extends southbound to the Transco Station 85 pool in Choctaw County, AL. Therefore, the Southgate Project is not a viable LEDPA to SSE, in whole or in part.

3.5.3 Loop-Intensive System Alternatives

Transco identified a loop-intensive system alternative in lieu of installing additional HP at compressor station 165. The loop-intensive alternative would utilize pipeline looping along the existing Transco Mainline System assets to meet the Project capacity demand. The loop-intensive system alternative is described below. For the purposes of this comparison, Transco assumed the alternative would be fully collocated with the existing Mainline System ROW. Note that the distance between beginning and ending MPs may not reflect the actual length of the potential loop; the length of the loop is based on the distance between MPs along existing pipelines. Thus, crossover or variations of the pipeline loop would lengthen the mileage when compared to the existing pipelines and MPs. Under the loop-intensive alternative, the remaining proposed Project facilities would still be required to meet the Project's purpose and need, unless otherwise noted.

Transco considered a loop-intensive alternative that would eliminate the need to modify (i.e. install additional HP) Compressor Station 165. To deliver the Project volumes and achieve Transco's pressure commitment to customers, without incremental compression at Compressor Station 165, Transco would need to install the following pipeline loops:

- Installation of Eden Loop, as currently proposed;
- Installation of 30.46 miles of 42-inch-diameter mainline 'F' loop from MP 1382.53 to 1412.99 between existing Compressor Station 160 and existing Compressor Station 165; and
- Installation of 30.46 miles of 42-inch-diameter mainline 'G' loop from MP 1382.53 to 1412.99 between existing Compressor Station 160 to existing Compressor Station 165.

As noted above, the looping-intensive alternative to Compressor Station 165 would require the construction of the Eden Loop pipeline and two additional pipelines (mainline 'F' loop and mainline 'G' loop) immediately adjacent to Eden Loop. Construction of the 'F' & 'G' loops would result in two additional crossings of each impacted stream and wetland, based on desktop

analysis. Furthermore, more impacts on sensitive species and cultural resources would be expected to occur with construction of the loop-intensive alternative. Construction of the additional 60.92 miles of looping would impact approximately 184.6 acres during construction and operation due to the requirement of 50 additional feet of workspace. This estimate assumes that the pipelines would be located immediately adjacent to the existing Transco Mainline System, which would be unlikely due to existing development surrounding the existing Transco pipelines. Additional landowners, and additional construction and operational workspace would be required in instances where collocation would not be feasible. Based on significantly greater land requirements, corresponding environmental impacts, and substantial number of landowners affected by construction and operation, the loop-intensive alternative to Compressor Station 165 was eliminated from further consideration. Therefore, this alternative is not the LEDPA.

3.5.4 Compression-Intensive System Alternatives

Transco identified compression-intensive system alternatives in lieu of installing the proposed Eden Loop. The compression-intensive alternative would utilize additional compression along the existing Transco Mainline System assets to meet the Project capacity demand. The compression-intensive system alternative is described below. Under the compression-intensive alternative, the remaining proposed Project facilities would still be required to meet the Project's purpose and need, unless otherwise noted.

3.5.4.1 Compression-Intensive Alternative to Eden Loop

The maximum allowable operating pressure (MAOP) is the highest pressure at which a gas or liquid pipeline system may be operated, according to the applicable regulations. The MAOP is determined based on the diameter of pipe, grade of pipe (wall thickness/ material type).

It is a critical safety factor, ensuring pipelines don't exceed their designed pressure limits. The USDOT regulates MAOP for pipelines, setting standards for their operation. Transco's existing pipelines have an MAOP regulated by DOT set at 780 pounds per square inch gauge (psig). The capacity of gas required to meet the purpose and need of the SSE project cannot be fulfilled through the existing pipelines because it would exceed the MAOP of the existing lines. Transco evaluated a compression intensive alternative to the Eden and Salems loop which would also result in exceedance of the MAOP of the existing pipelines.

Transco evaluated the possibility of a compression-intensive system alternative in lieu of installing the Eden Loop pipeline. Without the Eden Loop, the suction pressure at the existing Compressor Station 160 would be below the minimum suction pressure required to keep the existing Compressor Station 160 online. The southbound design discharge pressure coming out of Compressor Station 165 is already at the MAOP of the existing Transco mainlines (780 psig). Without the Eden Loop, which is designed for 1,480 psig MAOP, additional compression does not yield additional throughput because the station discharge remains limited by the 780 psig MAOP of the existing Transco mainlines. Additionally, Transco has customer pressure commitments at its existing Eden and PSNC Dan River Meter Stations that are not achievable without the Eden Loop. Therefore, no viable compression- intensive alternatives exist or were further considered for the Eden Loop.

3.5.5 Pipeline Design Systems Alternatives

Transco assessed the feasibility of replacing its 30-inch Mainline A along the Eden Loop segment with a 42-inch diameter pipeline, in lieu of constructing the proposed Eden Loop offset from the existing mainlines. To install the 42-inch replacement in the same trench as the existing Mainline A, Transco would first have to abandon and remove Mainline A. Because this area of the Transco system is fully subscribed and utilized, Transco would not be able to meet existing firm contract commitments if Mainline A was removed from service. This reduction in capacity would likely last for 10 to 12 months, from the moment Mainline A would be isolated and prepared for removal through the commissioning of the 42-inch replacement.

If Transco were to construct the Eden Loop and place it into service in a new trench prior to abandoning Mainline A, it would not achieve the same reduction in permanent footprint that this alternative seeks to achieve. Furthermore, if the proposed Eden Loop was to ship the combined volumes of Mainline A's capacity and the SSE Project volumes, additional scope would need to be added to SSE Project. Additional compression scope would include one 30,000 HP EMD at Transco Compressor Station 165 and one Solar Taurus 60 turbine (7,800 ISO HP) at Compressor Station 160, which was previously unaffected.

3.6 PIPELINE ROUTE ALTERNATIVES

Transco conducted a detailed hydraulic analysis to determine the necessary pipeline locations, lengths, and diameters to meet the Project purpose and need. Based on the results,

Transco determined that the Project would require the construction of the 42-inch-diameter Eden Loop. Transco designed the proposed pipeline route to collocate with Transco's existing Mainline System to the extent practicable to minimize impacts to landowners and environmental resources. During the routing process, Transco evaluated trenchless construction methods and identified locations where it was necessary to deviate from collocating the proposed pipeline to minimize impacts to a resource(s), comply with regulations, and/or allow for constructability but still allow Transco to meet the need of the Project.

Collocation of the proposed SSE pipeline within or adjacent to the existing Transco Mainline System is critical to reduce the overall operational footprint of the project and avoid and minimize impact on adjacent landowners, natural resources including streams and wetlands, and cultural resources. Therefore, Transco determined that in most cases a route that substantially deviates from the existing ROW could result in increased environmental impacts. Collocation was achieved on 91.5 percent of the route in Virginia. The proposed pipeline is collocated with Transco's existing Mainline System to the extent practicable and in these areas would generally require up to a 25-foot-wide permanent ROW expansion; therefore, Transco has considered several route alternatives for the pipeline, which are described below and depicted on mapping in Attachment 18.

3.6.1 MP1388.30

The alternative between approximate MP 1388.26 and ending at 1388.40 is a route that was previously filed with FERC that would not be collocated with Transco's existing Mainline System. Although the proposed route crosses an additional stream L130-1, there is a reduction in wetland impacts. Additionally, the proposed route provides the opportunity for more collocation with Transco's existing Mainline System minimizing the amount of permanent ROW required for the project. Table 3.1 provides a comparison of environmental impacts between the proposed route and the alternative. The proposed route was not entirely collocated to avoid impacts to wetland W340-VA.

Table 3.1: Alternative Comparison MP 1388.40

Factor	Proposed Pipeline[a]	Alternative Pipeline[a]	Difference between Proposed Pipeline and Alternative Pipeline[a]
Pipeline			
Length of Corresponding Segment (miles)[b]	0.27	0.28	-0.01
Construction ROW			
Route Corridor/Limits of Disturbance (acres)	5.28	4.46	0.82
Waterbodies (linear feet)			
Ephemeral	0	0	0
Intermittent	112	35	77
Perennial	81	78	3
Total Stream Impacts (linear footage within ROW)	193	113	80
Wetland Impacts (acres)			
PEM (acres within the ROW)	0.17	0.2	-0.03
PFO (acres within the ROW)	0	0	0
PSS (acres within the ROW)	0	0	0
POW (acres within the ROW)	0	0	0
Total Wetland Impacts (acres within the ROW)	0.17	0.2	-0.03

Notes:

[a] Pipeline construction requirements used to compare alternatives were based on the proposed route and its associated construction right-of-way (ROW). For the proposed route, Transco plans to use a 100-foot-wide construction ROW, with additional temporary workspace where needed. Within streams and wetlands, Transco proposes reducing the ROW to 75 feet, where practicable. For the conceptual alternative, a 75-foot-wide construction ROW was assumed for comparison purposes; however, detailed ROW design and workspace needs were not developed. Therefore, acreage estimates for the alternative are not provided as a direct comparison with the proposed route cannot be made.

[b] Difference from MP to MP may not sum exactly due to MPs being based on Transco's Mainline System MPs. Length of pipeline as measured in geographic information systems.

3.6.2 MP 1390.10

The alternative between approximate MP 1390.03 and ending at 1390.15 would be collocated with Transco's existing Mainline System and was considered to evaluate opportunities for collocation, consistent with efforts to minimize the development of new disturbance corridors. However, the proposed route was selected over the alternative due to environmental and engineering constraints. Specifically, the proposed alignment avoids paralleling a stream within proximity of the ditch line and the associated complexity and long-term risks of installing a pipeline adjacent to a parallel waterbody. This proposed route was selected prior to developing a workspace for the collocated center line; thus no comparison table is provided for this route.

3.6.3 MP 1404.80

The alternative between approximate MP1404.69 and approximate MP 1404.82 would be collocated with Transco's existing Mainline System and was considered to evaluate opportunities for collocation consistent with efforts to minimize the development of new disturbance corridors. Although the collocated route would minimize the need for additional permanent ROW, it would

also require crossing a portion of the pond's dam. This would require dewatering impacts to the whole pond during construction and could lead to concerns about the integrity of the dam. The proposed route crosses through the middle of the pond with bladder dams and or sheet piling creating a crossing though the pond while leaving unaffected open water on both the upstream side and downstream side of the pond crossing for the relocation of fish and other aquatic species. A bathymetric study was performed on the pond to assess the feasibility of this crossing. The pump around plan can be found on sheet 56 of the plan views in Attachment 18.

Please note, a shift of the pipeline to the opposite side of the existing Transco mainlines is constrained by another proposed project. Table 3.2 provides a comparison of environmental impacts between the proposed route and the alternative. To limit the activities within the pond, Transco has included workspace for a travel lane along the existing ROW for construction access.

Table 3.2: Alternative Comparison MP 1404.80

Factor	Proposed Pipeline[a]	Alternative Pipeline[a]	Difference between Proposed Pipeline and Alternative Pipeline[a]
Pipeline			
Length of Corresponding Segment (miles)[b]	0.18	0.16	0.02
Construction ROW			
Route Corridor/Limits of Disturbance (acres)	3.7	2.52	1.18
Waterbodies (linear feet)			
Ephemeral	0	0	0
Intermittent	0	0	0
Perennial	18	51	-33
Total Stream Impacts (linear footage within ROW)	18	51	-33
Wetland Impacts (acres)			
PEM (acres within the ROW)	0.06	0	0.06
PFO (acres within the ROW)	0	0	0
PSS (acres within the ROW)	0.01	0	0.01
POW (acres within the ROW)[c]	0.54	0.13	0.41
Total Wetland Impacts (acres within the ROW)	0.61	0.13	0.48

Notes:

[a] Pipeline construction requirements used to compare alternatives were based on the proposed route and its associated construction right-of-way (ROW). For the proposed route, Transco plans to use a 100-foot-wide construction ROW, with additional temporary workspace where needed. Within streams and wetlands, Transco proposes reducing the ROW to 75 feet, where practicable.

[b] Difference from MP to MP may not sum exactly due to MPs being based on Transco's Mainline System MPs. Length of pipeline as measured in geographic information systems.

[c] Acres of POW impact within the table reflect only the portions of the pond within the limits of disturbance. As a conservative measure Transco assumed the entire POW impacts to the pond (.95 acres) to be dewatered for the proposed pipeline route as shown in Table 4.2 . However, Transco does not anticipate a full dewatering of the pond for the proposed route construction in comparison to the alternative pipeline route where the entire pond would need to be dewatered to facilitate construction due to direct impacts to the dam.

3.6.4 MP 1407.30 Banister River Route

Many routing alternatives were considered between approximate MP 1407.30 and approximate MP 1409.70. This area requires consideration of many factors including but not limited to; the Norfolk Southern Railroad, the Banister River, White Oak Creek, wetlands, a pond, a storage facility, residential areas, other easements and overhead power lines, as well as Highway 29. The evaluated alternatives are depicted in Attachment 18 along with the associated impact estimates and further described below. As summarized below, the proposed route is the LEDPA.

Proposed Eden Loop Route (Pink): This is the proposed route for the Eden Loop and would not be collocated with Transco's Mainline System. This route would allow for a more feasible crossing of Highway 29 as well as avoid impacting a congested residential and commercial business area near Woodlawn Academy Road. It also avoids working near the dam of one pond and impacting another. In addition, the proposed route provides a more logistically feasible HDD crossing of the Banister River. The HDD crossing on this route is shorter in length by approximately 566 feet which reduces the duration of construction and thus minimizes the risk of complications. This route does not have a significant difference in the HDD fluid equilibrium between the entry and exit points limiting concerns related to dry hole conditions. Dry hole conditions require the use of additional equipment to mitigate the risk of equipment damage and hole instability.

The proposed route has significantly less stream and wetland impacts than route alternative 1, more wetland impacts than route alternative 2, and slightly less stream impacts than route alternative 3. Although the proposed route has more wetland impacts, it avoids the constraints and complications associated with construction of alternative route 2. Therefore, given the logistical concerns noted above, the proposed route is the LEDPA.

Route Alternative 1 (Orange): Beginning at approximate MP 1407.35, this alternative is located southeast of the proposed route and rejoins at approximate MP 1407.95. This route was the early concept route, submitted in the FERC prefiling, utilizing a dam and pump crossing of the Banister River. This alternative would be partially collocated with Transco's Mainline system and the route would allow for a perpendicular crossing of the Banister River. This alternative route proposes impacts to the Banister River and given the expected larger impacts to other jurisdictional resources, it would not be the LEDPA. In addition to the need for a dam and pump

of Banister River and increased wetland impacts in comparison to the proposed route, the alternative was considered impracticable due to landowner concerns and a challenging crossing of Highway 29. The Highway 29 crossing is constrained by topography and existing structures. Specifically, it would require deep engineered bore pits in order to cross the highway, requiring additional safety measures and considerations. The northeast side of Highway 29 would be difficult to cross because it is highly congested. There are multiple residences on one side of the ROW and a storage complex on the other, severely limiting workspace. Additionally, this route would result in workspace situated in residential landowners' front lawns for several months as well as consistent daily construction activities for several weeks while the road bore is being completed. In addition to the development constraints, an overhead powerline crosses the workspace where the bore exit would be located, adding safety concerns to the overall logistical and constructability issues of the area. Therefore, this route is not practicable due to logistics and is not the LEDPA.

Route Alternative 2 (Red): This alternative is the formerly proposed route filed with FERC partially collocated with the existing Transco mainlines and included an HDD of the Banister River. Based on field surveys and desktop analysis, the formerly proposed route would decrease impacts to forests and wetlands and avoid a crossing of White Oak Creek; however, this route is considered impracticable due to landowner concerns and challenging crossing of Highway 29. The Highway 29 crossing is constrained by topography and existing structures. Specifically, it would have required deep engineered bore pits to cross the highway, requiring additional safety measures and considerations. The northeast side of Highway 29 would be difficult to cross because it is highly congested. There are multiple residences on one side of the ROW and a storage complex on the other, severely limiting workspace. Additionally, it would result in workspace situated in residential landowners' front lawns for several months as well as consistent daily construction activities for several weeks while the road bore is being completed. In addition to the development constraints, an overhead powerline crosses the workspace where the bore exit would be located, adding safety concerns to the overall logistical and constructability issues of the area. Therefore, due to the logistic constraints mentioned above, this is not a practicable alternative and thus is not the LEDPA.

Route Alternative 3 (Green): This alternative follows the proposed route but deviates north at the exit of the Banister River HDD at a gentler angle than the proposed route. However, this alternative temporarily impacts 23 more linear feet of stream than the proposed route.

Additionally, the proposed route is preferred by the landowner in comparison to this alternative. Therefore, this alternative is not the LEDPA.

3.6.5 MP 1412.40

The alternative between approximate MP 1412.30 and approximate MP 1412.42 would be collocated with Transco's existing Mainline System and was considered to evaluate opportunities for collocation, consistent with efforts to minimize the development of new disturbance corridors. However, the proposed route was selected over the alternative due to environmental and engineering constraints. Specifically, the proposed alignment avoids paralleling a stream within proximity of the trench line and the associated complexity and long-term risks of installing a pipeline adjacent to a parallel waterbody (L122-VA). Table 3.3 provides a comparison of environmental impacts between the proposed route and the alternative.

Table 3.3: Alternative Comparison MP 1412.40

Factor	Proposed Pipeline[a]	Alternative Pipeline[a]	Difference between Proposed Pipeline and Alternative Pipeline[a]
Pipeline			
Length of Corresponding Segment (miles)[b]	0.13	0.13	0
Construction ROW			
Route Corridor/Limits of Disturbance (acres)	1.5	1.42	0.08
Waterbodies (linear feet)			
Ephemeral	0	0	0
Intermittent	137.88	303.45	-165.57
Perennial	84.86	172.43	-87.57
Total Stream Impacts (linear footage within ROW)	222.74	475.88	-253.14
Wetland Impacts (acres)			
PEM (acres within the ROW)	0.09	0.3	-0.21
PFO (acres within the ROW)	0.3	0.19	0.11
PSS (acres within the ROW)	0	0	0
POW (acres within the ROW)	0	0	0
Total Wetland Impacts (acres within the ROW)	0.39	0.49	-0.1

Notes:

[a] Pipeline construction requirements used to compare alternatives were based on the proposed route and its associated construction right-of-way (ROW). For the proposed route, Transco plans to use a 100-foot-wide construction ROW, with additional temporary workspace where needed. Within streams and wetlands, Transco proposes reducing the ROW to 75 feet, where practicable.

[b] Difference from MP to MP may not sum exactly due to MPs being based on Transco's Mainline System MPs. Length of pipeline as measured in geographic information systems.

3.7 PIPELINE CONSTRUCTION ALTERNATIVES

The results of the Pipeline Installation Alternatives Analysis are included in Attachment 19, which includes the HDD design reports and supporting documentation for conventional bore evaluations.

3.8 COMPRESSOR STATION ALTERNATIVES

The Compressor Stations' scope of work included in the Project is limited to modification and expansion of the existing compressor station 165, thereby reducing impacts compared to the construction and operation of a new greenfield compressor station. The LOD associated with the expansion of compressor station 165 includes a small portion of the Eden Loop pipeline within Transco-owned property. The LOD for the compressor stations were designed to avoid impacts to streams and wetlands. Therefore, no other compressor station site alternatives were considered.

Since the FERC application filing, and reflected in this Application, there has been a reduction in workspace at Compressor Station 165. This reduction avoided two wetland impacts which reduced the impact total by 0.4 acres.

4 PROPOSED ENVIRONMENTAL IMPACTS AND ENVIRONMENTAL REVIEW FACTORS

4.1 PROPOSED AQUATIC IMPACTS

4.1.1 Jurisdictional Impacts

Proposed impacts to streams and wetlands by resource type are summarized in Table 4.1 and table 4.2 below. Detailed tabular data regarding each proposed stream and wetland crossing, including associated impacts, are provided in Attachment 20. Tables in Attachment 20 identify the location and size of the anticipated wetland and stream impacts. Provided within Attachment 21 are the impact and mitigation detail, overall impact map, plan views and cross sections shows of stream impacts identified at the Project crossing included in this permit application. COE wetland attribute forms and an analysis of functions and values for impacted wetlands are provided within Attachment 22. Transco's Typical ROW Cross Section Drawings are provided in Attachment 10. Transco has submitted the erosion and sediment control and stormwater plans, which include environmental crossing details, to VADEQ as required by the Additional Upland Conditions for Water Quality Certification.

Project facilities include pipeline construction ROWs (temporary and permanent ROW), additional temporary workspace (ATWS), access roads, contractor yards, Compressor Station 165, and MLVs which will be primarily located in the permanent ROW.

Table 4.1: Stream Impact Summary

USACE District	Flow Regime	Temporary Impact (Linear Feet)	Temporary Impact (Square Feet)	Temporary Impact (Acres)
Norfolk	Perennial	3,508	33,670	0.77
	Intermittent	1,705	7,345	0.17
	Ephemeral	758	2,844	0.06
	Total	**5,971**	**43,860**	**1.01**

Table 4.2: Wetland Impact Summary

USACE District	Wetland Type	Temporary Impact (Acres)	Temporary Impact (Square Feet)	Permanent Conversion (Acres)	Permanent Conversion (Square Feet)
Norfolk	PFO	1.81	78,783	1.12	48,953
	PSS	0.11	***4,620*** [a]	0.01	***310*** [a]
	PEM	***7.76*** [a]	338,088	--	--
	POW	0.95	41,198	--	--
	Total	***10.62*** [a]	***462,689*** [a]	**1.13**	***49,263*** [a]
Note: [a] ***Bold and italics indicate updates on 6/20/2025.***					

4.1.2 Section 10 Waters

No traditionally navigable waters under Section 10 of the Rivers and Harbors Act (33 U.S.C. § 403) have been identified within the Project's limits in Virginia.

4.1.3 Water Withdrawals

Transco is not proposing any water withdrawals in Virginia. Municipal water sources will be used to hydrostatically pressure-test the new pipeline or provide dust control to the active work areas and as part of the HDD crossings.

In compliance with USDOT requirements, the new pipeline and facility segments will be hydrostatically pressure-tested before they are placed into service. Transco will only use municipal water sources for the hydrostatic pressure tests.

Transco is proposing to cross the Sandy River and Banister River via HDD. Transco will only use municipal water sources for these activities.

Dust-control measures may include watering and using state-approved dust suppressants. In Virginia, Transco anticipates using municipal water sources and to support dust control measures, which may also include water for wash stations and hydroseeding.

4.2 SENSITIVE STREAM RESOURCES

4.2.1 National Wild and Scenic Rivers

No National Wild and Scenic Rivers or rivers designated as a study river under the National Wild and Scenic River Act (16 U.S.C. Chapter 28) are crossed by the Project in Virginia. However, the section of Banister River from US Highway 29 to the Dan River is considered a State Scenic River[8]. The Applicant proposes to HDD under the Banister River as part of the avoidance and minimization measures. The bore will be approximately 64 feet under the riverbed and will be approximately 2390 feet long to minimize potential adverse impacts to this sensitive resource. Transco's HDD Monitoring, Inadvertent Return Response, and Contingency Plans are provided within the Pipeline Installation Alternative Analysis included as Attachment 15.

4.2.2 Tier III Protection

Waterbodies crossed by the Project and their special standards or designations are detailed in Attachment 17. No Exceptional State Waters (Tier III) are identified within the Project area[9].

4.2.3 Trout Waters

No streams crossed by the Project are considered stockable (Class V) or natural (Class VI) trout streams[10]

[8] https://www.dcr.virginia.gov/recreational-planning/vopmapper (Accessed March 4, 2025)

[9] https://law.lis.virginia.gov/admincode/title9/agency25/chapter260/section30/ (Accessed March 5, 2025)

[10] https://apps.deq.virginia.gov/EDM/ (Accessed on February 25, 2025)

4.2.4 Warm Water Fishery

Based on DWR Warmwater Fish Production and Stocking information available[11] stocked fisheries are not identified within the Project's construction workspace.

However, the Project does cross waterbodies that are considered warmwater fisheries habitat. The Project is submitting a waiver request to DWR for the time of year restriction (TOYR) for instream work recommended by DWR from April 15 through July 15.

4.2.5 Anadromous Fish Use Areas

The Project does not cross any anadromous fish use areas in Virginia[12].

4.2.6 Aquatic Life Movements

The Project has been designed to minimize impacts on aquatic life. Transco is limiting workspace to 75-feet wide in streams and wetlands to the extent practicable. Temporary stream crossing will be designed and constructed to maintain water flow using dam and pump-around diversions or flumes. Wetland crossings will be conducted in a matter to minimize disturbance to the resource to the extent practicable. Transco will utilize timber mats or bridged equipment crossings when crossing resources. Additionally, Transco is designing erosion and sediment control BMPs in accordance with applicable state requirements (VADEQ, 2025),

Transco's Plan and Procedures in Attachment 11 provides further details on the Project's stream crossing methodology

4.2.7 Spawning Areas

The project does not cross spawning areas.[13]

[11] https://dwr.virginia.gov/fishing/fish-stocking/warmwater/ (Accessed on March 6, 2025)

[12] https://svcgis.dwr.virginia.gov/fwis/?Menu=Home.Database+Search (Accessed on February 25, 2025)

[13] https://svcgis.dwr.virginia.gov/fwis/?Menu=Home.Database+Search (Accessed on February 25, 2025)

4.2.8 Submerged Aquatic Vegetation

The project does not cross areas where submerged aquatic vegetation is present[14].

4.2.9 Freshwater Mussels

Field habitat assessments were completed at 16 stream crossings and subsequent occupancy surveys were completed at 14 stream crossings in Virginia during the 2024 mussel survey season during normal to low flow (i.e., suitable for mussel surveys) stream conditions. The Project crosses multiple waterbodies that support Unionid mussels; however, none of the surveyed reaches supported Green Floater (*Lasmigona subviridis*) populations or habitat to suggest any rare, threatened or endangered mussel species were present within the vicinity of the Project. The common Eastern Elliptio (*Elliptio complanata*) was the only live species collected from seven streams along the Project. The only other species observed was the Eastern Floater (*Pyganodon cataracta*) from a single waterbody (White Oak Creek, L009-1-VA and L072-1-VA). Eastern Floater is another common sediment tolerant Atlantic slope freshwater mussel that regularly inhabits backwater sloughs, streams, ponds, and lakes. Though Green Floater are known to occur in the lower Banister River and Dan River, anthropogenic impacts such as the Lake Banister Dam would preclude potential host fish from migrating upstream and populating the upper Banister River and tributaries. No streams with potential for mussel occupancy were identified in the vicinity of Compressor Station 165.

Overall, only live mussels (non-state or federally listed) were observed in Cherrystone Creek, Banister River, unnamed tributaries to Banister River, and at the White Oak Creek crossings.

4.2.10 Designated Critical Resource Waters

No designated critical Resource waters are affected by the Project in Virginia. The Project crosses tributaries within the Dan River and Cascade Creek watersheds, but these streams are more than a mile away from the Project LOD in Virginia and outside of any areas anticipated to be impacted by Project construction.

[14] https://svcgis.dwr.virginia.gov/fwis/?Menu=Home.Database+Search (Accessed on February 25, 2025)

4.3 404(B)(1) GUIDELINES TECHNICAL EVALUATION FACTORS

The 404(b)(1) Guidelines aim to restore and maintain the chemical, physical, and biological integrity of WOTUS through the control of discharges of dredged or fill material. These guidelines are applicable to the specification of disposal sites for discharges of dredged or fill material into any WOTUS[15]. Below is a summary of the information relevant to each of the associated subparts.

4.3.1 Subpart C - Potential Impacts on Physical and Chemical Characteristics of the Aquatic Ecosystem

4.3.1.1 Substrate (§ 230.20)

In wetland crossing areas, Transco will limit the construction ROW to 75 feet where practicable. Prior to construction, one foot of topsoil will be segregated where possible, preventing the mixing of topsoil with subsoil except in areas where standing water is present of soils are saturated. In addition, after each crossing is completed, the ROW will be returned to pre-construction contours, and disturbed areas will be seeded in accordance with adequate seed mixes, and rates.

In waterbody crossings Transco will limit the construction ROW to 75 feet where practicable. Transco will conduct waterbody crossings via dry-open cut construction methods including dam and pump or flume or through trenchless technology via HDD. In-stream construction will be prioritized during normal or low flow conditions to minimize sedimentation and turbidity, minimize streambed and bank disturbances, and limit the time it takes to complete in-stream construction where practicable. Upon completion of in-stream construction, Transco will stabilize the stream banks to minimize erosion and washouts and the associated turbidity and sedimentation. Transco will return the stream banks and streambed to pre-construction contours to the extent practicable.

For areas that will not be disturbed by trenching or the travel lane, Transco will cut vegetation above ground level where practicable, leaving existing root systems in place, and remove it from the wetland for disposal. Due to all of the practices listed above, Transco anticipates a negligible impact to the substrate of streams and wetlands as a result of the Project.

[15]40 CFR Part 230 Subpart A § 230.1

4.3.1.2 Suspended Particles/Turbidity (§ 230.21)

Transco will conduct waterbody crossings via dry-open cut construction methods including dam and pump or flume or through trenchless technology via HDD. Typical drawings for the waterbody crossings are provided in Attachment 8. BMPs will be implemented when completing dry open-cut stream crossings, to minimize increases in suspended sediment and turbidity. In addition, Transco will install temporary bridges across waterbodies to reduce the potential for turbidity and sediment caused by the movement of construction equipment and vehicular traffic.

To minimize sedimentation during construction, trench spoils will be placed at least 10 feet away from the waterbody bank unless impractical due to topography. Erosion controls will be installed as needed to minimize sediment transport into waterbodies in accordance with Transco's Plan & Procedures (Attachment 10), and Transco's Annual Standards & Specifications (Attachment 23). In-stream construction will be prioritized during normal or low flow conditions to minimize sedimentation and turbidity, minimize streambed and bank disturbances, and limit the time it takes to complete in-stream construction where practicable. Upon completion of in-stream construction, Transco will stabilize the stream banks to minimize erosion and washouts and the associated turbidity and sedimentation. Transco will stabilize the stream banks and restore the streambed to pre-construction contours and conditions to the extent practicable. Transco anticipates that the project may result in minor short-term effects to suspended sediment and turbidity, much of which is minimized through use of BMPs to levels that will avoid significant degradation of affected waters.

4.3.1.3 Water (§ 230.22)

Transco will conduct waterbody crossings via dry-open cut construction methods including dam and pump or flume or through trenchless technology via HDD. Construction of the Project may result in minor short term effects to waterbodies, much of which is minimized through the use of BMPs to levels that will avoid significant degradation of affected waters. Transco does not anticipate long-term water quality effects after the completion of construction. Water quality and quantity considerations are addressed in the E&S and Stormwater Plans.

4.3.1.4 Current Patterns and Water Circulation (§ 230.23)

Transco will conduct waterbody crossings via dry-open cut construction methods including dam and pump or flume or through trenchless technology via HDD. During dam and

pump or flume construction crossing methods, the current pattern and water circulation will be temporarily altered as it is diverted around the construction site. Typical drawings for the waterbody crossings are included in the E&S and Stormwater Plans.

Adequate waterbody flow rates will be maintained to protect aquatic life and prevent the interruption of existing downstream uses. All stream banks will be returned pre-construction contours, to the extent practicable. Transco anticipates the impacts to current patterns and water circulation to be negligible.

4.3.1.5 Normal Water Fluctuations (§ 230.24)

The proposed impacts are primarily temporary in nature and will be restored to pre-construction contours once the installation of the pipeline is completed. Permanent erosion controls, including slope breakers/waterbars, and vegetative cover, will be used in upland areas to minimize erosion. In addition, trench plugs will be installed in upland slopes adjacent to wetlands and on either side of the waterbody to prevent trench erosion and subsurface drainage along the pipeline that could modify the hydrology of the resource. Transco will install a permanent slope breaker across the construction ROW at the base of slopes greater than five percent that are less than 50 feet from the waterbody, or as needed to prevent sediment transport into the waterbody.

Additionally, when crossing waterbodies, Transco will bridge above the ordinary high water mark or install culverts that are sized accordingly to minimize water level fluctuations. Transco anticipates impacts to normal water fluctuations to be negligible.

4.3.1.6 Salinity Gradients (§ 230.25)

No effect to salinity gradients is anticipated based on the geographic location of the Project.

4.3.2 Subpart D - Potential Impacts on Biological Characteristics of the Aquatic Ecosystem

4.3.2.1 Threatened and Endangered Species § (230.30)

Refer to Section 1.1.4 for information on rare, threatened and endangered species. Consultations with federal and state agencies are ongoing to minimize effects on these species.

4.3.2.2 Fish, Crustaceans, Mollusks, and Other Aquatic Organisms in Food Web (§230.31)

Construction of the pipeline may temporarily affect waterbodies and associated fisheries resulting from disturbance of stream banks and stream bed, removal of bank vegetation, and temporary modification of flow. Transco will conduct waterbody crossings via dry-open cut construction methods including dam and pump or flume or through trenchless technology via HDD. Minor short-term effects to fish, crustaceans, mollusks, and other aquatic organisms in the food web may result from the in-stream and in-wetland construction but are expected to be limited in duration and extent.

Aquatic communities are expected to recover quickly following construction. Best management practices including following TOYRs maintaining flow regime, and site restoration will further minimize and mitigate potential impacts.

Please refer to Section 1.1.4 for more information on rate, threatened and endangered species and Section 4.2.9 for more information on freshwater mussels.

4.3.2.3 Other Wildlife (§ 230.32)

General construction related impacts on wildlife species, as it relates to wetlands, waterbodies, and the surrounding areas, will result from habitat disturbance and human activities. Impacts are anticipated to primarily be temporary in nature and lead to species movement away from the Project area during construction. Trenching activities and associated spoil piles could result in a short-term barrier to movement for some species. Due to the temporary nature of construction, it is expected that habitat will achieve restoration quickly, aided by the use of restoration measures. Additionally, Transco anticipates that wildlife habitat impacts will be minimized significantly due to collocation, which reduces habitat fragmentation. It is expected that wildlife will quickly return to the vicinity of the ROW, using them as corridors for travel, refuge, foraging, and nesting. Therefore, impacts to wildlife are expected to be minor and short term.

4.3.3 Subpart E - Potential Impacts on Special Aquatic Sites

4.3.3.1 Sanctuaries and Refuges (§ 230.40)

No sanctuaries or refuges designated under state and federal laws or local ordinances are crossed by the Project.

The Project crosses the Virginia Piedmont Forest Block Complex Important Bird Area (IBA) from the National Audubon Society between MP 1387.51 and 1389.82 and again between MP 1390.01 and 1390.52, affecting approximately 54 acres during construction and 17 acres during the operational phase. These impacts are located in edge habitats, and no fragmentation of large, undisturbed forested areas is proposed. In addition, major sections of the Project will be collocated with the existing Transco's Mainline System ROW and no new habitat fragmentation will occur, minimizing the impacts to the IBA to the extent possible.

4.3.3.2 Wetlands (§ 230.41)

Transco conducted wetland delineations for the Project, which are included in Attachment 1 of the Application. Due to the linear nature of the Project, impacts to wetlands, which are considered a Special Aquatic Site (40 CFR §230.41), are anticipated. The Project will have a short-term minor effect on wetlands, that will be mitigated for both conversion and temporal loss impacts. Transco has followed the 404(b)(1) Guidelines to minimize wetland impacts to the extent practicable. Proposed wetland impacts are detailed in Table 4.2 and Attachment 20. Mitigation measures are discussed in Section 5.3.

4.3.3.3 Mud Flats (§ 230.42)

The Project does not affect mud flats.

4.3.3.4 Vegetated Shallows (§ 230.43)

The Project does not affect vegetated shallows.

4.3.3.5 Coral Reefs (§ 230.44)

The Project does not affect coral reefs.

4.3.3.6 Riffle and Pool Complexes (§ 230.45)

Transco conducted a Riffle and Pool Assessment to determine potential riffle and pool complex presence within the Projects limits of disturbance. The results of the assessment are included in Attachment 24 and indicated that 8 streams within Virginia exhibited characteristics of riffle and pool complexes within the Project limits of disturbance. Stream impacts, which will be temporary, will be restored to pre-existing conditions including the restoration of stream substrate and streambed contours to the extent practicable. In addition, erosion and sedimentation controls

will be installed to avoid the deposition of material into resources. Therefore, Transco anticipates a short term minor effect on waterbodies that exhibited characteristics of riffle and pool complexes.

4.3.4 Subpart F - Potential Effects on Human Use Characteristics

4.3.4.1 Municipal and Private Water Supplies (§ 230.50)

A desktop review did not identify potable water intake sources within 3 miles downstream of the Project waterbody crossings[16]. However, the Project crosses several streams designated as public water supply waters, identified in Attachment 20. Transco will implement mitigation measures specified in the Transco Plan and Transco Procedures, to minimize any potential impact on public water supply intakes.

In addition, private water supply wells located within 150 feet from the proposed workspace were identified through desktop analysis, civil and environmental surveys, and consultation with the owners.

Transco will offer to have a qualified, independent testing service conduct pre-construction testing, and post-construction groundwater testing for comparison, for wells located within 150 feet of the Project workspace. In the unlikely event that a well/spring is permanently affected due to construction activities, Transco will repair, replace, or provide alternative sources of potable water. Therefore, Transco anticipates a negligible effect on municipal and private water supplies.

4.3.4.2 Recreational and Commercial Fisheries (§ 230.51)

No commercial fisheries are crossed by the Project. Recreational use, including fishing, will be limited in the immediate vicinity of the LOD during construction, and conditions are expected to return to normal following stream restoration activities. Therefore, Transco anticipates negligible effect on Recreational and Commercial Fisheries.

4.3.4.3 Water-Related Recreation (§ 230.52)

Temporary effects during the installation of the pipeline will result from disturbance of stream banks, removal of bank vegetation, and, in some instances, temporary modification of flow

[16] https://geopub.epa.gov/dwwidgetapp/ (Accessed on March 5, 2025)

and increase in turbidity. However, the Applicant will use a dry crossing method, as previously mentioned, to maintain the water flow at all times and minimize the temporary effects to the extent possible.

Sections of small streams may be temporarily unavailable during active construction. However, recreational activities within the section of the Banister River, identified as a proposed Blueway Water Trail, will not be affected. Water trails (sometimes called blueways) provide many benefits to water enthusiasts such as providing river access points for boating and fishing, and water trails provide ecotourism benefits to state and local economies. In Pittsylvania County, VA, the Eden Loop will cross a section of the Banister that is proposed as a Blueway Water Trail. Transco proposes to cross the Banister River via HDD. The crossing of these rivers would be conducted in accordance with Transco's Plan and Procedures, and in accordance with applicable federal and state permit requirements. Transco will restore construction workspaces in accordance with Transco's Plan and Procedures and in accordance with applicable agency requirements. While indirect impacts to trails such as visual aesthetics, construction noise and dust are anticipated, these impacts will be temporary and limited to the construction phase of the Project. Therefore, Transco anticipates a negligible effect on water-related recreation.

4.3.4.4 Aesthetics (§ 230.53)

The Project's aesthetic impacts will be minimized by co-location with existing ROWs where practicable. There will be temporary visual impacts while the pipeline is under construction from construction equipment and E&S measures.

Once active construction is complete and areas are restored, Transco does not anticipate effects on aesthetics associated with the Project.

4.3.4.5 Parks, National and Historical Monuments, National Seashores, Wilderness Areas, Research Sites and Similar Preserves (§ 230.54)

The portion of the Eden Loop in Virginia does not cross any National or Historical Monuments, National Seashores, Wilderness Areas or research sites.

The Project crosses the Beaches to Bluegrass Trail (Horseshoe Road) approximate to MP 1391.00 which is a shared-use road, path and multi-use trail that connects communities between Virginia Beach oceanfront and Cumberland Gap and stretches across southern Virginia. However, Transco intends to cross Horseshoe Road via conventional bore and does not anticipate impacts to the trail. In addition, the Project crosses the Banister River at a section that

is proposed as a Blueway Water Trail, although Transco intends to cross this section via HDD avoiding any impacts to the Blueway.

4.3.5 Subpart G - Evaluation and Testing

4.3.5.1 General Evaluation of Dredged or Fill Material (§230.60)

Transco conducted an environmental database review from a desktop perspective to evaluate the potential for existing soil contamination in relation to the Project. Four sites with potential soil contamination were identified within 0.25-mile of the proposed project, none of which were considered active or planned to be directly impacted during construction upon further evaluation. Due to the general distance of the above-mentioned locations from the proposed project, closure status of past releases, and Transco's working knowledge of their existing aboveground facilities and Mainline System, Transco does not currently anticipate encountering soil or groundwater contamination during construction. If contaminated soil is identified during construction, Transco will follow procedures in their Unanticipated Discovery of Contamination Plan (Attachment 25). Therefore, testing is not anticipated because the proposed material is not likely to be a carrier of contaminants.

4.3.5.2 Chemical, Biological, and Physical Evaluation and Testing (§230.61)

As stated above, Transco has not identified any known areas of contamination within the LOD at Compressor Station 165 or the pipeline LOD. Transco's Unanticipated Discovery of Contamination Plan (Attachment 25) will be followed if contamination is identified during construction. Therefore, testing is not anticipated because the proposed material is not likely to be a carrier of contaminants.

4.3.5.3 Actions concerning the location of the discharge (§ 230.70)

Discharge of fill material will be temporary in nature. Once pipeline installation is complete wetlands and streams will be restored to their approximate original conditions and contours.

4.3.5.4 Actions concerning the material to be discharged (§ 230.71)

Discharge of fill material will be temporary in nature. Once pipeline installation is complete wetlands and streams will be restored to their approximate original conditions and contours.

4.3.5.5 Actions controlling the material after discharge (§ 230.72)

Per FERC guidance, restoration will be completed in approximately 20 days of backfilling the trench or within 10 days in residential areas, pending weather conditions. Stabilization shall be applied to denuded areas within seven days. If weather conditions delay this installation, temporary erosion control measures will be maintained until the permanent controls are in place. Transco will conduct monitoring during restoration until the Project has revegetated.

4.3.5.6 Actions affecting the method of dispersion (§ 230.73)

Transco will implement topsoil segregation techniques, where applicable, to preserve the seed bank and allow for a successful restoration. Stockpiled wetland topsoil and stream substrate will be reapplied during restoration. Topsoil will be recompacted as necessary to facilitate successful restoration. Stream bed material will be replaced with mechanical equipment or by hand to restore pre-construction conditions.

4.3.5.7 Actions related to technology (§ 230.74)

HDDs will be used in two locations to avoid impacts to the Sandy River and Banister River in addition to 11 smaller streams and 12 wetlands.

During dewatering, Transco will regulate discharge rate, use energy dissipation device(s), and install sediment barriers, as necessary, to prevent erosion, streambed scour, suspension of sediments, or excessive stream flow.

Transco has analyzed each crossing to identify the least environmentally damaging crossing method using dry-ditch open-cut methods or trenchless methods that will minimize environmental impacts. Additionally, Transco's Procedures (Attachment 10) will be followed, to prevent any potential erosion or loss of water quality.

For resources within the workspace that will not require excavation, Transco will use timber mats, temporary bridges, or culverts to prevent soil compaction and maintain flow that will allow the movement of aquatic species.

4.3.5.8 Actions affecting plant and animal populations (§ 230.75)

General construction related impacts on wildlife species, as it relates to wetlands, waterbodies, and the surrounding areas, will result from habitat disturbance and human activities. Impacts are anticipated to primarily be temporary in nature and lead to species movement away

from the Project area during construction. Trenching activities and associated spoil piles could result in a short-term barrier to movement for some species. Due to the temporary nature of construction, it is expected that habitat will restore quickly, aided by the use of restoration measures. Additionally, Transco anticipates that wildlife habitat impacts will be minimized significantly due to collocation, which reduces habitat fragmentation. It is expected that wildlife will quickly return to the vicinity of the ROW, using them as corridors for travel, refuge, foraging, and nesting.

Transco has considered the presence of state and federally threatened or endangered species when designing the Project. Transco is implementing avoidance and minimization measures including but not limited to; TOYRs, topsoil segregation to encourage germination of the native seed bank, and avoidance via trenchless construction methodologies.

Tree and vegetation removal is required for the Project; however, restoration and revegetation will occur after construction. Therefore, impacts to plants and animals are expected to be minor and short term.

4.3.5.9 Actions affecting human use (§ 230.76)

The proposed impacts are temporary in nature. Once the pipeline is installed, the area will be restored and revegetated. Streams and wetlands will be restored to approximate pre-existing condition and contours to the extent practicable. As stated above, impacts to recreation and aesthetics are expected to be minor and short term. Therefore, Transco expects the actions affecting human use to be minor and short term.

The actions outlined above (addressing §230.70-230.77) have been incorporated into the project design and construction plans to minimize adverse effects.

4.3.5.10 Other actions (§ 230.77)

The Project does not have any components or activities listed in § 230.77 as other actions for consideration.

4.4 PUBLIC-INTEREST REVIEW FACTORS

The Corps' public interest review is the main framework for the overall evaluation of projects and requires the careful weighing of all public interest factors relevant to each particular permit application. Thus, one specific factor (e.g., fish and wildlife values or economics) cannot by itself

force a specific decision, but rather the decision represents the net effect of balancing all public interest factors. The decision whether to issue a permit will be based on an evaluation of the probable impacts, including cumulative impacts, of the proposed activity and its intended use on the public interest as stated at 33 CFR 320.4(a). The public interest review below also includes consideration of additional policies as described in 33 CFR 320.4(b) through (r).

4.4.1 Conservation (§ 320.4(a))

The Project will have neutral (mitigated) effects on conservation.

The vast majority of the pipeline and related facilities will be underground. After installation is completed, the land surface will be restored to pre-construction uses to the extent possible. Impacts associated with the Project will be predominantly temporary in nature, except for forested areas within the permanent ROW where maintenance of the ROW will cause a net loss.

The Project crosses two conservation sites associated with the tricolored bat, the Transco Road Net Conservation Site and the MVP Southgate Net VA-SB01CA Conservation Site; the Applicant is proposing a TOYR to avoid impacts to any bat species. In addition, the Project crosses a National Audubon Society's IBA. However, the associated impacts are minimal as they are located in edge habitats, and no fragmentation of large, undisturbed forested areas is proposed.

4.4.2 Economics (§ 320.4(a))

The Project will have a beneficial effect on the local and regional economy.

To meet the increasing demand for energy, the SSE will provide reliable and efficient energy to support communities in Virginia and North Carolina as well as other states in the southeast United States. In addition to stimulating direct and indirect economic growth, SSE will add ~1.6 million dekatherms per day of natural gas transportation capacity. In addition, construction and operation of the Project will have a positive impact on tax generation in the Project states and counties. The Project would provide an estimated one-time fiscal contribution during its construction phase of approximately $9.6 million to the Project counties and approximately $63.5 million to the Project states. The Project would provide an estimated annual fiscal contribution to the Project counties during its operational phase of approximately $4.2 million. The project will increase tax revenue and provide jobs during its construction and for its duration and, therefore,

will be beneficial for the local economy. An economic analysis for the entirety of SSE can be found within Attachment 26.

4.4.3 Aesthetics (§ 320.4(a))

The Project will have a negligible effect on aesthetics.

The Project's aesthetic impacts will be minimized by co-location with existing ROWs where practicable. There will be temporary visual impacts while the pipeline is under construction from construction equipment and E&S measures.

Once active construction is complete and all areas are restored, Transco does not anticipate effects on aesthetics associated with the Project.

4.4.4 General Environmental Concerns (§ 320.4(a))

The Project will have neutral (mitigated) effects relevant to general environmental concerns.

Transco is coordinating with federal and state agencies to ensure appropriate mitigation measures are taken to reduce the environmental impacts associated with the construction of the project. Additionally, Transco will follow BMPs outlined in Transco's Plan and Procedures to minimize impact to wildlife and the environment. Transco is also seeking authorization from the FERC under Section 7(b) and 7(c) of the Natural Gas Act for appropriate abandonment authority and a Certificate of Public Convenience and Necessity to construct, own, operate, and maintain the proposed Project facilities. This process includes an Environmental Assessment and is undertaking necessary and significant efforts to mitigate those impacts, including compliance with the County's stormwater regulations, floodplain regulations, erosion and sediment control standards and subdivision standards.

4.4.5 Wetlands (§ 320.4(a) & (b))

The project will have a neutral (mitigated) effect on wetlands.

Transco has followed the 404(b)(1) Guidelines to minimize wetland impacts to the extent practicable. Proposed wetland impacts are detailed in Attachment 20. Mitigation measures are discussed in Section 5.3.

4.4.6 Historic, Cultural, Scenic, and Recreational Values (§ 320.4(a) & (e))

The project will have a neutral (mitigated) effect on historic, cultural, scenic and recreational values.

Consultation for the Project is being conducted directly with the VA Department of Historic Resources. The results of the studies to date are presented in archaeological and architectural and historical survey technical reports submitted to FERC as part of the authorization process under Section 7(b) and 7(c) of the Natural Gas Act. The Applicant mailed a Notice of Use of Pre-Filing Process letter describing the Project and inviting the representative of Native American tribes to participate in the FERC review of this Project.

Additionally, the Applicant has developed an Unanticipated Discovery Plan for Cultural Resource and Human Remains that details the protocols to implement in the event of cultural resources or human remains are encountered during construction.

4.4.7 Fish and Wildlife Values (§ 320.4(a) & (c))

The project will have a neutral (mitigated) effect on fish and wildlife values.

Transco has consulted with the USFWS, VADEQ, DWR, and DCR. Transco initiated consultations with state agencies in April of 2024, and with USFWS in March 2024. Transco will continue to coordinate with federal and state agencies to ensure that appropriate mitigation measures are taken across all aspects of The Project to protect fish and wildlife values. Construction of the pipeline facilities may affect wildlife and wildlife habitat within the immediate vicinity along the pipeline route, which predominantly consists of existing ROWs. The Applicant expects that wildlife will quickly return to the vicinity of the ROW, using them as corridors for travel, refuge, foraging, and nesting.

4.4.8 Floodplain Hazards (§ 320.4(a) & (l))

The Project will have a neutral (mitigated) effect on floodplain areas.

The Project will have no impact on Federal Emergency Management Agency (FEMA) 100-year floodplains or flood hazard zones. Transco will restore all workspace crossed by the project to pre-construction contours.

The pipeline installation is designed to maintain the riparian vegetation and to prevent streambank instabilities during construction and restoration, and to mitigate against damage due

to high velocity flows or potential erosion resulting from flash flooding. Further details can be found in the Transco's typical cross sections and Transco's Plan and Procedures (Attachment 10 and 11, respectively).

4.4.9 Floodplain Values (§ 320.4(a))

The Project will have a neutral (mitigated) effect on floodplain areas.

The Project crosses several (FEMA Special Flood Hazard Areas (SFHAs) located within the 100-year floodplain. However, these impacts are only temporary in nature and necessary to install the pipeline.

4.4.10 Land Use (§ 320.4(a))

The project will have a neutral (mitigated) effect on the land use.

The pipeline will be buried with 3 to4 feet of cover, and the disturbed area, including ATWS and temporary access roads, will be returned to pre-construction contours. A 10-foot-wide maintenance corridor will be kept as open space along the centerline of the pipeline ROW for inspections and maintenance. Within this ROW land use will be limited compared to pre-construction conditions. In areas outside the 10-foot-wide corridor the impact to land use will be minimal.

4.4.11 Navigation (§ 320.4(a) & (o))

The project will have no effect on navigation as it will not impact any navigable water of the United States.

4.4.12 Shore Erosion and Accretion (§ 320.4(a))

The Project will have no effect on shore erosion and accretion.

4.4.13 Recreation (§ 320.4(a))

The project will have a neutral (mitigated) effect on recreation.

The project crosses the Beaches to Bluegrass Trail (Horseshoe Road) approximate to MP 1391.00 which is a shared-use road, path and multi-use trail that connects communities between Virginia Beach oceanfront and Cumberland Gap and stretches across southern Virginia.

However, the Applicant intends to cross Horseshoe Road via conventional bore and does not anticipate impacts to the trail. In addition, the project crosses the Banister River at a section that is proposed as a Blueway Water Trail, although the Applicant intends to cross this section via HDD avoiding any impacts to the Blueway.

Sections of small streams may be temporarily unavailable during active construction. However, recreational activities within the section of the Banister River identified as a proposed Blueway will not be affected.

4.4.14 Water Supply and Conservation (§ 320.4(a) & (m))

The project will have a neutral (mitigated) effect on water supply and conservation.

The Applicant will use municipal water sources for HDD construction activities and to hydrostatically pressure-test the new pipeline segments before they are placed into service, as USDOT requires. In addition, the Applicant anticipates using municipal water sources to support dust control measures, which may also include water for wash stations and hydroseeding. As part of the pipeline installation several palustrine open waters will need to be temporarily dewatered, Transco will also use this water for dust control as needed.

4.4.15 Water Quality (§ 320.4(a) & (d))

The project will have a neutral (mitigated) effect on water quality during construction.

Water quality effects are anticipated to be short term, not lasting beyond construction. Erosion controls will be installed as needed to prevent sediment from flowing into waterbodies in accordance with Transco's Procedures (Attachment 11), and Transco's Standards & Specifications (Attachment 23). Additional information regarding water quantity and quality is included within the E&S and SW plans attached under separate cover. In addition, Transco is applying for a 401 upland certification to ensure water quality during construction.

4.4.16 Energy Needs, Energy Conservation and Development (§ 320.4(a) & (n))

The Project will have a beneficial effect on energy needs and development.

The Project intends to provide year-round firm transportation natural gas capacity from Virginia to the southeastern United States where demand for natural gas is growing. Transco has executed long-term, binding precedent agreements with multiple shippers. The increased transportation capacity that the Project will provide to the area will benefit energy reliability and

help meet new and existing demand. Energy conservation and development are major national objectives as noted in 33 CFR § 320.4(n).

4.4.17 Safety (§ 320.4(a))

The Project will have no effect on safety.

Federal, state and local safety regulations will be complied with as applicable during construction and applied in the design and planning of the proposed project. To minimize incidents, interstate natural gas pipeline facilities are designed, constructed, operated, and maintained in accordance with the USDOT's Pipeline and Hazardous Materials Safety Administration (PHMSA) Standard 49, Code of Federal Regulations (CFR) Part 192 (49 CFR Part 192).

4.4.18 Food and Fiber Production (§ 320.4(a))

The project will have a negligible effect on food and fiber production.

The Project crosses multiple agricultural lands, primarily cultivation of crops. The Project does not cross specialty crop areas but will cross organic farms and certified seed fields. The Applicant will work will landowners of organic farms or certified seed fields to confirm that affected areas are properly restored, including, as appropriate, topsoil replacement and rock removal. Transco will work with landowners to reimburse for damages or loss of crops that result from construction of the Project. Landowners will be allowed to continue to utilize the land for agricultural use once construction and restoration is complete. Additionally, Transco will take precautions to prevent the spread and establishment of noxious and invasive species.

Although three properties titled to timber companies are crossed by the Project, they are not currently in production. The Applicant is coordinating with these landowners but does not anticipate that Project activities will disrupt timber harvesting.

4.4.19 Mineral Needs (§ 320.4(a))

The Project will have no effect on mineral needs.

Transco did not locate any active or inactive mines within the Project workspace during review of available public data and during coordination with landowners. Transco will continue to coordinate with landowners to confirm the presence of both active and inactive mines and quarries

or other mineral resources within the construction ROW. Should any active or inactive mines be located Transco will take appropriate precautions to protect the integrity of the active facilities and avoid exacerbating contamination from abandoned mining sites.

4.4.20 Consideration of Property Ownership (§ 320.4(a) & (g))

The Project will have neutral (mitigated) effect on property ownership.

Transco is collocating with existing pipelines where possible. In general, Transco is proposing 50 feet of permanent ROW or an additional 25 feet where the project is collocated with the existing ROW.

4.4.21 Needs and Welfare of the People (§ 320.4(a))

The Project will have a beneficial effect on the needs and welfare of the people.

The Project would have a positive effect on the needs and welfare of the people. Section 2 details the purpose and need of the project. Additionally, the economic study included within Attachment 26 provides additional information regarding the economic benefits of the project.

4.4.22 Effects on Limits of the Territorial Sea (§ 320.4(f))

The project will have no effect on the limits of the territorial sea as it is not located in any coastal waters or territorial seas.

4.4.23 Activities Affecting Coastal Zones (§ 320.4(h))

The Project will have no effect on coastal zones as it is not located within any coastal zone.

4.4.24 Activities in Marine Sanctuaries (§ 320.4(h))

The project will have no effect on marine sanctuary as it is not located within or in the vicinity of any marine sanctuary.

4.4.25 Other Federal, State, or Local Requirements (§ 320.4(j))

In addition to the FERC Certificate, the Project will require additional authorizations and approvals. A complete list of other certificates and/or approvals from other federal, state, and local agencies is summarized in Attachment 17.

4.4.26 Safety of Impoundment Structures (§ 320.4(k))

The Project will have no effect on the safety of impoundment structures.

The project does not involve the construction or maintenance of any permanent impoundment structures.

4.4.27 Environmental Benefits (§ 320.4(p))

The Project is designed to be the least environmentally damaging practicable alternative. See section 3 for additional information.

4.4.28 Mitigation (§ 320.4(r))

As discussed in Section 5 of this Joint Permit Application, impacts to jurisdictional wetlands and streams have been minimized to the extent practicable. As a result of the unavoidable permanent conversion impacts, compensatory mitigation for impacts to wetlands and streams is proposed as detailed in Section 5.3.

4.5 IMPAIRED WATERBODIES

Table 4.3 below identifies the impaired waterbodies crossed by the Project, per Virginia's 303(d) list[17]. Waters that are not attaining water quality standards are often referred to as "impaired" waters. The EPA electronic system for accessing information about the health and status of the Nation's surface waters, Assessment and Total Maximum Daily Load Tracking and Implementation System (ATTAINS) and the Virginia 2024 Water Quality Assessment Guidance Manual use five categories ("Category 4" having three EPA subcategories) to help prioritize and characterize the water quality of each assessment unit. Category 4 waters are those where one or more designated uses are impaired or threatened but establishment of a Total Maximum Daily

[17] https://apps.deq.virginia.gov/EDM/ (Accessed March 10, 2025)

Load (TMDL) is not required. In Category 4A, a TMDL is not required because the state-developed TMDL has already been approved by EPA or a TMDL has been established by EPA for any water-pollutant combination. Category 5 lists waterbodies where TMDLs need to be developed by the state and would be included in the state's 303(d) list. No Category 5 waterbodies are crossed by the Project in Virginia.

Table 4.3: Impaired Waterbodies

Resource Name	Resource ID	Nearest MP	303(d) Category	Pollutant
Sandy Creek	L006-VA	1400.10	4A	Escherichia Coli
White Oak Creek	L009-VA	1402.80	4A	Escherichia Coli
Little Cherrystone Creek	L121-VA	1412.30	4A	Escherichia Coli

5 AVOIDANCE, MINIMIZATION AND MITIGATION

Pursuant to the *Memorandum of Agreement between the Environmental Protection Agency (EPA) and Department of the Army Concerning the Determination of Mitigation under the Clean Water Act Section 404(b)(1) Guidelines* and the Virginia Water Protection Permit regulations (9 VAC 25-210-90.C and 9 VAC25-210-115), applicants for state or federal permits to impact WOTUS or Waters of the State must demonstrate that impacts to these waters have been avoided and minimized to the extent practicable.

The term "practicable" appears numerous times in the Virginia Water Protection Permit regulations, EPA's Section 404(b)(1) Guidelines, and the *Memorandum of Agreement between the Environmental Protection Agency and Department of the Army Concerning the Determination of Mitigation under the Clean Water Act Section 404(b)(1) Guidelines*. This term is defined identically in the Virginia Water Protection Permit regulation (9 VAC 25-210-10) and the EPA's Section 404(b)(1) Guidelines (40 CFR §§ 230.1-230.80) as "available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes".

Through this section, Transco evaluated the available onsite alternatives and avoided and minimized impacts to streams and wetlands to the extent practicable. Where impacts are unavoidable, Transco will provide compensation for impacts in accordance with Section 404(b)(1)

Guidelines and as required by Virginia law. This permit application has been prepared in accordance with 33 CFR § 325.1(d).

5.1 AVOIDANCE

Based on the linear nature of the project and its Purpose and Need, the Applicant has avoided impacts to stream and wetlands to the extent practicable through the selection of the most suitable alignment and ROW, crossing method, and other specific avoidance measures as detailed below.

5.1.1 Avoidance Through Alignment Selection

As part of the FERC authorization under Section 7(b) and 7(c) of the Natural Gas Act, the Applicant has reviewed and modified the proposed pipeline route at multiple locations with the purpose of avoiding and minimizing impacts on adjacent landowners, natural resources including streams and wetlands, and cultural resources at specific locations. Refer to Section 3.6 Pipeline Route Alternatives for additional information.

5.1.2 Avoidance Through ROW Configuration

The Applicant proposes to collocate the pipeline within or adjacent to the existing Transco Mainline System to the extent practicable reducing the overall operational footprint of the project and avoiding and minimizing impact on adjacent landowners, natural resources including streams and wetlands, and cultural resources. Where this collocation occurs, the Applicant will seek to overlap the construction ROWs with existing utility easements to minimize new disturbance to the extent practicable. When collocating with existing ROWs, an additional permanent ROW may will be established to accommodate a 25-foot offset between pipe centerlines; depending on the nature of Transco's existing easement.

The Applicant will also limit the width of the construction ROW to 75-feet wide or less to avoid additional impacts to wetlands where practicable. In addition, the wetland boundaries will be clearly flagged during construction to avoid any potential unauthorized impact. The workspace reductions are considered practical reductions for the safe operation and passage of equipment and personnel while minimizing the length of time required to cross the features.

In addition to collocation and limiting the width of the construction ROW to 75' in resources where practicable, Transco made many workspace configuration adjustments to avoid impacts.

Specifically, Transco avoided placement of ATWS in resources where practicable, including trimming ATWS to avoid resources where practicable.

5.1.3 Avoidance by Selection of Pipeline Crossing Method

The results of the Pipeline Installation Alternative Analysis is provided within Attachment 19. This analysis includes Transco's evaluation of each onsite crossing method alternative to avoid and minimize aquatic impacts from pipeline crossings to the extent practicable.

5.1.4 Site-Specific Onsite Avoidance Measures

Transco will employ site-specific avoidance measures across the project. Transco will use signage and E&S measures to protect wetland features on and adjacent to the ROW from impacts that are not permitted. Additionally, Transco will employ Environmental Inspectors (EIs) to inspect all areas of construction to monitor and ensure that appropriate measures are being taken to protect adjacent environmental features.

At least one EI is required for each construction spread. The number and experience of EIs assigned to each construction spread shall be appropriate for the length of the construction spread and the number/significance of resources affected.

Transco's Plan and Procedures (Attachment 11) details additional information on EI responsibilities and avoidance and minimization measures to be employed during construction.

5.2 MINIMIZATION

Transco has routed pipeline facilities to avoid and minimize effects on resources to the extent practicable while maintaining constructability, collocation and safety. Additionally, Transco will use pipeline construction techniques that provide safe and reliable transmission facilities, consistent with Commission and USDOT specifications. To minimize potential adverse effects at stream and wetland crossings, the Applicant also proposes implementing the Transco Plan and Procedures (Attachment 11) and will adhere to the approved E&S Plan during the construction, post-construction restoration, and operation of the Project to ensure that construction activities will be performed in accordance with applicable federal and applicable state permit requirements. The Applicant will also limit the crossing duration, distance and effect of construction activities on stream and wetlands being crossed to the extent practicable. The following practices show that the Applicant has taken all the appropriate and practicable steps to minimize potential adverse

impacts of the discharges on the aquatic ecosystem, in accordance with 40 CFR § 230.10(d) and 40 CFR § 230 Subpart H.

5.2.1 Instream Pipeline Construction Practices

Transco proposes dam and pump or flume crossing methods in lieu of wet open cut crossing techniques. The proposal of these dry open cut crossings limits the potential for downstream impacts to waterbodies. Transco is proposing to utilize v-lock interlocking concrete blocks to support construction mats across these streams for travel and ROW access. Transco's Plan and Procedures (Attachment 11) and any applicable state or federal permit authorizations will be followed for all in-stream pipeline construction activities. Typical drawings for equipment bridges are included within the E&S and SW plans.

5.2.2 Wetland Pipeline Construction Practices

To minimize impacts to wetlands, all work performed within wetlands will be completed following Transco's Plan and Procedures (Attachment 11) and any applicable state or federal permit authorization.

Typical ROW Cross Section Drawings are provided in Attachment 10.

5.2.3 Duration of Pipeline Construction Activities in Waters

For stream crossings less than 10 feet in width, Transco anticipates that each dry open cut crossing can be completed within 24 hours, where practicable. For stream crossings wider than 10 feet, Transco anticipates that each dry open cut crossing can be completed in under 48 hours where practicable.

In instances where Transco anticipates additional time will be required, justification is included in Table 5. Transco will not initiate instream crossing construction until sufficient equipment and material is staged on site. Once construction commences, Transco will operate continuously until the instream work is completed.

Table 5.1: In-stream Crossing Duration

Waterway ID	Waterway Name	Milepost	Crossing Length (Linear Ft.)1	Crossing Method	Anticipated Crossing Duration (hours)2	Justification for Exceeding Standard Crossing Window
E2-L126-VA	UNT to Trotters Creek	1391.01	8.5	Dam and Pump	168	The bore exit pit on the south side of Horseshoe Road will be immediately adjacent to E2-L126-VA. To minimize the potential for subsidence in the stream and flooding of the pit, Transco is proposing to cross the stream via dam and pump for a week. This will allow time for the bore pipe to be located in an adjacent receiving pit prior to initiating the stream crossing. Once located, the stream crossing dam and pump will be started, and the trench excavated to allow the bore pipe to be received past the stream. Once the product pipe is fully installed past the stream, the stream will be restored and dam and pump removed.
E1-L009-VA	White Oak Creek	1402.81	23.2	Dam and Pump	96	Due to the stream being within a large wetland complex, the stream and the wetlands will need to be crossed at the same time. The overall crossing length for the pipe segment is over 400-ft, which will require additional time to segregate wetland topsoil and excavate the over 400-ft trench length, install the pipe segment, install buoyancy controls, and backfill the trench to ultimately restore stream flow.
E1-L010-VA	UNT to White Oak Creek	1402.98	16.7	Dam and Pump	72	Due to the stream being within a large wetland complex, the stream and the wetland will need to be crossed at the same time. Additional time will be required to segregate the wetland topsoil, excavate the trench, lower in the pipe, and backfill the trench and complete the crossings.
E1-L014-VA	UNT to White Oak Creek	1404.16	17.4	Dam and Pump	96	Due to the stream being within a large wetland complex, the stream and the wetland will need to be crossed at the same time. The overall crossing length for the pipe segment is over 300-ft, which will require additional time to segregate wetland topsoil, excavate the trench, lower in the pipe, and backfill the trench and complete the crossings.

Waterway ID	Waterway Name	Milepost	Crossing Length (Linear Ft.)1	Crossing Method	Anticipated Crossing Duration (hours)2	Justification for Exceeding Standard Crossing Window
E1-L072-VA	White Oak Creek	1407.61	26.7	Dam and Pump	120	Due to the stream being pinched between a large, saturated wetland complex to the south and a steep hill to the north, the workspace available to store excavated trench and bellhole spoils is extremely limited. The excavated spoils will mostly have to be hauled out of the area, up the steep hill to the north and into an upland area more suitable for storing the materials. Once the pipe section is lowered in, these materials will need to be hauled back down to the stream to complete backfilling and stream restoration. These factors will require additional time to excavate the trench and bellholes for tie-ins, install the pipe segment, install buoyancy controls, complete tie-ins to the adjacent wetland crossing and backfill the trench to ultimately restore stream flow.
E1-L110-VA & E1-L112-VA	Cherrystone Creek & UNT to Cherrystone Creek	1410.88	47.4, 6.8	Dam and Pump	72	Due to crossing two streams simultaneously, additional time will be required to effectively dam and bypass the streams, excavate the trench, lower in the pipe, and backfill the trench and complete the crossings.
E1-L119-VA	UNT to Little Cherrystone Creek	1412.09	4	Dam and Pump	72	Due to the stream being adjacent to a large wetland complex, the stream and the wetland will need to be crossed at the same time. Additional time will be required to segregate the wetland topsoil, excavate the trench, lower in the pipe, and backfill the trench and complete the crossings.
E1-L122-VA	UNT to Little Cherrystone Creek	1412.35	4.8	Dam and Pump	48	Due to the stream being within a large wetland complex, the stream and the wetland will need to be crossed at the same time. Additional time will be required to segregate the wetland topsoil, excavate the trench, lower in the pipe, and backfill the trench and complete the crossings.

Notes

(1) Measured from Ordinary High Water Mark

(2) Crossing Window is designated as time within or below Ordinary High Watermark. Duration is determined by length of the crossing:

a. For crossings less than 10 feet in length, the standard crossing window is 24 hours
b. For crossings that are 10 -100 feet in length, the standard crossing window is 48 hours.
c. Crossing not referenced in this table will meet standard crossing windows.

5.2.4 Stream Crossing Geometry

Where possible, Transco designed stream crossings as near to perpendicular to the waterbody channel as engineering and routing conditions permit in order to minimize impacts to the extent practicable.

5.2.5 Time-of-Year Restrictions

Project construction will comply with applicable TOYRs or will coordinate exceptions to those restrictions with appropriate agencies if necessary. Restrictions to instream construction activities are at the discretion of FERC, USFWS, and other relevant VA agencies. As applicable, TOYRs are identified, Transco will coordinate with the appropriate state or federal agency.

5.2.6 Wetland and Stream Crossings in Additional Temporary Construction Workspaces

The construction practices described in Transco's Plan and Procedures will be implemented to ensure the protection of these resources from erosion and sedimentation impacts. In addition, Transco, prepared erosion and sediment control plans consistence with the VADEQ SWM Handbook and related regulations, which will be followed during construction of the Project. The implementation of the Transco's Plan and Procedures and VADEQ SWM Handbook BMPs will minimize impacts to adjacent aquatic resources.

In addition to minimizing workspace to 75feet wide through streams and wetlands where practicable, Transco has developed workspace to minimize impacts when working adjacent to streams and wetlands. ATWS is sometimes required at or near wetland and waterbody crossings. Transco has sited ATWS to be setback 50 feet from streams and wetlands where practicable. Exceptions to ATWS setbacks are sometimes required when there is limited work area between features such as wetlands, waterbodies, railroads, and roads to ensure safety, constructability and logistical priorities are not compromised. In areas where a 75-foot-wide construction ROW could not be employed due to limiting site conditions, Transco provided justification in Attachment 12.

ATWS is also necessary at the HDD crossing locations to allow for foot traffic and surface coil wire for tracking the pilot hole during construction. Although the entire corridor will not be needed for the wire grids, the exact placement of the coil wire within this area will be determined on the equipment, site conditions, and preference a the time of construction.

5.2.7 Restoration of Temporary Impacts to Wetlands

Transco will promptly restore wetlands as close as practicable to their original configurations and contours. Topsoil will be replaced if temporarily removed, and compacted soils will be de-compacted. Transco will limit grubbing within wetlands to facilitate restoration. All restoration efforts and monitoring of wetland crossings will follow the steps outlined in the Transco's Plan and Procedures to ensure successful wetland restoration.

To aid in restoration upon completion of construction, Transco will segregate up to one foot in depth of the undisturbed topsoil for use after construction. Excavated material will be stockpiled in vegetated wetland areas on mats or geotextile fabric.

Transco will prevent pipe bedding material from acting as a drain by installing trench breakers at the wetland boundary.

Some wetland vegetation will be cut, removed, or crushed during construction. After the completion of construction, wetland areas within the ROW will be restored to pre-construction contours and revegetated with an approved seed mix, where standing water is not present, to stabilize disturbed soils. Affected wetland areas will be allowed to revegetate naturally from existing adjacent seed banks and amended with native wetland seed mixtures. Palustrine Emergent wetlands, dominated primarily by low-growing sedges, rushes, and other herbaceous vegetation, will revert to emergent vegetation following construction, resulting in no permanent change to wetland type. Palustrine Scrub Shrub and Palustrine Forested wetlands affected during construction may initially revert to primarily emergent vegetation, with woody vegetation reestablishing in the affected wetland areas over time. Wetland areas will not be amended with fertilizer, lime, or mulch unless required by appropriate federal and state agencies.

Revegetation will be considered successful when the cover of herbaceous species within disturbed wetlands is at least 70 percent that of the cover of the vegetation in adjacent wetland areas that were not disturbed by construction. Additionally, Transco will monitor disturbed wetlands and adjacent uplands until restoration and long-term stabilization is documented in accordance with the Transco Procedures.

5.2.8 Restoration of Temporary Impacts to Streams

Transco will promptly restore all temporarily impacted streams to their original bed and bank contours as closely as practicable in accordance with Transco's Plan and Procedures in Appendix 11.

Before beginning in-stream work, the top one foot of the streambed substrate will be segregated from the subsoils and stockpiled separately, where available. Transco will utilize only approved materials that are native to the waterbody and backfill compaction percentages will be equal to or greater than the adjacent undisturbed areas. Trench breakers will be utilized during restoration. Trench breakers will also limit the potential for the pipeline bedding materials to act as a French drain. The stream will be restored to approximate original contours. Any unused excavated material will be removed from the construction site and disposed of in accordance with applicable state and federal requirements.

Upon completion of backfilling, cleanup and restoration measures will begin. Cleanup and restoration will involve restoring grade cuts to pre-construction contours as closely as possible. To restore ground cover, minimize future erosion, and stabilize stream banks Transco will seed, fertilize, and mulch construction areas. To restore stream beds and banks, stabilization matting (such as erosion control blanket) will be installed in the stream banks before surface water flow is restored.

After the final grading, and weather and soil conditions permitting, seeding of disturbed stream approaches will be completed in accordance with the Transco's Plan and Procedures. Silt fences, compost filter socks, and other erosion and sediment control barriers will be installed and maintained throughout the ROW until permanent vegetation is established. Temporary equipment bridges, mating, etc. will be removed as quickly as possible following the completion of construction.

5.2.9 Long Term ROW Maintenance in Resources

During operation, Transco will maintain a permanent 50-foot ROW for the pipeline facilities. A 10-foot vegetation maintenance corridor will be kept as vegetated, open space along the centerline of the pipeline ROW for inspections and maintenance. Maintenance within uplands and wetlands along the permanent ROW will follow the timing restrictions outlined in Transco's Plan and Procedures as needed.

Annual vegetation maintenance within both upland and wetland portions along Transco's permanent ROW will be conducted along a 10-foot vegetation maintenance corridor. Maintenance efforts will encompass this 10-foot corridor centered over the pipelines and facilitate route patrols, inspections and emergency access. Operational vegetation maintenance within upland portions of Transco's permanent ROW outside of this 10-foot corridor will be conducted with a frequency

of approximately once every three years to maintain an herbaceous cover state. In order to minimize impacts to wetlands, Transco will not conduct routine vegetation maintenance over the full width of its permanent 50-foot ROW within wetlands. However, Transco reserves the right to selectively cut and remove trees within wetlands that are larger than 15 feet in height that are located within 15 feet of the pipeline with roots that could compromise the integrity of pipeline coating. Herbicides may be used to control noxious weeds and invasive plants during operation, which could harm non-target species if the chemicals are spilled or over-sprayed, in accordance with the FERC Upland Erosion Control, Revegetation, and Maintenance Plan (Plan) and Wetland and Waterbody Construction and Mitigation Procedures (Procedures). In riparian zones, vegetative maintenance will be limited to the 10-foot-wide corridor centered over the pipelines to facilitate route patrols and emergency access. Transco will selectively cut and remove trees within the riparian zone that are larger than 15 feet in height and located within 15 feet of the pipeline as their roots could compromise the integrity of the pipeline coating. Where the Project is collocated, the herbaceous cover will be maintained on the collocated side between the SSE pipeline, and the existing Transco Mainline. In wetlands, vegetative maintenance will be limited to the 10-foot-wide corridor centered over the pipelines to facilitate route patrols and emergency access. Transco will selectively cut and remove trees within wetlands that are larger than 15 feet in height and located within 15 feet of the pipeline as their roots could compromise the integrity of the pipeline coating. Where the Project is collocated, the herbaceous cover will be maintained on the collocated side between the SSE pipeline, and the existing Transco Mainline.

ROW maintenance will result in permanent conversion of existing upland and wetland forested areas to herbaceous or scrub-shrub vegetation communities. The construction ROW will be allowed to revert to preconstruction land use/land cover, with no further vegetation maintenance by Transco.

5.3 COMPENSATION

As discussed in Section 5.1 and Section 5.2, impacts to jurisdictional wetlands and streams have been minimized to the extent practicable. The Project has avoided permanent loss to wetlands and streams. As a result of the unavoidable permanent conversion impacts to wetlands, compensatory mitigation is proposed as detailed in Attachment 27 and outlined below.

According to the Virginia Water Protection (VWP) Permit Program Regulations (9VAC25-210-116) effective August 2, 2016 and Section 33 of the Code of Federal Regulations, Chapter

II, Part 332 – Compensatory Mitigation for Losses of Aquatic Resources[18], when compensatory mitigation is required, it is preferred in the following order: 1) Mitigation bank credits, 2) In-lieu fee program credits, 3) Permittee-responsible mitigation under a watershed approach, 4) Permittee-responsible mitigation through on-site and in-kind mitigation, 5) Permittee-responsible mitigation through off-site and/or out-of-kind mitigation.

Transco proposes to mitigate the unavoidable impacts associated with the permanent conversion of PFO or PSS wetlands to PEM wetlands at a 1:1 ratio, as shown in the table below.[19] . Transco is also proposing to mitigate for 1.81 acres of temporarily impacted PFO wetlands at the mitigation ratio used for permanent conversion of wetlands (1:1) to account for the longer timeframe required to reestablish PFO wetlands.

Table 5.2: Compensation for Vegetated Wetlands

Cowardin Classification	Required Mitigation Permanent Conversion Impact (Acres)	Voluntary Mitigation for Temporary PFO Impact (Acres)	Mitigation Ratio	Mitigation Required (credits)
Temporary PFO	--	1.81	1:1	1.81
PFO to PSS or PEM	1.12	0.00	--	1.12
PSS to PEM	<0.01	0.00	1:1	0.01
Total	**1.13**	**1.81**	**--**	**2.94**

Transco proposes additional voluntary compensatory mitigation for the temporal loss of all PEM, PSS and PFO wetlands and streams associated with the proposed impacts. Temporal loss of all PEM, PSS and PFO wetlands impacted by the project will be mitigated at 3% of the total mitigation required if that wetland were to be permanently impacted [20]. Temporal loss for

[18] As published in the Federal Register on April 10, 2008 (73 F.R. 19594), effective June 9, 2008.

[19] DEQ required mitigation ratios for permanent conversion are 0.5:1 for PFO to PSS or PSS to PEM; or 1:1 for PFO to PEM.

[20] The USACE's West Virginia Stream and Wetland Valuation Metric (WVSWVM) includes credit debit modifiers for temporary impacts during construction of 3% per year and for a period of post-restoration lag in vegetative maturity that ranges from 0 - 2% per year. Neither the Norfolk District nor DEQ have adopted a standard approach to mitigating temporal loss, so the Applicant proposes to provide voluntary compensatory mitigation for temporal loss using USACE's WVSWVM approach at a standard rate of 3%. The same rate (3%) will be conservatively applied for two years to include both to the duration of the construction impact and a period of post-construction restoration.

streams is proposed for 1 year. Although all streams within the ROW have been assessed using the Unified Stream Methodology (USM) developed by the USACE and VADEQ to rapidly assess stream mitigation requirements (Attachment 30), Transco assumed the maximum value for the Reach Condition Index (RCI = 1.5) for the purpose of this temporal loss mitigation calculation.

$$Wetland\ Credits\ = Impact\ Area \times Standard\ Mitigation\ Ratio \times 3\% \times 2\ years$$

$$Stream\ Credits = Impact\ Length \times RCI \times IF \times 3\% \times 1\ year$$[21]

The table below provides a brief summary of the proposed mitigation for the temporal loss of wetlands and streams:

Table 5.3: Proposed Temporal Loss Mitigation Calculation

Cowardin Classification	Proposed mitigation	Standard Mitigation Ratio	Temporal Loss Area (AC/LF)	Standard Mitigation base (for calculation purposes)	3% of standard mitigation	3% standard mitigation for 2 years (Proposed temporal loss mitigation) TOTAL
PFO	3% of total for 2 yrs	2:1	2.93	5.86	0.18	0.35
PSS	3% of total for 2 yrs	1.5:1	0.11	0.16	0.005	0.01
PEM	3% of total for 2 yrs	1:1	7.76	7.76	0.23	0.47
Wetlands	**3% of total for 2 yr**	**-**	***10.80***[a]	***13.78***[a]	**0.42**	**0.83**
Streams	**3% of total for 1 yr**	**USM (RCI=1.5)**	**5,971**	**8,957**	**269**	**269 (1 year only)**[22]

Note:
[a] ***Bold and italics indicate updates on 6/20/2025.***

The 1.13 credits required for permanent conversion impacts, 1.81 voluntary credits proposed for temporary PFO impacts, and the 0.83 voluntary credits proposed for the temporal loss of wetland conversion impacts (for a total of 3.77 credits) will be mitigated through permittee-responsible mitigation (PRM) as no wetland credits are available on the market that can serve the

[21] RCI (Reach Condition Index) = 1.5 and IF (Impact Factor) = 1: Transco assumed maximum values for the purposes of the calculation of the proposed voluntary mitigation for the temporal loss of streams.

[22] Voluntary mitigation for the temporal loss of streams is proposed for one year only given the shorter anticipated post construction restoration timeframe.

project. This is evidenced by the Regulatory In Lieu fee and Bank Information Tracking System database search in Attachment 28.

The PRM concept plan is enclosed within Attachment 29. This PRM project referred to as "Cherrystone" is located adjacent to the Project, between MP 1410.50 and MP 1410.70, and will provide the required wetland credits to offset the mitigation requirements for this project. An overall impact map and functions and values information for this location are also included in Attachment 29.

Additionally, Transco has purchased 269 stream credits, as noted in the table above, from Frog Bottom Mitigation Bank. A copy of the bill of sale is provided in Attachment 31.

6 PUBLIC INVOLVEMENT

Transco began public outreach for the SSE project in November 2023 to educate and build relationships with stakeholders and communities. Efforts began early, focusing on identifying and engaging a broad range of stakeholders, including federal, state, and local elected officials; regulatory agencies; landowners, Native American tribes; economic development agencies and chambers of commerce; local law enforcement; media outlets; non-governmental organizations; and the general public. Transco contacted government officials at all levels, including state legislators, executive offices, U.S. Congressional delegations, and local organizations, including environmental justice stakeholders. Regular updates have been and will continue to be provided throughout the Project's development. The Applicant remains available and engaged to address concerns during construction and operation.

Transco's Project outreach strategy was developed in 2023 with the following objectives:

- Connect with individuals and build relationships. To carry out public outreach activities in the pre-siting stage, Transco communicates, on a personal level, with stakeholders, which includes potentially impacted communities and local officials. Transco researched a variety of different sources to develop a list of stakeholder contacts. The resulting stakeholder database is developed and maintained to manage the flow of information to the public, communities, and emergency responders, to name a few.
- Conduct early meetings with key stakeholders. Meetings with stakeholders are a forum to understand stakeholders' thoughts, questions, and/or concerns to proactively work together to reach win-win solutions.

- Educate stakeholders. To educate stakeholders, Transco seeks to explain not only the Federal Energy Regulatory Commission (FERC) Certificate and regulatory processes, but also Transco's plans and timelines related to the execution and construction of the Project and the economic benefits available to the local communities as a result of the Project.
- Provide timely updates. By making stakeholders aware of new developments and providing them with timely information, Transco aims to become an important information source for each stakeholder.
- Support local communities. Transco is committed to supporting local communities by putting safety, environmental stewardship, and community support at the heart of its operations.
- Provide communication channels. Transco will implement methods to ensure the public, affected landowners, and community stakeholders have viable and effective means to communicate with Transco regarding the Project.

Further, Transco's Outreach Plan (Plan) describes the integrated approach for outreach and engagement for the Project. The Plan seeks to enhance the overall effectiveness of Transco's outreach and engagement efforts by actively engaging and educating various stakeholders, underscoring Transco's commitment to being a safe and reliable operator, and emphasizing the importances of being a community and environmental steward. The developed Plan included the following:

- Open house schedules that were mailed to stakeholders.
- Newspaper advertisements for open houses were placed in newspapers of general circulation in the Project area.
- In-person open houses were held in the county of each major Project scope item.
- Advertisements will be placed in newspapers prior to commencement of construction.
- Notifications were sent to businesses potentially affected by construction.
- Points of contact were designated for stakeholder communication.
    - A toll-free telephone number (1-800-306-3029) was set up for public inquiries regarding the Project.

  - An email address (SSEProject@Williams.com) was set up for public inquiries regarding the Project.
  - A website was developed to share periodic updates of Project information (https://www.williams.com/expansionproject/southeast-supply).
- Ongoing meetings and communications with stakeholders have been scheduled and will continue throughout the project's development, construction, and operational phases.
- Advertisements will be placed in newspapers and landowner notifications will be sent prior to commencement of construction.

Transco recognizes that meaningful landowner engagement is essential due to the long-term presence of pipelines on private property. Building and maintaining trust and transparency with landowners is a top priority, and the FERC serves as the lead federal agency overseeing the approval and regulation of such infrastructure projects. Before granting approval, FERC evaluates the public need for the Project, potential environmental and community impacts, and routing alternatives. This comprehensive review process often leads to multiple reroutes, deviations, and workspace adjustments based on feedback from landowners and communities.

To support this process, Transco began engaging with landowners in December 2023. In February 2024, Transco filed a pre-filing request with FERC, furthering a structured and proactive engagement phase. During this period, landowners were notified of the open house events where they could ask questions, view project maps, and provide feedback. FERC staff also attended these events, offering landowners the opportunity to engage directly with the agency.

During the pre-filing with FERC, Transco held monthly coordination meetings with FERC and environmental agencies in each state where the project is located. These meetings facilitated ongoing dialogue with state-level stakeholders and ensured that agency-specific requirements and concerns were integrated into the project planning and permitting process.

In March 2024, the Outreach team, along with several Transco team members, conducted seven in-person open house meetings and one virtual open house meeting. The in-person meetings were held in Pittsylvania, Virginia, Davidson, Rockingham, Cleveland, Forsyth, Iredell, and Guilford counties, North Carolina. Stakeholders had the opportunity to attend any of the sessions to learn more about the Project and ask questions. There were maps, fact sheets, and

other resources available for distribution and discussion, including additional 'frequently asked questions' sent out to virtual open house meeting attendees who provided email addresses.

The pre-filing process offers several key benefits for stakeholders and landowners. It provides more time to engage, greater influence over project design and routing, and ensures transparency from the outset. Transco documented their outreach efforts in filed Resource Reports and supplemental information/filings, detailing how stakeholders and landowners were identified and engaged. This early and structured engagement helps ensure that landowner concerns are meaningfully considered throughout the project's development.

FERC conducted two key scoping periods for the Project. The pre-filing scoping period began under FERC Docket No. PF24-2-000, with a notice issued on May 7, 2024, inviting public and agency comments by June 5, 2024, as well as providing a virtual scoping meeting, held on May 21, 2024. Then, on June 6, 2024, FERC issued a notice of in-person scoping meetings as well as extending the scoping period for public comments to July 5, 2024. FERC held the two in-person public scoping sessions on June 24, 2024, in Lexington, Davidson County, NC, and on June 25, 2024, in Chatham, Pittsylvania County, VA, in which Transco was present for.

Following this, Transco submitted its formal application on October 29, 2024, under Docket No. CP25-10-000. Transco then sent affected landowners notification of the application. During the pre-filing and application process, Transco filed with FERC mailing lists of affected landowners and other stakeholders, along with periodic updates to these lists. FERC then issued a Notice of Application on November 12, 2024, marking the beginning of the application scoping period and continuing the environmental review process with further opportunities for stakeholder input. Transco provided electronic and/or hard copies of the FERC application at local libraries in October/November 2024 for public availability.

As a part of public outreach efforts, Transco has and will continue to engage with community-based organizations that could be affected by the Project. Transco's Outreach and Land teams have engaged stakeholders and affected landowners, and will continue to do so, to provide information that enhances their understanding of the Project scope and the opportunities for public engagement and feedback. These teams will continue to provide updates throughout the permitting process and will attempt to alleviate concerns that may exist among stakeholder groups.

Transco is continually working to engage community, civic and business leaders to ensure there is broad awareness of the Project. Transco will encourage its contractors to hire local

employees and to use local businesses for their needs for and during construction of the Project. Transco has and will continue to sponsor local community events. During Transco's engagement of external stakeholders, Outreach will be mindful of non-English speakers and will tailor an outreach plan that is accessible in other languages.

During the development of the Project, Transco has proposed facilities that seek to balance landowner and community concerns, environmental resource issues, and Project requirements. In accordance with the guidelines adopted by the FERC Commission, Transco encourages landowners; federal, state, county, and municipal government officials; environmental groups; environmental justice stakeholders; and other stakeholders to discuss their concerns with Transco, as well as the FERC Commission, and to provide input on the most appropriate location for the pipelines and related facilities associated with the Project. Additional opportunities for public comment will be provided through the 401/404 permitting process.

7 ENVIRONMENTAL JUSTICE

On behalf of Transco, SWCA Environmental Consultants has prepared an Environmental Justice (EJ) screen for all components associated with the proposed Project in the Commonwealth of Virginia (Attachment 32).

8 CUMULATIVE IMPACTS

Potential cumulative impacts associated with the proposed Project may result from the combined effects of construction and operation of Project facilities together with other major developments occurring within the vicinity. To evaluate these potential impacts, the Applicant considered past, present, and reasonably foreseeable future major actions and other human-related activities (collectively referred to as "Actions") near the Project facilities. A complete analysis of cumulative impacts is available in Attachment 33.

The Applicant has summarized this analysis by HUC in Virginia in Table 8.1 and in Sections 8.1 through 8.7.

Table 8.1: Cumulative Impact Analysis Summary per HUC-12 Watershed

HUC-12 Watershed		Trotters Creek	Lower Sandy River	Sandy Creek - Dan River	White Oak Creek - Banister River	Cherrystone Creek	Shockoe Creek - Banister River	
		030101030903	030101031003	030101030907	030101050103	030101050104	030101050203	Total
HUC-12 Watershed Acreage		27,799	34,722	20,677	13,135	29,141	18,806	193,824
SSE - Eden Loop (VA Portion)	Disturbance during Construction (acres)*	141	102	60	149	132	64	649
	Disturbance during Operation (acres)*	38	31	24	49	21	31	195
FERC-Jurisdictional Natural Gas Actions (Project Identifier = A#)	# of Projects	1	1	1	1	3	--	4
	Project ID	A7	A7	A7	A7	A3, A6, A7	--	A3, A4, A6, A7
	Disturbance during Construction (acres)	96	75	64	118	235	--	589
	Disturbance during Operation (acres)	39	31	26	48	79	--	222
USACE- Regulated In-Water Actions (Project Identifier = D#)	# of Projects	2	--	--	--	--	--	2
	Project ID	D-1, D-16	--	--	--	--	--	D-1, D-16
	Disturbance during Construction (acres)	3,878	--	--	--	--	--	3,878
	Disturbance during Operation (acres)	3,528[2]	--	--	--	--	--	3,528[2]
Transportation Facility Actions [1] (Project Identifier = F#)	# of Projects	2	--	1	--	--	--	3
	Project ID	F-1, F-2	--	F-4	--	--	--	F-1, F-2, F-4
	Disturbance during Construction (acres)	N/A	--	N/A	--	--	--	N/A
	Disturbance during Operation (acres)	N/A	--	N/A	--	--	--	N/A
Residential/Commercial/ Industrial Developments (Project Identifier = G#)	# of Projects		1	--	2	3	--	10
	Project ID	G-5, G-141	G-8	--	G-7, G-143	G-1-A[1], G-1-B[1], G-3	--	G-1-A, G-1-B, G-2, G-3, G-4, G-5, G-8, G-141, G-143
	Disturbance during Construction (acres)	885	600	--	1,433	1,400	--	4,318
	Disturbance during Operation (acres)	885	600	--	933	1,400	--	3,818
HUC-12 Watershed		Trotters Creek	Lower Sandy River	Sandy Creek - Dan River	White Oak Creek - Banister River	Cherrystone Creek	Shockoe Creek - Banister River	

		030101030903	030101031003	030101030907	030101050103	030101050104	030101050203	Total
Non-Jurisdictional (Project Identifier = H#)	# of Projects	--	--	--	--	--	1	1
	Project ID	--	--	--	--	--	H-1	H-1
	Disturbance during Construction (acres)	--	--	--	--	--	2	2
	Disturbance during Operation (acres)	--	--	--	--	--	2	2
Total	# of Projects	5	2	2	3	6	1	20
	Disturbance during Construction (acres)	5,001	777	124	1,700	1,768	65	9,435
	Disturbance during Operation (acres)	963	661	50	1,030	1,500	32	4,237

Notes:
(1)Disturbance area not available
(2)Disturbance area during operation does not include D-1 information.

* Disturbance areas based on the latest FERC submission. However, adjustments of the project's limits of disturbance after the submission resulted in the smaller LOD outlined in this permit application.

Additional information on each project is available in **Attachment 29.**

Project Legend:
FERC Natural Gas Actions designated by A#
USACE Regulated In-Water Actions designated by D#
Transportation Facility Actions designated by F#
Residential/Commercial/Industrial (including solar projects) Actions designated by G#
Non-Jurisdictional Actions designated by H#

8.1 SANDY CREEK (WEST) – DAN RIVER (HUC 030101030907)

The construction of the Project will temporarily disturb approximately 60 acres within the Sandy Creek (West) – Dan River HUC-12 watershed and, based on wetland delineation data prepared for the Applicant, will result in temporary impacts to 0.18 acre of wetlands and 0.12 acre of streams (739 linear feet of streams) and in <0.01 acre of permanent conversion of wetlands, including 0.13 acre of wetlands within a 24-acre permanent operational footprint of the proposed Project. No past or present projects were identified in the Sandy Creek (West) – Dan River watershed. However, future projects include one utility line project, MVP Southgate Amendment Project, and one transportation project.

The total known disturbed acreage for the identified future projects, including the proposed Project, is approximately 124 acres, approximately less than one percent of the watershed. The total impacts to aquatic resources (as available and identified) in the Sandy Creek (West) – Dan River watershed for the future projects, including the proposed Project, are approximately 0.31 acre. These impacts to aquatic resources represent approximately 0.09 percent of 359 acres of aquatic resources within the watershed, this estimated percentage is based on available information from the National Wetland Inventory and may differ from current conditions.

The Sandy Creek – Dan River watershed land cover data is provided on the table below.

Table 8.2 Sandy Creek - Dan River watershed land cover data

Land Cover Type (Source: National Land Cover Database)	Sandy Creek – Dan River HUC		Southeast Supply Enhancement Project	
	Land Cover (AC)	Land Cover (%)	Land Cover within LOD (AC)	Land Cover within LOD (%)
Open Water	42	0.2%	0.00	0.00%
Developed, Open Space	2,250	10.9%	3.44	0.15%
Developed, Low Intensity	1,295	6.3%	0.22	0.02%
Developed, Medium Intensity	381	1.8%	0.31	0.08%
Developed, High Intensity	171	0.8%	0.00	0.00%
Barren Land (Rocky/Sand/Clay)	0	0.0%	0.00	0.00%
Deciduous Forest	6,365	30.8%	10.29	0.16%
Evergreen Forest	2,004	9.7%	6.47	0.32%
Mixed Forest	2,123	10.3%	3.90	0.18%
Shrub/Scrub	583	2.8%	5.03	0.86%
Grassland/Herbaceous	177	0.9%	0.08	0.04%
Pasture/Hay	4,775	23.1%	24.57	0.51%
Cultivated Crops	484	2.3%	5.17	1.07%
Woody Wetlands	8	0.0%	0.00	0.00%
Emergent Herbaceous Wetlands	0	0.0%	0.00	0.00%

8.2 SHOCKOE CREEK – BANISTER RIVER (HUC 030101050203)

The construction of the Project will temporarily disturb approximately 64 acres within the Shockoe Creek – Banister River HUC-12 watershed and, based on wetland delineation data prepared for the Applicant, no temporary impacts to wetlands or streams will occur during construction. In addition, no wetland or streams impacts will occur within a 31-acre permanent operations footprint. No past or present projects were identified in the Shockoe Creek – Banister River watershed. However, one future utility line project was identified, MVP Southgate Amendment Project.

The total known disturbed acreage for future projects, including the proposed Project, is approximately 65 acres, approximately less than one percent of the watershed. The total impacts to aquatic resources (as available and identified) in the Shockoe Creek – Banister River watershed for the future projects, including the proposed Project, are approximately 0.06 acre. These impacts to aquatic resources represent approximately 0.01 percent of aquatic resources within the watershed, this estimated percentage is based on available information from the National Wetland Inventory and may differ from current conditions.

The Shockoe Creek – Banister River watershed land cover data is provided on the table below.

Table 8.3: Shockoe Creek - Banister River Watershed Land Cover Data

Land Cover Type Land Cover Type (Source: National Land Cover Database)	Shockoe Creek – Banister River HUC		Southeast Supply Enhancement Project	
	Land Cover (AC)	Land Cover (%)	Land Cover within LOD (AC)	Land Cover within LOD (%)
Open Water	27	0.1%	0.0	0.00%
Developed, Open Space	842	4.5%	4.66	0.55%
Developed, Low Intensity	165	0.9%	6.79	4.12%
Developed, Medium Intensity	12	0.1%	4.69	40.10%
Developed, High Intensity	1.37	0.01%	1.23	89.58%
Barren Land (Rocky/Sand/Clay)	0	0.0%	0	0.00%
Deciduous Forest	5,162	27.4%	2.92	0.06%
Evergreen Forest	2,880	15.3%	0.09	0.00%
Mixed Forest	2,437	13.0%	2.14	0.09%
Shrub/Scrub	1,284	6.8%	0.00	0.00%
Grassland/Herbaceous	1,305	6.9%	0	0.00%
Pasture/Hay	3,726	19.8%	23.45	0.63%
Cultivated Crops	716	3.8%	0.95	0.13%
Woody Wetlands	216	1.1%	0	0.00%
Emergent Herbaceous Wetlands	4	0.0%	0.00	0.00%

8.3 CHERRYSTONE CREEK (HUC 030101050104)

The construction of the Project will temporarily disturb approximately 132 acres within the Cherrystone Creek HUC-12 watershed and, based on wetland delineation data prepared for the Applicant, will result in temporary impacts to 5.23 acres of wetlands and 0.20 acre of streams (859 linear feet of streams) and in permanent conversion impacts to 0.73 acre of wetlands, including 3.81 acres of wetland within a 21-acre permanent operations footprint. Three past and present projects were identified in the Cherrystone Creek watershed, including two utility line projects and one commercial (solar) project. In addition, three future projects were identified, including one utility line project, MVP Southgate Amendment Project, and two residential projects (dam rehabilitation).

The total known disturbed acreage for the past, present and future projects, including the proposed Project, is approximately 1,768 acres, approximately six percent of the watershed. The total impacts to aquatic resources (as available and identified) in the Cherrystone Creek watershed for the past, present and future projects, including the proposed Project, are approximately 12.71 acres. These impacts to aquatic resources represent approximately 1.56 percent of aquatic resources within the watershed, this estimated percentage is based on available information from the National Wetland Inventory and may differ from current conditions.

The Cherrystone Creek watershed land cover data is provided on the table below.

Table 8.4: Cherrystone Creek Watershed Land Cover Data

Land Cover Type Land Cover Type (Source: National Land Cover Database)	Cherrystone Creek HUC		Southeast Supply Enhancement Project	
	Land Cover (AC)	Land Cover (%)	Land Cover within LOD (AC)	Land Cover within LOD (%)
Open Water	185	0.6%	0.00	0.00%
Developed, Open Space	2,008	6.9%	10.13	0.50%
Developed, Low Intensity	837	2.9%	17.04	2.04%
Developed, Medium Intensity	227	0.8%	15.90	7.00%
Developed, High Intensity	58	0.2%	2.24	3.85%
Barren Land (Rocky/Sand/Clay)	3	0.0%	0.00	0.00%
Deciduous Forest	6,316	21.7%	8.61	0.14%
Evergreen Forest	2,867	9.8%	0.61	0.02%
Mixed Forest	2,831	9.7%	2.99	0.11%
Shrub/Scrub	1,225	4.2%	1.04	0.08%
Grassland/Herbaceous	1,464	5.0%	2.94	0.20%
Pasture/Hay	9,911	34.0%	67.26	0.68%
Cultivated Crops	1,055	3.6%	0.00	0.00%
Woody Wetlands	121	0.4%	0.00	0.00%
Emergent Herbaceous Wetlands	2	0.0%	0.00	0.00%

8.4 WHITE OAK CREEK – BANISTER RIVER (HUC 030101050103)

The construction of the Project will temporarily disturb approximately 149 acres within the White Oak Creek – Banister River HUC-12 watershed and, based on wetland delineation data prepared for the Applicant, will result in temporary impacts to 3.23 acres of wetlands and 0.26 acre of streams (1,409 linear feet of streams) and in permanent conversion impacts to 0.26 acre of wetlands. including 1.88 acres of wetland within a 49-acre permanent operations footprint. No past or present projects were identified in the White Oak Creek – Banister River watershed. However, future projects include one utility line project, MVP Southgate Amendment Project, and two commercial projects, including one solar project.

The total known disturbed acreage for the future projects, including the proposed Project, is approximately 1,700 acres, approximately 13 percent of the watershed. The total impacts to aquatic resources (as available and identified) in the White Oak Creek – Banister River watershed for the future projects, including the proposed Project, are approximately 7.41 acres. These impacts to aquatic resources represent approximately 1.32 percent of 562 acres of aquatic resources within the watershed, this estimated percentage is based on available information from the National Wetland Inventory and may differ from current conditions.

The White Oak Creek – Banister River watershed land cover data is provided on the table below.

Table 8.5: White Oak Creek - Banister River Watershed Land Cover Data

Land Cover Type Land Cover Type (Source: National Land Cover Database)	White Oak Creek - Banister River HUC		Southeast Supply Enhancement Project	
	Land Cover (AC)	Land Cover (%)	Land Cover within LOD (AC)	Land Cover within LOD (%)
Open Water	76	0.3%	0.14	0.18%
Developed, Open Space	1,241	5.4%	8.73	0.70%
Developed, Low Intensity	546	2.4%	3.15	0.58%
Developed, Medium Intensity	209	0.9%	0.41	0.20%
Developed, High Intensity	81	0.4%	0.00	0.00%
Barren Land (Rocky/Sand/Clay)	63	0.3%	0.00	0.00%
Deciduous Forest	6,240	27.0%	15.24	0.24%
Evergreen Forest	1,923	8.3%	6.55	0.34%
Mixed Forest	2,370	10.2%	6.33	0.27%
Shrub/Scrub	960	4.2%	4.79	0.50%
Grassland/Herbaceous	946	4.1%	1.36	0.14%
Pasture/Hay	6,462	27.9%	69.59	1.08%
Cultivated Crops	1,804	7.8%	23.53	1.30%
Woody Wetlands	189	0.8%	0.38	0.20%
Emergent Herbaceous Wetlands	0	0.0%	0.00	0.00%

8.5 LOWER SANDY RIVER (HUC 030101031003)

The construction of the Project will temporarily disturb approximately 102 acres within the Lower Sandy River HUC-12 watershed and, based on wetland delineation data prepared for the Applicant, will result in temporary impacts to 0.35 acre of wetlands and 0.15 acre of streams (1009 linear feet of streams) and in permanent conversion impacts to 0.01 acre of wetlands, including 1.08 acre of wetlands within a 39-acre permanent operations footprint. No past projects and one present residential project were identified in the Lower Sandy River watershed. In addition, one utility line project, MVP Southgate Amendment Project, was identified.

The total known disturbed acreage for the present and future projects, including the proposed Project, is approximately 777 acres, approximately two percent of the watershed. The total impacts to aquatic resources (as available and identified) in the Lower Sandy River watershed for the future projects, including the proposed Project, are approximately 0.87 acre. These impacts to aquatic resources represent approximately 0.16 percent of 533 acres of aquatic resources within the watershed, this estimated percentage is based on available information from the National Wetland Inventory and may differ from current conditions.

The Lower Sandy River watershed land cover data is provided on the table below.

Table 8.6: Lower Sandy River Watershed Land Cover Data

Land Cover Type Land Cover Type (Source: National Land Cover Database)	Lower Sandy River HIC		Southeast Supply Enhancement Project	
	Land Cover (AC)	Land Cover (%)	Land Cover within LOD (AC)	Land Cover within LOD (%)
Open Water	75	0.2%	0.00	0.00%
Developed, Open Space	2,882	8.3%	9.16	0.32%
Developed, Low Intensity	1,520	4.4%	1.47	0.10%
Developed, Medium Intensity	304	0.9%	0.43	0.14%
Developed, High Intensity	150	0.4%	0.03	0.02%
Barren Land (Rocky/Sand/Clay)	0	0.0%	0.00	0.00%
Deciduous Forest	10,887	31.4%	6.55	0.06%
Evergreen Forest	3,223	9.3%	1.68	0.05%
Mixed Forest	4,299	12.4%	5.99	0.14%
Shrub/Scrub	1,102	3.2%	0.01	0.00%
Grassland/Herbaceous	1,160	3.3%	0.00	0.00%
Pasture/Hay	8,859	25.5%	48.38	0.55%
Cultivated Crops	219	0.6	4.60	2.10%
Woody Wetlands	4	0.0%	0.00	0.00%
Emergent Herbaceous Wetlands	0	0.0%	0.00	0.00%

8.6 TROTTERS CREEK – DAN RIVER (HUC 030101030903)

The construction of the Project will temporarily disturb approximately 141 acres within the Trotters Creek – Dan River HUC-12 watershed and, based on wetland delineation data, will result in temporary impacts to one acre of wetlands and 0.28 acre of streams (1,955 linear feet of streams) and in permanent conversion impacts to <0.01 acre of wetlands, including one acre of wetland within a 38-acre permanent operations footprint. One past transportation project and two present project were identified in the Trotters Creek – Dan River watershed. The present projects include one transportation project and one industrial project. In addition, one future utility line project, MVP Southgate Amendment Project, two transportation projects, one residential mixed-use project and one commercial (solar) project.

The total known disturbed acreage for the past, present and future projects, including the proposed Project, is approximately 5,001 acres, approximately 18 percent of the watershed. The total impacts to aquatic resources (as available and identified) in the Trotters Creek – Dan River watershed for the future projects, including the proposed Project, are approximately 25 acres. These impacts to aquatic resources represent approximately 2.47 percent of 1,014 acres of aquatic resources within the watershed, this estimated percentage is based on available information from the National Wetland Inventory and may differ from current conditions.

The Trotters Creek - Dan River watershed land cover data is provided on the table below.

Table 8.7: Trotters Creek - Dan River Watershed Land Cover Data

Land Cover Type Land Cover Type (Source: National Land Cover Database)	Trotters Creek – Dan River HUC		Southeast Supply Enhancement Project	
	Land Cover (AC)	Land Cover (%)	Land Cover within LOD (AC)	Land Cover within LOD (%)
Open Water	330	1.2%	0.00	0.00%
Developed, Open Space	1,512	5.4%	5.20	0.34%
Developed, Low Intensity	596	2.1%	0.90	0.15%
Developed, Medium Intensity	60	0.2%	0.23	0.38%
Developed, High Intensity	9	0.0%	0.00	0.00%
Barren Land (Rocky/Sand/Clay)	2	0.0%	0.00	0.00%
Deciduous Forest	8,132	29.3%	23.81	0.29%
Evergreen Forest	4,682	16.8%	8.01	0.17%
Mixed Forest	3,556	12.8%	19.92	0.56%
Shrub/Scrub	1,479	5.3%	2.46	0.17%
Grassland/Herbaceous	1,918	6.9%	17.51	0.91%
Pasture/Hay	4,280	15.4%	32.89	0.77%
Cultivated Crops	890	3.2%	0.00	0.00%
Woody Wetlands	317	1.1%	0.00	0.00%
Emergent Herbaceous Wetlands	1	0.0%	0.00	0.00%

8.7 CONCLUSIONS

Transco evaluated the potential cumulative impacts associated with the Project and twenty other projects near the Project's area. These projects included past, present and future major projects within the six different HUC-12 watersheds where the proposed Project is located in Virginia. The total cumulative disturbed area during construction is 9,435 acres out of 154,284 acres in the six HUC-12 watersheds considered, 649 acres (0.42 percent of the total area) are associated with the Project. In addition, the total cumulative disturbed area during operations is 4,237 acres, 195 acres are part of the Project. The cumulative impacts to streams and wetlands within the six HUC-12 watersheds are 46.36 acres out of 3,850 acres or 1.20 percent identified in the NWI database, based on publicly available information. Only 12.76 acres (0.33 percent) of streams and wetlands will be temporarily disturbed during the construction and operation of the proposed Project.

Additionally, Transco also evaluated the land cover impacts associated with the proposed Project along the six HUC-12 watershed where the Project is located in Virginia. The information used for this evaluation is available on the National Land Cover Database. The proposed Project will result in 3.66 percent of land cover conversion across the six different HUC-12 watersheds, the largest conversions along the Project's area are Pasture/Hay and Decidious Forest. The Project will convert 294 acres (46 percent of the Project's area) of Pasture/Hay and 73 acres of Decidious Forest (13% of the Project's area).

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