



Public Notice # SAC 2015-00709

Public Notice Date: April 11, 2017

**NOTICE OF DEPARTMENT DECISION
WATER QUALITY CERTIFICATION**

DHEC, acting on an application for Water Quality Certification pursuant to Section 401 of the Federal Clean Water Act and pursuant to R. 19-450. et. Seq., 1976 SC Code of Laws, *Permits for Construction in Navigable Waters*, has reached a proposed decision for the project described below.

Dominion Resources Services Inc
Temporarily impacting approximately 520 linear feet of stream and permanently impacting 54 linear feet of stream
Various streams within the South Tyger River, Enoree River, Little River, and Saluda River Watersheds
Spartanburg, Laurens, Newberry, and Greenwood Counties
P/N SAC 2015-00709

After reviewing the project plans, DHEC Staff determined that there is a reasonable assurance that the project will be conducted in a manner consistent with the certification requirements of Section 401 of the Federal Clean Water Act and the permitting requirements of R. 19-450. et. Seq., 1976 SC Code of Laws. Accordingly, the Department certifies the project with conditions as follows:

1. Prior to beginning any land disturbing activity, appropriate erosion and siltation control measures (i.e. silt fences or barriers) must be in place and maintained in a functioning capacity until the area is permanently stabilized.
2. Materials used for erosion control (e.g., hay bales or straw mulch) will be certified as weed free by the supplier.
3. Inspections of temporary erosion control measures shall be conducted on a daily basis in areas of active construction or equipment operation, on a weekly basis in areas with no construction or equipment operation, and within 24 hours of each 0.5-inch of rainfall.
4. All necessary measures must be taken to prevent oil, tar, trash, and other pollutants from entering the adjacent waters.
5. Once the project is initiated, it must be carried to completion in an expeditious manner to minimize the period of disturbance to the environment.
6. Where there is no flow at the time of construction, instream activities within minor waterbodies (less than or equal to 10 feet wide at the water's edge) must be completed within 24 hours. Where there is no flow at the time of construction, instream activities within intermediate waterbodies (greater than 10 feet wide but less than or equal to 100 feet wide at water's edge) must be completed within 48 hours, unless conditions make that infeasible. Crossings requiring a flume (dry cut crossings) to maintain downstream flow must be completed and restored in as little time as is feasible, which will vary based on site-specific conditions.

7. Dry cut (flume) crossings shall be used for all stream crossings (unless HDD or bore methods are employed) when the stream is wet at the time of construction.
8. Upon project completion, all disturbed areas must be permanently stabilized with vegetative cover (preferable), riprap, or other erosion control methods as appropriate.
9. Disturbed riparian areas must be revegetated after construction with native species of conservation grasses, legumes, and woody species similar in density to adjacent undisturbed lands.
10. For permanent rights-of-way, clearing of the vegetation within 25 feet on either side of waterbodies will be limited to a 10-foot wide corridor over the pipeline. The clearing shall be maintained in an herbaceous state. Trees within 15 feet on either side of the pipeline that have roots that could compromise the integrity of the pipeline coating may be selectively cut and removed.
11. No routine vegetation mowing or clearing may be performed in riparian or wetland areas located between horizontal directional drilling (HDD) entry and exit locations. Selective hand clearing of wetland and upland vegetation may be allowed during the first stage at each HDD crossing to facilitate the placement of guide wires along the pipeline ROW.
12. In-stream construction work should be avoided from March 1st to June 30th if streams are wet at the time of crossing, with the exception of those proposed for HDD or bore methods.
13. Herbicides or pesticides shall not be used within 100 feet of a wetland or riparian area, except as allowed by the appropriate federal or state agency. If chemicals are used, a 50-foot buffer on either side of the stream crossing should be established where no herbicide or pesticide treatments would be allowed.
14. Maintenance clearing or mowing of permanent rights-of-way must not be scheduled between April 15th and August 1st of a given year to avoid nesting season for a majority of migratory birds.
15. All excavations should be backfilled with the excavated material after installation of the appropriate structures. Where practicable, sidecast spoil material from trench excavation should be placed on the side of the trench opposite streams and wetlands. Spoil material from trench excavation should be placed on the side of the trench to be reused as back fill with the A-horizon placed back in its original position. Excess spoil material must be removed to an approved upland disposal site.
16. Additional Temporary Workspace Stations (ATWS) must be located at least 50 feet back from waterbody boundaries unless a reduced setback is justified. Double silt fences shall be employed where ATWS areas are in close proximity to waterbodies.
17. Spoil placement within the construction right-of-way must be at least 10 feet from the water's edge.
18. Access road crossings of Waters of the United States must be made with appropriately sized culverts. Culverts must be sized and designed to prevent alteration of the natural stream morphology. For pipe culverts, the bottom elevation of the culvert or pipe must be at or below the stream bed elevation to allow for natural mitigation of aquatic organisms up-and downstream. Disturbed stream banks should be restored by planting woody vegetation and/or using bioengineering techniques for stream bank stabilization.

19. The project must comply with the "Transco to Charleston Project Wetland and Waterbody Construction and Mitigation Procedures" as approved by the Federal Energy Regulatory Commission in the Certificate of Public Convenience and Necessity issued on February 2, 2017.
20. The project must comply with the "Transco to Charleston Project Upland Erosion Control, Revegetation, and Maintenance Plan" as approved by the Federal Energy Regulatory Commission in the Certificate of Public Convenience and Necessity issued on February 2, 2017.
21. The project must comply with the "Horizontal Directional Drilling Contingency and Inadvertent Release Plan" as approved by the Federal Energy Regulatory Commission in the Certificate of Public Convenience and Necessity issued on February 2, 2017.

The SC Department of Health and Environmental Control reserves the right to impose additional conditions on this Certification/Permit to respond to unforeseen, specific problems that might arise and to take any enforcement action necessary to ensure compliance with State standards.

A copy of the staff assessment and related file information are available for review. For a copy of the staff assessment contact Alicia M Rowe, the project manager, at 803-898-4333.

The final Water Quality Certification will be issued with conditions pursuant to the permitting requirements of R. 19-450, *Permits for Construction in Navigable Waters*, unless there is a timely request for review of the Department Decision based on water quality or water use impacts.

The issuance of this Notice of Department Decision represents a final staff decision that may be appealed. Please see the attached appeal procedures for information regarding board review of this staff decision. For parties considering appeal of this decision beyond board review, please take note of 15 U.S.C.A. 717r of the Natural Gas Act.



Chuck Hightower, Manager
Water Quality Certification
and Wetlands Section

South Carolina Board of Health and Environmental Control

Guide to Board Review

Pursuant to S.C. Code Ann. § 44-1-60

The decision of the South Carolina Department of Health and Environmental Control (Department) becomes the final agency decision fifteen (15) calendar days after notice of the decision has been mailed to the applicant, permittee, licensee and affected persons who have requested in writing to be notified, unless a written request for final review accompanied by a filing fee in the amount of \$100 is filed with Department by the applicant, permittee, licensee or affected person.

Applicants, permittees, licensees, and affected parties are encouraged to engage in mediation or settlement discussions during the final review process.

If the Board declines in writing to schedule a final review conference, the Department's decision becomes the final agency decision and an applicant, permittee, licensee, or affected person may request a contested case hearing before the Administrative Law Court within thirty (30) calendar days after notice is mailed that the Board declined to hold a final review conference. In matters pertaining to decisions under the South Carolina Mining Act, appeals should be made to the South Carolina Mining Council.

I. Filing of Request for Final Review

1. A written Request for Final Review (RFR) and the required filing fee of one hundred dollars (\$100) must be received by Clerk of the Board within fifteen (15) calendar days after notice of the staff decision has been mailed to the applicant, permittee, licensee, or affected persons. If the 15th day occurs on a weekend or State holiday, the RFR must be received by the Clerk on the next working day. RFRs will not be accepted after 5:00 p.m.
2. RFRs shall be in writing and should include, at a minimum, the following information:
 - The grounds for amending, modifying, or rescinding the staff decision;
 - a statement of any significant issues or factors the Board should consider in deciding how to handle the matter;
 - the relief requested;
 - a copy of the decision for which review is requested; and
 - mailing address, email address, if applicable, and phone number(s) at which the requestor can be contacted.
3. RFRs should be filed in person or by mail at the following address:
South Carolina Board of Health and Environmental Control
Attention: Clerk of the Board
2600 Bull Street
Columbia, South Carolina 29201
Alternatively, RFR's may be filed with the Clerk by facsimile (803-898-3393) or by electronic mail (boardclerk@dhec.sc.gov).
4. The filing fee may be paid by cash, check or credit card and must be received by the 15th day.
5. If there is any perceived discrepancy in compliance with this RFR filing procedure, the Clerk should consult with the Chairman or, if the Chairman is unavailable, the Vice-Chairman. The Chairman or the Vice-Chairman will determine whether the RFR is timely and properly filed and direct the Clerk to (1) process the RFR for consideration by the Board or (2) return the RFR and filing fee to the requestor with a cover letter explaining why the RFR was not timely or properly filed. Processing an RFR for consideration by the Board shall not be interpreted as a waiver of any claim or defense by the agency in subsequent proceedings concerning the RFR.
6. If the RFR will be processed for Board consideration, the Clerk will send an Acknowledgement of RFR to the Requestor and the applicant, permittee, or licensee, if other than the Requestor. All personal and financial identifying information will be redacted from the RFR and accompanying documentation before the RFR is released to the Board, Department staff or the public.
7. If an RFR pertains to an emergency order, the Clerk will, upon receipt, immediately provide a copy of the RFR to all Board members. The Chairman, or in his or her absence, the Vice-Chairman shall based on the circumstances, decide whether to refer the RFR to the RFR Committee for expedited review or to decline in writing to schedule a Final Review Conference. If the Chairman or Vice-Chairman determines review by the RFR Committee is appropriate, the Clerk will forward a copy of the RFR to Department staff and Office of General Counsel. A Department response and RFR Committee review will be provided on an expedited schedule defined by the Chairman or Vice-Chairman.
8. The Clerk will email the RFR to staff and Office of General Counsel and request a Department Response within eight (8) working days. Upon receipt of the Department Response, the Clerk will forward the RFR and Department Response to all Board members for review, and all Board members will confirm receipt of the RFR to the Clerk by email. If a Board member does not confirm receipt of the RFR within a twenty-four (24) hour period, the Clerk will contact the Board member and confirm receipt. If a Board member believes the RFR should be considered by the RFR Committee, he or she will

respond to the Clerk's email within forty-eight (48) hours and will request further review. If no Board member requests further review of the RFR within the forty-eight (48) hour period, the Clerk will send a letter by certified mail to the Requestor, with copy by regular mail to the applicant, permittee, or licensee, if not the Requestor, stating the Board will not hold a Final Review Conference. Contested case guidance will be included within the letter.

NOTE: If the time periods described above end on a weekend or State holiday, the time is automatically extended to 5:00 p.m. on the next business day.

9. If the RFR is to be considered by the RFR Committee, the Clerk will notify the Presiding Member of the RFR Committee and the Chairman that further review is requested by the Board. RFR Committee meetings are open to the public and will be public noticed at least 24 hours in advance.
10. Following RFR Committee or Board consideration of the RFR, if it is determined no Conference will be held, the Clerk will send a letter by certified mail to the Requestor, with copy by regular mail to the applicant, permittee, or licensee, if not the Requestor, stating the Board will not hold a Conference. Contested case guidance will be included within the letter.

II. Final Review Conference Scheduling

1. If a Conference will be held, the Clerk will send a letter by certified mail to the Requestor, with copy by regular mail to the applicant, permittee, or licensee, if not the Requestor, informing the Requestor of the determination.
2. The Clerk will request Department staff provide the Administrative Record.
3. The Clerk will send Notice of Final Review Conference to the parties at least ten (10) days before the Conference. The Conference will be publically noticed and should:
 - include the place, date and time of the Conference;
 - state the presentation times allowed in the Conference;
 - state evidence may be presented at the Conference;
 - if the conference will be held by committee, include a copy of the Chairman's order appointing the committee; and
 - inform the Requestor of his or her right to request a transcript of the proceedings of the Conference prepared at Requestor's expense.
4. If a party requests a transcript of the proceedings of the Conference and agrees to pay all related costs in writing, including costs for the transcript, the Clerk will schedule a court reporter for the Conference.

III. Final Review Conference and Decision

1. The order of presentation in the Conference will, subject to the presiding officer's discretion, be as follows:
 - Department staff will provide an overview of the staff decision and the applicable law to include [10 minutes]:
 - Type of decision (permit, enforcement, etc.) and description of the program.
 - Parties
 - Description of facility/site
 - Applicable statutes and regulations
 - Decision and materials relied upon in the administrative record to support the staff decision.
 - Requestor(s) will state the reasons for protesting the staff decision and may provide evidence to support amending, modifying, or rescinding the staff decision. [15 minutes] *NOTE: The burden of proof is on the Requestor(s)*
 - Rebuttal by Department staff [15 minutes]
 - Rebuttal by Requestor(s) [10 minutes]

Note: Times noted in brackets are for information only and are superseded by times stated in the Notice of Final Review Conference or by the presiding officer.
2. Parties may present evidence during the conference; however, the rules of evidence do not apply.
3. At any time during the conference, the officers conducting the Conference may request additional information and may question the Requestor, the staff, and anyone else providing information at the Conference.
4. The presiding officer, in his or her sole discretion, may allow additional time for presentations and may impose time limits on the Conference.
5. All Conferences are open to the public.
6. The officers may deliberate in closed session.
7. The officers may announce the decision at the conclusion of the Conference or it may be reserved for consideration.
8. The Clerk will mail the written final agency decision (FAD) to parties within 30 days after the Conference. The written decision must explain the basis for the decision and inform the parties of their right to request a contested case hearing before the Administrative Law Court or in matters pertaining to decisions under the South Carolina Mining Act, to request a hearing before the South Carolina Mining Council. The FAD will be sent by certified mail, return receipt requested.
9. Communications may also be sent by electronic mail, in addition to the forms stated herein, when electronic mail addresses are provided to the Clerk.

The above information is provided as a courtesy; parties are responsible for complying with all applicable legal requirements.

STAFF ASSESSMENT

SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (DHEC)
DIVISION OF WATER QUALITY
WATER QUALITY CERTIFICATION AND WETLANDS SECTION

I. Background Information

Applicant: Dominion Resources Services, Inc. P/N Number: SAC 2015-00709

P/N Date: October 18, 2016, and November 21, 2016 Date Received: September 23, 2016

P/N Close: November 18, 2016, and December 6, 2016

Section of Applicable Federal Law: () Section 10 (x) Section 404 (x) Section 401

Section of Applicable State Law: () Coastal Zone Consistency (x) Construction in Navigable Waters

Brief explanation and purpose of activity:

The proposed work consists of temporarily impacting approximately 520 linear feet of stream and permanently impacting approximately 54 linear feet of stream to construct, install, operate, and maintain a below-ground, 12-inch diameter natural gas pipeline that will extend approximately 55 miles through Spartanburg, Laurens, Newberry, and Greenwood Counties. According to the applicant, the purpose of the proposed project is to improve regional energy security, system resiliency, and to meet increasing demand for natural gas from local commercial, industrial, and power generation customers.

To view additional information about this project, including the State Public Notice, please visit DHEC's website: <http://www.dhec.sc.gov/dominionpipeline>

Waterbody Name(s): Unnamed tributaries to the South Tyger River, Ferguson Creek, Jimmies Creek, Twomile Creek, the Enoree River, Strouds Creek, Duncan Creek, Long Branch, North Creek, Watkins Creek, Mills Creek, the Saluda River (at Lake Greenwood); and Buckhead Creek, Long Branch, Beards Ford Creek, Pages Creek, South Tyger River, Enoree River, Little River, and Saluda River.

Water Classification: FW

Waterbody Location: The project originates from the existing Moore Purchase Facility near the intersection of Pearson Town Road and Moore Duncan Highway in Spartanburg County, South Carolina (Lat.: 34° 50' 45.33" N, Long.: -82° 0' 31.08" W). The project corridor will extend through Spartanburg, Laurens, Newberry, and Greenwood Counties, and will end at the Chappells Tie-in within existing Dominion Carolina Gas facilities near Chappells, in Greenwood County, South Carolina (Lat.: 34° 9' 25.03" N, Long.: -81° 54' 23.75" W).

Waterbodies on 2014 303(d) List?

() Yes

(x) No

The pipeline corridor does pass through watersheds (Tyger River, Enoree River, and Little River watersheds) which have Total Maximum Daily Loads (TMDLs) for fecal coliform established (In 2012, E. coli replaced fecal coliform as the State Water Quality Standard for pathogens in fresh water, so E. coli will be used in the remainder of this assessment.). However, only one of the waterbodies that will be impacted by the project is in the vicinity of an impaired station, and the proposed work is not expected to increase E. coli loading. Recreational uses are impaired at Station RS-12082 due to E. coli contraventions on the main stem of an unnamed tributary to the Enoree River. The crossing will occur at an upper branch of this unnamed tributary, approximately 1.6 miles upstream of the station. The proposed crossing should not contribute to the

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E. coli impairment at that station.

II. Project Description

The project involves the construction, installation, operation, and continual maintenance of operational facilities associated with a below-ground, 12-inch diameter natural gas transmission pipeline that will extend approximately 55 miles through Spartanburg, Laurens, Newberry, and Greenwood Counties. The construction of the pipeline will temporarily impact 520 linear feet of streams by crossing 41 Waters of the United States (WOTUS) using the open cut method. These temporary impacts will involve the excavation of a 10-foot wide trench within the streambed where the pipe will be installed, and for streams that have flow at the time of construction, temporary flume seals above and below the trench with a flume connecting them will be installed to maintain flow downstream during construction. After the pipeline has been installed in the crossing, the trench will be backfilled, the flume seals and flume will be removed, the stream will be returned to its pre-construction condition, and the area will be stabilized. During construction, material excavated from the stream will be stored in designated spoil storage areas located in uplands with a buffer zone between the storage area and the stream. After construction, routine vegetation mowing or clearing will be limited to allow a riparian buffer at least 25 feet wide from the waterbody's ordinary high water mark on either side of the waterbody, with a 10-foot-wide corridor over the center of the pipeline maintained in an herbaceous state. Trees located within 15 feet on either side of the pipeline that have roots that could compromise the integrity of the pipeline coating will be cut and removed from the ROW.

Two (2) of the new, permanent access roads associated with the project will require the installation of culvert crossings within streams, resulting in permanent impacts to approximately 54 linear feet of stream. One access road (AR-155) crossing will involve a 24-foot long concrete bottomless arch culvert that will be 14 feet wide and four (4) feet high. The second crossing (AR-156) will be a 30-foot long, 36-inch reinforced concrete pipe (RCP). A stream bypass will be used during the construction of each culvert to maintain water flow.

The applicant will utilize horizontal directional drilling (HDD) or bore methods for 37 aquatic crossings, including all wetland and State Navigable Water crossings, in order to avoid impacts to WOTUS where feasible. Entry and exit work for the HDD and bore crossings will occur at least 50 feet from WOTUS. The HDD crossings beneath the State Navigable Waters (South Tyger River, Enoree River, Little River, and Saluda River) will have approximately 25 feet of cover between the riverbeds and the pipeline.

According to the applicant, the purpose of the proposed project is to improve regional energy security, system resiliency, and to meet increasing demand for natural gas from local commercial, industrial, and power generation customers. The project has received provisional Section 404 authorization from the United States Army Corps of Engineers under Nationwide Permit 12. However, the project involves 43 aquatic site crossings, which does not meet Specific Condition 1 of the 2012 Section 401 Water Quality Certification for Nationwide Permit 12. DHEC therefore reviewed the project as an application for an individual Section 401 Water Quality Certification and for consistency with R. 19-450, *Permit for Construction in Navigable Waters*.

A. Fill

1. Is fill required?

Yes

Temporary fill material will be placed in streams in order to construct the flume seals and flume systems. This material will be removed completely upon completion of each crossing. Trenches excavated into the stream bed will be backfilled to original contours with the material removed from the trench. Affected aquatic resources will be returned to pre-project conditions at the pipeline crossings. Two (2) permanent culverts will be placed in streams, one (1) in Long Branch (bottomless arch culvert) and one (1) in an unnamed tributary (36-inch RCP), to allow for the construction of two permanent (2) access roads, AR-155 and AR-156.

No. If no, proceed to Section II. B.

2. Is the fill temporary?

The fill associated with the pipeline crossings will be temporary. The two (2) new culverts will be permanent.

B. Excavation

1. Is excavation required?

Yes

Where HDD and bore installation methods are not feasible, ten (10)-foot wide trenches will be temporarily excavated into stream beds in order to allow the pipeline to cross streams. The depth of these trenches will vary based on site-specific conditions. All trenches will be backfilled with the material removed from them upon completion of pipeline installation at each crossing, and the disturbed areas will be returned to pre-construction contours and stabilized.

No. If no, proceed to Section II. C.

2. Is dredge spoil site adequately sized for the amount of material?

Yes

Dredge spoil will temporarily be stored within the construction ROW, at least 10 feet from adjacent waterbodies. Best Management Practices (BMPs) such as silt fencing will be utilized to prevent re-entry to adjacent waterbodies. Dredge spoil will be used to backfill the trenches after the pipeline has been installed. Any excess spoil will be disposed of and stabilized on uplands.

No

C. Other Impacts

Yes

Cleared wetlands or riparian areas

As discussed above, post-construction routine vegetation mowing or clearing will be limited to allow a riparian buffer at least 25 feet wide from the waterbody's ordinary high water mark on either side of the waterbody, with a 10-foot-wide corridor over the center of the pipeline maintained in an herbaceous state. Trees located within 15 feet on either side of the pipeline that have roots that could compromise the integrity of the pipeline coating may be cut and removed from the ROW. Where the pipeline is installed under wetlands using HDD or bore methods, temporary hand clearing over the centerline of the pipe may be necessary for construction purposes, such as electric guide wires. In areas where the pipeline is ten (10) feet or less below the ground surface of wetlands, clearing an area ten (10) feet wide over the pipeline may be necessary to prevent tap roots from impacting the pipe. Since the pipeline will be installed under wetlands using HDD or bore methods, the width of the entire ROW will not need to be cleared during construction or maintained after construction, which will allow the applicant to avoid clearing many of the jurisdictional wetlands within the project corridor.

Flooding wetlands

Navigation

No

D. Project Modification

Was the project modified from the original public notice?

Yes

No

The project's proposed impacts to WOTUS have not been modified from the original public notice. However, some details included in the public notice have been clarified. The application stated that the proposed pipeline would be approximately 53.5 miles long. However, due to changes in the pipeline alignment made to address various considerations, the proposed pipeline will be approximately 55 miles long. The total length may change slightly due to conditions encountered during construction, however, impacts to WOTUS will not be different from what is in the original public notice.

Additionally, in the public notice, DHEC stated that the construction within each impacted stream would last no longer than 24 hours, then all contours will be restored to previous conditions. DHEC received clarification about this after the public notice had been issued. Where there is no flow at the time of construction, instream activities within minor waterbodies (less than or equal to 10 feet wide at the water's

edge) must be completed within 24 hours. Where there is no flow at the time of construction, instream activities within intermediate waterbodies (greater than 10 feet wide but less than or equal to 100 feet wide at water's edge) must be completed within 48 hours, unless conditions make that infeasible. Open cut crossings requiring a flume to maintain downstream flow must be completed and restored in as little time as is feasible, which will vary based on site-specific conditions.

E. Compensatory Mitigation

Is compensation required by DHEC?

Yes

No

Permanent impacts are less than 0.10-acre of jurisdictional wetlands or 100 linear feet of jurisdictional streams, and therefore, compensatory mitigation is not required. Open cut stream crossings will be required to be returned to pre-construction contours and stabilized appropriately.

F. Remediation

Is remediation required?

Yes

No

G. Nonpoint Source Concerns

1. Are water quality impacts from nonpoint sources expected?

Yes

Temporary

No

Water quality impacts from nonpoint sources will be minimized and should not contravene the water quality standards or existing and classified uses of the involved water bodies, if the applicant uses best management practices (see conditions in Section VIII of this Staff Assessment) during and after the project.

2. Are any enforceable nonpoint controls required by DHEC?

Yes

No

Water quality impacts from nonpoint sources will be minimized and should not contravene the water quality standards or existing and classified uses of the involved water bodies, if the applicant adheres to the conditions in Section VIII of this Staff Assessment during and after the project.

III. Environmental Assessment

A. Is the proposed activity water dependent?

Yes

No

B. Are there feasible alternatives to the proposed activity?

Yes

No

In designing the proposed project, and through the Federal Energy Regulatory Commission's (FERC) development of an Environmental Assessment (EA) in compliance with the requirements of the National Environmental Policy Act (NEPA) and the FERC's regulations, numerous alternatives were investigated. These alternatives included the no-action alternative, system alternatives, route alternatives, minor route variations, and compressor station location alternatives. These alternatives are discussed below using information provided by the applicant and from the FERC's EA.

Project Purpose

According to the applicant, the purpose of the proposed project is to improve regional energy security, system resiliency, and to meet increasing demand for natural gas from local commercial, industrial, and power generation customers. The proposed Moore to Chappells Natural Gas Pipeline is a segment of the Transcontinental Gas Pipeline (Transco) to Charleston Project. The additional natural gas transportation capacity that will be provided by the Transco to Charleston Project (80,000 dekatherms per day) is fully subscribed, with South Carolina Electric & Gas (SCE&G) contracted for approximately 94% of the capacity, and two industrial customers (Flakeboard Company Ltd. and Wyman-Gordon Company) contracted for the remainder. In correspondence to the FERC, SCE&G stated that the company will use this additional capacity to meet the growing demand for natural gas in their service area to serve industrial, commercial, and residential customers, and to further their ongoing efforts to reduce both customer costs and greenhouse gas emissions by using it at their existing electric generation facilities. They also stated that the gas load in these markets has grown in demand among their customers, and that the new pipeline is essential to ensure adequate capacity to serve existing customers and provide a reasonable amount of reserve capacity to serve continued growth and potential economic development.

No-Action Alternative

Under the no-action alternative, the applicant would not construct the project, and none of the proposed impacts to WOTUS would occur. In the FERC's EA, the FERC concluded that the no-action alternative would not meet the objectives of the project, and that there are no alternative projects that have been planned at this time to meet the purpose and need of the project. The FERC stated that assuming that there continues to be demand for service by the customers discussed above, it is likely that other natural gas pipelines would be proposed, which would likely have similar or greater impact than the proposed project. Therefore, the FERC determined that the no-action alternative was not a feasible alternative that could meet the project's purpose, and dismissed it.

System Alternatives

According to the FERC's EA, system alternatives would utilize other existing, modified, or proposed facilities to meet the objectives of the proposed project. A system alternative would make it unnecessary to construct all or part of the project, although modifications or expansions of existing or proposed pipeline systems could be required.

According to the EA, there are two (2) natural gas pipeline systems currently serving the project area. The Clinton Newberry Natural Gas Authority pipeline system consists of primarily 2-inch diameter lines in Spartanburg, Greenville, Laurens, and Newberry Counties. These are small-capacity pipelines that could not meet the maximum daily transportation requirement of the proposed project. A second pipeline system owned and operated by the applicant is an eight (8)-inch diameter pipeline that runs 40 miles southeast from the Moore Compressor Station, then turns and runs 41 miles southwest to Chappells. According to the applicant, both systems are currently serving customers in South Carolina and would not have capacity to support the proposed project's subscribed customers without modification. The modifications to the applicant's existing pipeline that would be necessary to meet the additional capacity needs would include approximately 1,400 horsepower (hp) of compression at Dominion's existing Moore Compressor Station, a new 2,800-hp compressor station near the City of Greenwood, 3,600 hp of compression near Dorchester, and approximately 80 miles of 12-inch pipeline from the Moore Compressor Station to the new Greenwood Compressor Station. This alternative pipeline would be approximately 45 percent longer than the proposed pipeline, and according the EA would be expected to have significantly larger environmental impacts, even accounting for the large proportion of collocation. Neither of these existing systems were considered to be feasible alternatives to the proposed project.

Alternative Pipeline Routes

The applicant and the FERC's EA evaluated four (4) alternative routes to the proposed project's route, as described below:

- Proposed Route – The Proposed Route is approximately 55 miles in length, and would run along an existing Dominion Carolina Gas ROW for approximately two (2) miles, and then along a cross-country route to Chappells.

- Alternative 1 – Alternative 1 is approximately 56 miles in length, and would run southwest of Moore along the ROW of an existing gas pipeline. South of the City of Laurens, it would follow an existing electrical transmission ROW toward the southeast, then follow an existing Dominion pipeline to Chappells.
- Alternative 2 – Alternative 2 is approximately 55 miles long, and would run southeast along existing Dominion ROW, Interstate 26, and secondary road ROWs to Chappells.
- Alternative 3 – Alternative 3 is approximately 54 miles long and would run southwest of Moore along the ROW of an existing pipeline, then southeast along an electrical transmission ROW. South of Clinton, Alternative 3 would traverse forested and agricultural land.
- Alternative 4 – Alternative 4 is approximately 82 miles long, and would be collocated with the existing eight (8)-inch Dominion pipeline, running southeast of Moore for approximately 40 miles to Carlisle. From Carlisle, Alternative 4 would run southwest for approximately 41 miles towards Chappells. Approximately 37 miles of Alternative 4 would traverse Sumter National Forest.

According to the applicant, comparison of the proposed route with the four (4) major route alternatives listed above was completed with a desktop-level analysis using 28 evaluation criterion, or factors, as well as additional engineering constraints. The step-wise alternatives analysis process used Geographic Information Systems (GIS) modeling of publicly available data to identify three (3) broad corridors (cross-country, collocated utility, or collocated roads routes) through which the project was generally suitable. Avoidance features were also applied to refine the model. This resulted in the development of the Proposed Route, Alternative 1, and Alternative 2, which were identified as providing the greatest avoidance and minimization of crossings between the terminal ends of the project. Alternative 3 was developed as a composite of the Proposed Route and Alternative 1, and Alternative 4 was included to represent a collocation option along the existing Dominion Carolina Gas natural gas pipeline located to the east. The 28 evaluation factors and engineering considerations were then used to analyze the five (5) routes, which resulted in the Proposed Route being chosen.

In order to compare the alternatives equally, they were analyzed at the same level, so the analysis did not include variations that were made to the Proposed Route after detailed planning began (which increased the total length of the Proposed Route by approximately four (4) miles due to land restrictions, field survey results, construction methods, etc). The 28 evaluation factors are grouped into five (5) broader categories: Route Dimensions, Environmental, Cultural, Engineering, and Land Use. Table 1, on the following page, provides a comparison (based on desktop analysis) of nine (9) of the 28 evaluation factors for the five (5) routes considered in this analysis.

Overall, the Proposed Route would reduce or equal potential impacts associated with 17 of the 28 factors as compared to Alternatives 1, 3, and 4. Constraints associated with these alternatives include:

- Route dimension issues related to additional total length, area of study corridor, and overall potential corridor impacts (Alternatives 1 and 3).
- Environmental and water quality concerns such as the number of wetlands within the corridor and thereby proximity to work (Alternatives 1 and 3), number of wetland crossings (1, 3, 4), number of stream crossings (1, 3, 4), area of hydric soil (1 and 3), and intersection with known underground utility leakages (1 and 3).
- Cultural matters including proximity to community centers, and State/National Forest impacts (Alternative 4).
- Engineering constraints including the number of railroad and state road crossings, the need for additional access roads, electric transmission line crossings, and slopes and side slopes (Alternatives 3 and 4).
- Land use impacts to developed lands, residential parcels, and overall total parcels (Alternatives 1 and 3).

From the evaluation, it was evident that the overall combination of the above factor constraints was unfavorable for Alternatives 1, 3, and 4 in comparison to the Proposed Route.

Table 1: Moore to Chappells Pipeline – Major Route Alternatives

Group	Evaluation Factor	Unit	Proposed Route	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Route Dimensions	Length	miles	50.4	56.0	55.0	53.7	81.7
	Study Corridor Width	feet	400	400	400	400	200
Environmental	Wetlands Crossed	count	20	53	34	48	54
	Total Stream Crossings	count	65	73	43	75	110
	Intermediate and Major Streams Crossed	count	22	13	17	16	30
Cultural	State or National Forests	acres	0	0	35	0	901
Land Use	Agricultural Land	acres	635	1129	523	980	548
	Forested Land	acres	1610	1275	663	1342	1329
	Residential Parcels Intersected	count	181	398	164	333	0

This table was adapted from tables provided by the applicant in letters dated December 27, 2016, and February 13, 2017.

Since Alternative 2 was the closest to the Proposed Route in impacts, and had less stream crossings, less acres spanned with hydric soils, and less agricultural and forest land acres, the applicant gave Alternative 2 additional consideration during their evaluation of the alternatives. According to the applicant, through statistical analysis and professional judgement, it was determined that the potential benefits of using Alternative 2 were offset by possible negative outcomes and concerns associated with other evaluation factors, including crossings of:

- Approximately eight (8) percent more distance and therefore increased acreage of land disturbance (4.6 miles).
- Known leaking underground storage tanks (environmental/water quality and engineering concerns).
- Community centers (cultural concerns).
- National Forest (environmental and cultural concerns).
- State roads (engineering concerns).
- Natural gas pipeline (engineering concerns).
- Developed lands (cultural and engineering concerns).
- Total parcels (cultural and engineering concerns).

Several of these factors also raised secondary concerns that relate to water quality, such as crossing known contamination sites. Given these negative factors, the evaluation weighed against Alternative 2 and in favor of the Proposed Route.

As a result of this analysis, the FERC's EA concluded that "The alternatives to the Moore to Chappells Pipeline would result in more impacts on wetlands than the proposed route. In addition, two of the route alternatives would result in impacts on Sumter National Forest, and two alternatives would result in increased impacts on residential areas. Therefore, we conclude that these alternative pipeline routes for the Moore to Chappells

Pipeline are not environmentally preferred and were not considered further.”

DHEC requested additional information about these alternatives in order to ensure that the Proposed Route was the only feasible alternative that reduced impacts to WOTUS to the maximum extent practicable. DHEC requested specific acreage of wetlands and linear footage of streams that would be avoided by utilizing the Proposed Alternative. However, the early planning-level alternatives selection process is based on desktop analysis rather than direct field surveys of each alternative considered, which is consistent with customary industry practice. In order to estimate the direct wetland and stream impacts for the alternatives, the routes would require on-the-ground environmental surveys, civil survey, and engineering analysis.

Since Alternative 4 would be entirely collocated along an existing Dominion Carolina Gas natural gas pipeline and would have no impacts to residential lots, DHEC requested additional information Alternative 4, including what would be required for a new pipeline to be constructed in the Sumter National Forest, where a portion of the existing pipeline is located. The applicant reiterated that since Alternative 4 would require an additional 30 miles of pipeline, it would result in increased land disturbance and waterbody impacts, increased costs to the applicant’s customers, and unnecessary impacts to the National Forest, even with the new pipeline being collocated with the existing pipeline (the reasons for this are explained below). As shown in Table 1, Alternative 4 would cross 54 wetlands and 110 streams, 30 of which are considered intermediate or major streams. In the desktop analysis, the Proposed Route would cross 20 wetlands and 65 streams, 22 of which are considered intermediate or major streams. The 901 acres of National Forest land within the study corridor for Alternative 4 would require additional ROW, and would present a higher probability of encountering protected and/or sensitive species due to controlled public access and limited development. The applicant considers National Forests to be sensitive resources, and consistent with the company’s approach to other sensitive resources, impacts should be minimized or avoided wherever possible. For the proposed project, these impacts are avoidable since a shorter and more direct route outside of National Forest land, with less impacts to WOTUS, is available. The crossing of Sumter National Forest played a role in ruling out Alternative 2 for the same reasons.

DHEC asked the applicant if collocating the pipeline with existing ROW would reduce impacts to WOTUS since the streams and wetlands crossed would already be within a ROW. According to the applicant, collocation with an existing utility line does not mean that no new impacts will occur since new permanent ROW, and likely additional temporary construction ROW, would be necessary. Additionally, any impacts to wetlands or streams within an existing ROW is considered an impact with regard to Section 404 of the Clean Water Act, even if the WOTUS had been previously impacted.

According to the applicant, paralleling existing pipelines in close proximity that are cathodically protected from corrosion is not considered to be good engineering practice. This is because of the potential for the corrosion protection systems to conflict, potentially causing pipeline integrity issues to one or both pipelines, increased maintenance requirements, and potentially compromised pipeline safety. Parallel pipelines would need to be at least 10-15 feet apart from each other in order to reduce this risk. Additionally, sharing a common ROW with an existing pipeline can pose construction and maintenance challenges due to industry practice that does not allow for parallel travel of heavy construction equipment on top of an existing pipeline. Close paralleling of an existing pipeline also increases the risk for damages during construction.

The applicant provided information about their general criteria for collocation, which includes the location and orientation of existing facilities relative to new pipeline, the nature of terrain along existing facilities, and the nature of land uses along the existing facilities. Additionally, any route alternative must also consider technical feasibility, constructability, environmental impact (including the number of waterbodies and wetlands crossed), landowner considerations (including existing land uses such as agricultural lands), natural areas, parks, and cultural resource areas, the total length of pipeline and related total land disturbance, as well as existing infrastructure for collocation purposes. The applicant also considers the additional burden that collocation may have on landowners with one or more existing utility easements.

DHEC also asked if the use of HDD or bore methods on the alternative routes could reduce impacts to WOTUS to enough of an extent that the impacts of an alternative become less than the Proposed Route. According to the applicant, estimating the length of pipeline that could be installed utilizing HDD or bore methods in each alternative would not provide a valid comparison, as the use of those methods depends upon site-specific factors such as terrain, side slopes, equipment accessibility, and other environmental and engineering variables that require direct field analysis and engineering design. These factors vary widely by route and crossing location, and cannot be accurately estimated. Site-specific engineering plans, which are not feasible for this type of alternatives analysis, are necessary for determining the length of HDD crossings.

Based on the applicant's analysis of the alternatives described above, the information presented in FERC'S EA, and the additional information that the applicant provided to DHEC, it was determined that there is not a feasible alternative to the Proposed Route which would have less impacts to WOTUS.

Minor Route Variations

The applicant and the FERC's EA also evaluated a number of route variations for the Moore to Chappells Pipeline to avoid or minimize impacts on geographically distinct and localized resources, such as wetlands. They were also considered to resolve engineering or constructability issues, or address stakeholder concerns, where feasible. The applicant evaluated 42 minor route variations, and 23 were implemented. Route variations were not implemented where they would increase impacts to other landowners, impacts to WOTUS or other environmental impacts, constructability issues, or topographic issues, or where the variation would result in the pipeline passing through a site with known contamination issues. Additional details about these variations can be found in the FERC's EA.

Compressor Station Alternatives

All proposed additional compression facilities associated with this project will be constructed at the applicant's existing compressor stations on previously disturbed land. The FERC's review of the proposed project found that environmental impacts associated with compressor stations have been minimized, and no further alternative sites were evaluated.

C. Water Quality Assessment

Water Quality Standards and Designated Uses

The FERC-approved "Transco to Charleston Project Upland Erosion Control, Revegetation, and Maintenance Plan" (T2C Plan) and "Transco to Charleston Project Wetland and Waterbody Construction and Mitigation Procedures" (T2C Procedures) documents outline numerous BMPs and other measures that will be taken to protect water quality in the vicinity of the proposed project. BMPs, such as silt fencing, will be utilized between construction areas and waterbodies to prevent movement of sediment offsite. Where the pipeline corridor parallels a stream, at least 15 feet of undisturbed riparian buffer will be left between the construction and the stream, unless it would result in a great environmental impact. Additional Temporary Workspace Stations (ATWS) will be located at least 50 feet back from waterbody boundaries unless a reduced setback is justified and approved by FERC. Double silt fences shall be employed where ATWS areas are in close proximity to waterbodies. Spoil placement within the construction ROW will be no closer than 10 feet from the water's edge, and silt fencing will be utilized to prevent spoils from entering the waterbody.

For open cut crossings that will be completed using the flume crossing method (which will be utilized in streams that are wet at the time of crossing), the flumes will be installed prior to trenching occurs within the stream. The flume pipe(s) will be properly aligned to prevent bank erosion and streambed scour, and the flume pipe(s) will not be removed until construction work and final cleanup and restoration of the streambed and bank is complete. This will preserve downstream flow and aquatic life passage, as well as reduce sediment transport from instream activities and minimize impacts to stream turbidity. By utilizing HDD or bore methods for 37 of the 80 aquatic crossings, the applicant is preventing water quality impacts at those crossings.

Temporary trench plugs will be used at all open cut waterbody crossings to prevent diversion of water into upland portions of the pipeline trench, and to keep any accumulated trench water out of the waterbody. Trench dewatering will occur in a manner that does not cause erosion and does not result in silt-laden water flowing into any waterbody. This will prevent turbidity impacts to the stream, as well as prevent the influx of nutrients, metals, or chemicals bound to sediment particles from impacting water quality within adjacent waterbodies.

Erosion control fabric (or a functional equivalent) and other bank stabilization features will be installed on waterbody banks at the time of final bank recontouring in order to prevent erosion of the stream banks into the stream. Disturbed riparian areas will be revegetated after construction with native species of conservation grasses, legumes, and woody species similar in density to adjacent undisturbed lands. For permanent ROW, clearing of the vegetation within 25 feet on either side of waterbodies will be limited to a 10-foot wide corridor over the pipeline. The corridor shall be maintained in an herbaceous state. Trees located within 15 feet on either side of the pipeline that have roots that could compromise the integrity of the pipeline coating will be cut and removed. Herbicides or pesticides will not be used within 100 feet of a wetland or riparian area, except as allowed by the appropriate federal or state agency, and if they are used, a 50-foot buffer on either side of the stream crossing will be required to be established where no herbicide or pesticide treatments would be allowed. Fertilizers, lime, or mulch will not be used in these areas unless required in writing by the appropriate federal or state agency.

At least one Environmental Inspector (EI) is required by FERC for each construction spread during construction and restoration work. These Environmental Inspectors will inspect construction activities for compliance with the requirements of the T2C Plan, T2C Procedures, environmental conditions of the FERC's Orders, other environmental permits and approvals (including the 401 Water Quality Certification), and environmental requirements in landowner easement agreements. EIs will inspect and ensure the maintenance of temporary erosion control measures at least on a daily basis in areas of active construction or equipment operation; on a weekly basis in areas with no construction or equipment operation; and within 24 hours of each 0.5-inch of rainfall. This inspection frequency is more stringent than what is required by DHEC's Construction General Permit for land disturbance activities. This should ensure that the measures taken to protect water quality will remain effective throughout the period of disturbance and until restoration efforts are completed.

The measures described above should be protective of water quality in the vicinity of the project. Ambient conditions should resume once work is completed. Water quality standards will not be contravened, and designated uses will not be removed. Potential adverse impacts to water quality can be minimized through the use of BMPs described above, and the conditions described in Section VIII of this Staff Assessment.

IV. Public Comments Received and Summary of Comments

A. S. C. Department of Natural Resources (SCDNR)

Date: November 14, 2016

- Does not object to project provided the applicant adheres to the conditions in Section VIII.
- Hold in abeyance.
- Objects to the proposed project, see discussion in Section VI, Conclusions.
- No objection.
- Has elected to not conduct an investigation nor provide any comments.

In a letter dated November 14, 2016, the SCDNR provided clarification about construction details mentioned in the public notice, which is discussed above in Section II.D. The SCDNR also stated that their concerns regarding threatened or endangered species or species of conservation concern in the project area have been addressed through the FERC process for natural gas pipelines. The SCDNR stated that they find that the proposed work can be accomplished with minimal adverse impacts to natural resources and did not offer any objections to permit issuance provided that 15 stipulations are incorporated as permit conditions. In a letter dated December 27, 2017, the applicant provided information explaining how they would comply with each stipulation that the SCDNR recommended. All, except for two (2) of the requested stipulations will be included as conditions of the Certification,

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either as requested or with wording modifications to clarify intent. The first requested stipulation that will not be included states, "The project must be in compliance with any applicable floodplain, stormwater, land disturbance, or riparian buffer ordinances." DHEC does not have the authority to enforce local ordinances, and the applicant will have to comply with applicable local and state ordinances and regulations, regardless. The second requested stipulation that will not be included states, "Land disturbing activities must avoid encroachment into any wetland areas (outside the permitted impact area). Wetlands that are unavoidably impacted must be appropriately mitigated." The applicant will only be permitted to impact the WOTUS that were included in the public notice and the project drawings. In the applicant's December 27, 2016, letter, they stated that per Dominion's T2C Procedures, wetland boundaries and buffers must be clearly marked in the field with signs and/or highly visible flagging until construction-related ground disturbing activities are complete. Sediment barriers and other BMPs will be utilized to prevent construction activities from impacting WOTUS beyond the proposed temporary stream impacts and two (2) culverts. The Certification will include a condition requiring that the applicant comply with the T2C Procedures as proposed.

B. U. S. Fish and Wildlife Service (USFWS)

Date: NA

- Does not object to project provided the applicant adheres to the conditions in Section VIII.
- Hold in abeyance.
- Objects to the proposed project, see discussion in Section VI, Conclusions.
- No objection.
- Has elected to not conduct an investigation nor provide any comments.

While the USFWS did not provide any comments in response to DHEC's public notices for the proposed project, they were involved in the FERC's review, and on March 16, 2016, provided concurrence on the FERC's determination of the proposed project's potential impacts to Federally protected species, with the highest level of potential being "May Affect, Not Likely to Adversely Affect". On September 9, 2016, the USFWS stated that they had no objections to the project as proposed.

C. Upstate Forever (UF)

Date: December 6, 2016, and March 31, 2017

- Does not object to project provided the applicant adheres to the conditions in Section VIII.
- Hold in abeyance.
- Objects to the proposed project, see discussion in Section VI, Conclusions.
- No objection.
- Has elected to not conduct an investigation nor provide any comments.

UF submitted comments during the second public notice period in a letter dated December 6, 2016. UF submitted additional comments in a letter dated March 31, 2017, after DHEC held a Public Information Meeting about the project on March 21, 2017. The comments submitted in the two (2) letters and the responses from either the applicant and/or DHEC are summarized below.

Response to Upstate Forever Comments Dated December 6, 2016

Comment: The proposed project will cross three (3) Source Water Protection Areas, including intakes for the Woodruff Roebuck Water District, the City of Clinton, and the City of Newberry. The project will have lasting impacts on Piedmont streams, which have high biodiversity, and the 50-foot easement will increase habitat fragmentation and reduce shading of streams at the crossings. The application review should include permanent "clearing" impacts to WOTUS in the ROW. The scope of the project is immense and it will have cumulative impacts in excess of projects typical for the state. Sediment loading due to channel and floodplain instability would result from changes in erosion and deposition patterns, negatively impacting aquatic habitat in all four counties. The applicant proposes to minimize impacts by implementing BMPs according to its T2C Plan, but UF had been unable to obtain a copy of the document in order to review it.

Response: In a letter dated December 27, 2016, the applicant responded to UF's comments. At the FERC's request, the applicant has coordinated with the applicable source water area managers, and will notify them per their requirements when construction activities are to occur within three (3) miles or less upstream from a water supply

intake. Based on a recommendation from the SCDNR, the applicant will utilize a dry cut (flume crossing) method for streams that are wet at the time of construction, unless HDD or bore methods will be used. The flume method was adopted in order to mitigate impacts from impingement and entrainment of fish, fish eggs, and larvae relative to other dry cut methods. The flume method maintains stream flow through the construction area until construction is completed. The applicant has committed to complete these crossings in the minimum time necessary, will use BMPs as described in the T2C Procedures and T2C Plan to prevent migration of sediment, and will restore each stream crossing after the construction at that crossing is complete to ensure that impacts are temporary. In response to a Freedom of Information Act (FOIA) request from UF, DHEC provided UF with digital copies of both the T2C Procedures and the T2C Plan for their review on February 15, 2017.

According to the applicant's T2C Procedures, disturbed riparian areas will be revegetated after construction with native species of conservation grasses, legumes, and woody species, similar in density to adjacent undisturbed lands. The applicant will also ensure that all disturbed areas are successfully revegetated with wetland herbaceous and/or woody plant species. Based on the FERC's EA, long-term impacts associated with pipeline operations and maintenance will be relatively minor, and limited to periodic clearing of the vegetation within the permanent ROW at waterbody crossings that were not installed using HDD or bore methods. Clearing within 25 feet on either side of waterbodies will be limited to a 10-foot wide corridor over the pipeline being maintained in an herbaceous state, and trees located within 15 feet on either side of the pipeline that have roots that could compromise the integrity of the pipeline coating will be selectively cut and removed.

No routine vegetation mowing or clearing will be performed in riparian or wetland areas located between HDD entry and exit locations, preventing clearing impacts from occurring at those crossings. According to the applicant, herbicides will not be applied within riparian buffers, and according to the T2C Procedures, herbicides or pesticides may not be used within 100 feet of a wetland, except as allowed by the appropriate Federal or State agency. The applicant also used existing roads for the access roads, which will require only minor pruning of vegetation where necessary for construction equipment to access the pipeline ROW, minimizing the cumulative impacts of the proposed project.

Comment: UF mentioned that in a letter from the SCDNR to the FERC, dated November 30, 2015, the SCDNR had recommended that Dominion re-evaluate opportunities for maximizing use of existing ROWs and previously-disturbed corridors to further minimize habitat fragmentation and avoid sensitive natural and cultural resources. This would benefit species such as the red-cockaded woodpeckers, bald eagles, and other wildlife management areas and conservation focus areas. An area that UF has identified as a Conservation Focus Area (CFA) surrounds the confluence of Ferguson Creek with the Tyger River, and it would be affected by the proposed pipeline. Although the applicant has implemented minor route variations to reduce impacts in the CFA, the pipeline will still cross several streams in the area using trenching methods. The applicant should minimize impacts in this area by utilizing HDD or bore methods for stream and wetland crossings in the CFA.

Response: As required by NEPA and FERC's implementing regulations, the FERC EA considered alternatives to the proposed project. The alternatives evaluated are discussed above in Section III.B. The applicant and FERC utilized the following evaluation criteria to determine if an alternative is environmentally preferable: technical feasibility and practicality; significant environmental advantage over the proposed action; and ability to meet the project's stated objective. There are numerous considerations and constraints when collocating with existing ROW, as discussed in Section III.B, and collocating does not necessarily reduce the amount of impact a new pipeline will have. For the four (4) route alternatives evaluated, which would be collocated with existing natural gas pipelines, electrical transmission lines, and/or road ROW, technical feasibility and/or increased impacts to residential parcels, forested land, National Forest land, agricultural land, and/or WOTUS, among other factors, resulted in the alternatives being deemed less environmentally preferable by the FERC, and they are not considered to be feasible alternatives to the proposed route. DHEC requested and received additional information about these alternatives, and agrees with the FERC's determination based on the additional information received, as described in Section III.B. Additionally, utilizing HDD or bore methods is limited to where site-specific conditions make it feasible. The applicant is avoiding impacts to WOTUS using these methods where it is feasible to do so.

Comment: The proposed impacts to 520 linear feet of stream exceed the United States Army Corps of Engineers' (USACE) and DHEC's 300 linear foot limit for Nationwide Permit 12. These temporary impacts should require compensatory mitigation, and DHEC should assess the cumulative impacts of the proposed project and consider whether Dominion's T2C Procedures will adequately mitigate for impacts. UF was unable to obtain a copy of the T2C Procedures. Twenty-nine of the 385 Additional Temporary Workspace Stations (ATWS) identified by Dominion are within 50 feet of a waterbody, and 19 of them are 10 feet from a waterbody. The applicant has proposed utilizing double silt fences at these ATWS, and these sites require FERC review and approval prior to use, but the applicant should entirely avoid ATWS sites within 10 feet of a waterbody to minimize potential impacts to waters of the State. The applicant should also actively revegetate riparian areas with minimal chemical or fertilizer application, and should include monitoring and maintenance for two (2) years, at a minimum.

Response: The USACE's Regional Condition 10 states that a discharge cannot cause the loss of greater than 300 linear feet of streambed, and DHEC's 2012 Water Quality Certification for Nationwide Permit 12 does not specify a limit to linear footage. Compensatory mitigation is required when more than 100 linear feet of stream is permanently impacted. The USACE and DHEC consider the proposed stream crossings to be temporary impacts, because they will be restored to pre-construction conditions within a relatively short timeframe once construction is complete. The only permanent stream impacts associated with this project are 54 linear of impacts due to the installation of a bottomless arch culvert and a 36" reinforced concrete pipe culvert for two of the proposed access roads. This is below the 100 linear foot threshold for compensatory mitigation. The applicant will be required to comply with the T2C Procedures and the T2C Plan, which should minimize the cumulative impacts associated with this project. As noted above, DHEC provided UF with digital copies of both the T2C Procedures and the T2C Plan for their review on February 15, 2017.

Regarding the ATWS that will be located within 10 feet of a waterbody, the applicant stated that it is impractical to place all spoil at least 50 feet from any water's edge because this distance is beyond the reach of the equipment, and would require equipment to move repeatedly back and forth along the ROW, increasing the length of time it would take to complete installation of each segment of the pipeline and increasing impacts such as compaction of soil. The BMPs the applicant is proposing should prevent spoils from entering waterbodies.

Additionally, disturbed areas will be revegetated per the T2C Procedures, Section V.C.7. Disturbed riparian areas will be revegetated with native species of conservation grasses, legumes, and woody species, similar in density to adjacent and undisturbed lands. The applicant will ensure that all disturbed areas successfully revegetate, and per T2C Procedures, Section VI.C.4, will not use "fertilizer, lime, or mulch unless required in writing by the appropriate federal or state agency."

Comment: DHEC should hold the Certification until it is confirmed that the project includes sufficient mitigation for all temporary and permanent impacts, and is in compliance with all of the USACE's Regional Conditions, including the requirement that temporary impacts be restored to pre-disturbance conditions within 90 days of work completion. UF does not believe that the project can be completed in this timeframe.

Response: The dry cut (flume crossing) recommended by the SCDNR was adopted for crossing wet streams to mitigate impacts from impingement and entrainment of fish, fish eggs, and larvae, as well as to reduce the amount of sediment that will be released downstream due to disturbance of the streambed, relative to other dry cut methods such as the dam and pump method. Waterbodies will be crossed in the minimum time necessary to complete construction and restore the streambed to preconstruction conditions. While it is not within DHEC's authority to enforce the USACE's conditions, the applicant has stated that it will comply with the terms and conditions of the USACE's permit authorization. The 90-day restriction UF is referring to applies to the completion of each, individual crossing, and does not apply to the entire pipeline as a whole. The applicant has stated that each crossing will be completed in the minimum time necessary, and will be within the 90-day restriction. While no compensatory mitigation is required for the proposed project, the avoidance, minimization, and restoration efforts proposed by the applicant should be sufficient to ensure that project impacts to stream crossings are temporary, with the exception of the two (2) proposed culverts.

Response to Upstate Forever Comments dated Mar. 31, 2017

Comment: We request that there be a DHEC Environmental Justice review before any decisions are made. The poorest citizens along this pipeline path will shoulder the most burden and receive the least compensation.

Response: While DHEC has been active in pursuing issues related to Environmental Justice, the regulations authorizing the issuance of 401 Water Quality Certifications do not provide authority to deny or delay issuance pending an Environmental Justice Review.

Comment: Even with the use of HDD, a 30 foot treeless riparian zone (15 feet on either side of the pipeline) would be cut and maintained after the pipeline is installed. This will increase erosion and turbidity in the adjacent waterbody.

Response: Of the 80 aquatic crossings in the Moore to Chappells pipeline project, 37 of them (eight [8] wetlands and 29 streams) will be constructed using HDD to reduce impacts to adjacent waters. To further protect water quality, the area between the HDD/bore drill pads will remain undisturbed. Thus, rather than a 30-foot treeless riparian zone, there will be no vegetation mowing or clearing in the areas between the HDD entry and exit points and no impacts on stream flow. During the first stage at each HDD crossing, guide wires will be laid along the pipeline ROW and this may result in the need for selective hand clearing of wetland and upland vegetation; however, this clearing will be minimal. Further, DHEC will add these stipulations as conditions to our certification to ensure the protection of the waters adjacent to the HDD crossings.

Comment: DHEC's Regulation 61-68.G.10 (Water Classifications and Standards) requires freshwaters to meet a standard for turbidity that shall not exceed 50 NTUs. These criteria will be violated if these numeric levels are exceeded for any length of time. Large turbidity levels in a waterbody on even one of a few occasions will impair recreational uses. Also, scientific literature demonstrates that phosphorus and metals that are bound to sediment particles are often released from those sediments and lead to persistent exposure of aquatic life to these substances and to the range of detrimental effects such exposure may produce.

Response: The numeric standard for turbidity in freshwaters is 50 NTUs as noted above; however, the regulations also provide narrative language that explains how the standards should be interpreted. R.61-68.G.3. states that, "...compliance with these turbidity criteria may be considered to be met as long as the waterbody supports a balanced indigenous aquatic community when land management activities employ BMPs. For considerations, BMPs must be in full compliance with all specifications governing the proper design, installation, operation and maintenance of such BMPs and all applicable permit conditions and requirements must be met."

Thus, the standard is not considered to be violated if appropriate BMPs are required. As noted in this assessment, the applicant's stormwater and erosion control plan is in several instances more stringent than our state requirements. For instance, the requirements include daily inspection of the BMPs. Also, as noted above, for the HDD areas, clearing will be minimal to ensure protection of riparian areas. Through these means, the release of sediment and any pollutants that may be bound to that sediment will be minimized to ensure that water quality standards are protected.

Comment: UF submitted a number of comments finding deficiencies with the USACE process for reviewing Nationwide Permits and also finding deficiencies with Nationwide Permit 12. Further, the UF report stated that though the USACE has not properly reviewed these various aspects of the project, DHEC is required to do so and, in particular, DHEC must review the cumulative impacts that the project may have on the watersheds.

Response: Whether or not the USACE was correct to authorize the project under a Nationwide Permit is not for DHEC to determine. However, regardless of that determination, DHEC has conducted an individual certification review of this project which includes the consideration of cumulative impacts, etc.

Comment: DHEC's certification must be based on an analysis of the potential water quality impacts of all federally-approved activities related to the proposed project and must include consideration of activities that are covered by the

FERC's approval that were not considered by the USACE. Examples include the potential impacts from HDD operations. The issuance of a Certificate of Convenience and Necessity by FERC triggers the requirement for a 401 Water Quality Certification from the state because the activities covered by the action "may result in any discharge into the navigable waters."

Response: It is the position of the FERC, based on Orders of the Commission, that Certificates of Convenience and Necessity that are issued for pipeline projects do not authorize activities that will result in a discharge under the Clean Water Act, and therefore a 401 Water Quality Certification is not required. FERC holds that any activities associated with the pipeline that may result in a discharge are covered by the permit issued by the USACE. Nonetheless, DHEC's regulations governing the issuance of 401 Water Quality Certifications (Regulation 61-101) provide broad authority to review aspects of the project outside of the immediate project impacts. For instance, our regulations provide authority to review all potential water quality impacts of the project, both direct and indirect. As a result, we have authority to review the water quality impacts from the HDD impacts even though those are not considered to be impacts covered under the USACE's review.

D. South Carolina Environmental Law Project (SCELP)

Date: March 16, 2017

In a letter dated March 16, 2017, SCELP requested on behalf of Upstate Forever (UF) that DHEC reopen the public comment period, or authorize a supplemental public comment period, for the proposed project. SCELP stated that the public did not have complete access to relevant information during the earlier comment period since DHEC has requested additional information from the applicant since the public comment period ended, and the applicant has made minor modifications in its proposed route.

According to R.61-101, *Water Quality Certification*, a public notice shall provide "a reasonable period of time, normally thirty (30) days from the date of notice within which interested parties may submit their views and information concerning the certification application to the Department." DHEC provided an initial public comment period from October 18, 2016, to November 18, 2016, and a second public comment period from November 21, 2016, to December 6, 2016. Additionally, any comments DHEC has received since the second public notice period ended have been included in the review of the proposed project. Although DHEC received no requests for a formal public hearing, DHEC hosted a Public Informational Meeting on March 21, 2017, in order to provide information about the project and DHEC's review process to interested citizens, and to answer questions they might have. DHEC provided follow-up information as requested to several attendees, and has also accepted additional comments that were received from UF and from an affected property owner since the meeting. Therefore, DHEC does not believe an additional public comment period is warranted.

E. Affected or Adjacent Property Owners: Reverend Jennifer E. Copeland, Ph.D; Joy W. Scurry; Suzannah Scurry Smith; Caroline Chappell Smith; Suzannah Lipscomb Smith; Joy Blanton Scurry, M.D.; Pastor Keith Cromer; and George Reynolds

Date: Various Dates

Does not object to project provided the applicant adheres to the conditions in Section VIII.

Hold in abeyance.

Objects to the proposed project, see discussion in Section VI, Conclusions.

No objection.

Has elected to not conduct an investigation nor provide any comments.

The affected or adjacent property owners listed above provided comments during the public notice period and during the review process about the proposed project. Many of the comments from the various property owners were similar in nature, so they are summarized below. At DHEC's request, the applicant replied to these comments in letters dated December 27, 2016, and February 13, 2017. Their responses are described below each comment.

Comment: The use of fossil fuels is detrimental to the atmosphere, and the pipeline will emit a significant amount of methane emissions through leaks.

Response: According to the applicant, natural gas is a cleaner and more efficient means of producing electricity than coal by producing less carbon dioxide, which is the primary greenhouse gas; sulfur dioxide, which is the primary cause of acid rain; nitrogen oxide, which is the primary cause of smog; and particulate matter, which can affect health and visibility, than oil or coal. The applicant also stated that methane gas leaks from pipeline transport can be avoided by aggressively sealing and monitoring condensers and pipelines. The applicant will routinely monitor gas control locations along the pipeline for flow and pressure in real-time data. Additionally, the pipeline is designed and will be constructed to prevent leaks, and it is tested extensively prior to operation to ensure that the pipe material can perform with a large safety factor relative to normal operating conditions. Additionally, the pipeline will typically have a minimum cover of four (4) feet.

Comment: A property owner disagrees with the process of fracking (hydraulic fracturing to extract natural gas from subterranean rock) and objects to this project because it is a transmission line for natural gas.

Response: The proposed project does not involve fracking; therefore it is not within the scope of this review.

Comment: Leaks from the proposed pipeline will contaminate surface waters and groundwater, endangering plant life, wildlife, and human life.

Response: According to the applicant, the natural gas will be transported through the pipeline in a gaseous state, and therefore, if any leaks were to occur, the natural gas would be released into the air, and not into the groundwater or surface water systems. A natural gas leak would not contaminate groundwater or surface water. As discussed above, the pipeline will be constructed and extensively tested to prevent leaks, and will be constantly monitored to ensure that leaks are found and stopped quickly if any develop.

Comment: The applicant has been cited for 28 separate violations ranging from environmental pollution to railway safety. What confidence is there that this pipeline will offer a higher level of safety than their previous projects?

Response: Although pipeline safety is outside the scope of this review, the applicant stated that natural gas pipelines are regulated by the federal government's Pipeline and Hazardous Materials Safety Administration (PHMSA) to ensure that all facilities under its jurisdiction are constructed and maintained with public safety first and foremost in mind. The applicant also stated, as mentioned above, that the project will be designed, constructed, tested, and monitored to ensure safety and compliance with applicable laws.

Comment: The project will negatively impact Federally- and State-protected species of wildlife and plants.

Response: According to the applicant, they conducted protected species and habitat assessment surveys along the entire proposed Moore to Chappells pipeline route and proposed access roads as part of the FERC review and EA process. The applicant coordinated with the SCDNR and the USFWS, and as noted in Items A and B of this Section, both agencies provided concurrence with FERC's determinations of either "No Effect" or "May Affect, Not Likely to Adversely Affect" for all Federally- and State-protected species whose ranges could overlap the project area, and stated that they had no objections to the project as proposed.

Comment: Several commenters who are associated with the same piece of property in Chappells stated that the applicant could reduce negative impacts to streams and wildlife by routing the pipeline along Highway 39 instead of through their family property.

Response: According to the applicant, the two (2) temporary stream impacts on this piece of land cross two (2) seasonal streams, which means that they do not have permanently flowing water, which limits the type of aquatic life that could be found in the stream. The applicant stated that they had investigated many alternative routes and minor route variations, and that the property owner's suggested route along Highway 39 would require more waterbody crossings, increased impacts to forested areas, and impacts to more landowners. At DHEC's request, the applicant provided additional information about this alternative route.

As part of the FERC review and EA process, the applicant and FERC assessed numerous route variations, including the one requested by this property owner. According to the applicant, the variations that were incorporated would reduce specific environmental, landowner, or construction constraints without unnecessarily encumbering landowners. Using a desktop analysis, the applicant evaluated two variations of the property owner's proposed route along Highway 39. The first variation would impact more mixed forest and additional landowners, and the second variation would affect more planted pine and have an additional stream crossing. The applicant considered another alternative which would parallel an existing electrical corridor on the property owner's land, but this alternative would have additional impacts to planted pine and mixed forest, which FERC considers when evaluating alternative routes. Therefore, it was determined that the proposed alternatives were not feasible.

Comment: The project would affect bottomland hardwoods on the commenter's property.

Response: There are no impacts to WOTUS on this commenter's property, however, a portion of the HDD crossing of the Little River and the HDD exit point for that crossing will occur on the property. The HDD exit point will not be located within a WOTUS. The applicant has avoided impacts to wetlands using HDD or bore methods, and only minimal, temporary clearing will occur between HDD entry and exit points. As mentioned above, there will be no routine clearing between HDD entry and exit points. Clearing in uplands is not within the scope of this review, but the applicant will have to comply with the T2C Procedures and T2C Plan.

F. Interested Citizens: Dr. Scott Simmerman, Ph.D; Lois Herlihy; Kyle Chudom; Paul Nelson

Date: Various Dates

In response to articles that were published in various news sources after the public notice comment period had ended, the South Carolina citizens listed above submitted comments to DHEC regarding the proposed project. Dr. Simmerman, Ms. Herlihy, and Mr. Chudom objected to the project, and their comments and the applicant's and/or DHEC's responses are summarized below. Mr. Nelson requested that DHEC approve the proposed project, discussing the need for the energy that can be generated from the natural gas, and mentioning that it is safer and more economical to move natural gas via pipeline than by rail or truck. No response to Mr. Nelson's comments is necessary.

Comment: The project will result in leaks, which will pollute drinking water and negatively affect wildlife.

Response: The natural gas will be transported through the pipeline in a gaseous state, and therefore, if any leaks were to occur, the natural gas would be released into the air, and not into the groundwater or surface water systems. A natural gas leak would not contaminate groundwater or surface water.

Comment: There are safety concerns associated with natural gas pipelines; is there a national database of pipeline failures?

Response: According to the applicant, there is not a list of nationwide pipeline exposures (failures). The PHMSA Office of Pipeline Safety (OPS) regulates interstate natural gas pipelines, hazardous liquid pipelines, and liquefied natural gas plants. The PHMSA OPS provides a variety of data about these federally- and state-regulated facilities, and the operators of these facilities report data to the OPS in accordance with Part 191 and Part 195 of PHMSA's pipeline safety regulations. Various safety data is available for download from the PHMSA's website (<http://www.phmsa.dot.gov/pipeline>). The safety of the proposed project will be regulated by 49 Code of Federal Regulations, Part 191 and 192.

Comment: The state should be investing in alternative energy sources instead of continuing to utilize fossil fuels.

Response: While the State's energy policies are outside the purview of DHEC's review for this application, in 1992, the South Carolina General Assembly passed the South Carolina Energy Efficiency Act, which established the State Energy Office and called for the creation of a comprehensive State Energy Plan. According to the State Energy Office's 2016 Draft State Energy Plan, "The South Carolina State Energy Plan (State Energy Plan) is a

comprehensive blueprint for a reliable, resilient, clean, and affordable energy system for South Carolina residents and business. Specifically, the State Energy Plan is designed to maximize (to the extent practical) reliability, environmental quality, energy conservation, and energy efficiency while minimizing the cost of energy throughout the state." One of the Top Tier Policy Recommendations of the 2016 Draft State Energy Plan is to, "Ensure that natural gas is a viable energy option for residential, commercial, industrial, and power generation customers across South Carolina and enable South Carolina to continue to attract economic development prospects." The State Energy Plan also discusses utility energy efficiency programs and renewable energy programs, as well as planning for future energy needs and the utilization of various energy resources.

V. Consistency with the Coastal Zone Management Program, R. 48-39-10 *et seq.*

A. Did the staff of the Office of Ocean and Coastal Resource Management (OCRM) find the project consistent with the S.C. Coastal Zone Management Program? Yes No N/A

Date:

Per revisions

Per conditions included in Section VIII.

If no, provide Sections of Coastal Zone Management Program cited.

VI. Conclusion on Water Quality Impacts and Classified Uses

When evaluating the proposed work, the DHEC followed procedures for implementing State 401 Water Quality Certification regulations pursuant to Section 401 of the Clean Water Act, 33 U.S.C. Section 1341, and the requirements of Regulation 61-101, Water Quality Certification.

Previous sections of this staff assessment have provided a description and evaluation of specific project impacts to jurisdictional waters of the State, an analysis of any alternatives to the project impacts that may exist, and recommendations and modifications, when necessary, to ensure that the proposed work will not contravene water quality standards or change classified uses. The following analysis will address additional measures intended to avoid adverse impacts to water quality and other resources in the project area. The following analysis may also address other concerns raised by resource agencies or other commenting parties.

Throughout the review process, numerous commenters questioned the use of natural gas and the purpose and need of this project. As discussed in Section IV.F above, while the State's energy policies and the use of natural gas are outside the purview of DHEC's review for this application, the State Energy Plan discusses the need for natural gas availability within the state, and letters provided by the applicant from SCE&G explained how the natural gas transported by this project would be utilized. Through the applicant's alternatives analysis for the planning of the project, the FERC's independent evaluation of the alternatives in the EA, and the additional information requested and reviewed by DHEC, DHEC concurs with the applicant and the FERC that the proposed project is the only feasible alternative with the least impacts to WOTUS that will meet the project's purpose.

The applicant has avoided and minimized impacts to WOTUS to the maximum practicable by avoiding 37 aquatic crossings using HDD or bore methods with installation depths that should prevent impacts to the waterbodies above the pipeline. Routine clearing between HDD entry and exit points will not be completed, which will protect wetland and riparian areas at those crossings. For the open cut crossings, the applicant will use dry cut (flume) methods on streams that are wet at the time of crossing, which will minimize the impacts to aquatic life and water quality during construction and be protective of downstream habitat. Open cut crossings of streams that are dry at the time of construction must be completed within 24 hours for minor (less than 10 feet wide) streams, and within 48 hours for intermediate (greater than 10 feet wide but less than or equal to 100 feet wide) streams, unless conditions make it infeasible, reducing the duration of temporary impacts at these crossings.

The applicant has minimized environmental impacts by collocating the new pipeline with existing ROW to the maximum extent practicable. Approximately six (6) percent of the proposed Moore to Chappells pipeline will be collocated with existing electric transmission and/or other natural gas pipeline ROWs. Due to the many considerations and constraints involved in designing a pipeline route, as discussed above in Section III.B, the applicant could not collocate more of the proposed pipeline.

The applicant avoided and minimized permanent impacts to streams by utilizing existing roadbeds and stream crossings to the maximum extent possible for new access roads. For the two (2) permanent impacts associated with the installation of culverts for access road crossings, the applicant minimized impacts to Long Branch by utilizing a bottomless arch culvert for the crossing to allow natural stream flow to continue along the existing streambed. The second, 36-inch reinforced concrete pipe culvert was sized appropriately for the intermittent flow present in the unnamed tributary that the new access road will be crossing. The 36-inch culvert will be installed in a manner that maintains stream flow and aquatic life passage.

As discussed previously in this assessment, the FERC-approved T2C Procedures and T2C Plan require numerous BMPs and construction methods that will be utilized to prevent impacts to off-ROW resources and that will be protective of water quality in the vicinity of the project. Construction methodologies are required to minimize impacts to WOTUS to the maximum extent practicable, all disturbed streambeds will be restored to pre-construction contours and stabilized, and all riparian areas will be revegetated.

The water quality impacts of the proposed project will be temporary provided the applicant adheres to the conditions in Section VIII. DHEC has reasonable assurance that the water quality standards of Regulation 61-68 will not be contravened as a result of the proposed work. The proposed activity will result in no significant degradation to the aquatic ecosystem or remove existing and classified uses of the affected water bodies, and is in compliance with the above regulations, provided the applicant adheres to the conditions in Section VIII. The above assessment also ensures that the proper sequencing of avoidance, minimization, and appropriate compensation for unavoidable impacts has been demonstrated. Information about the technical aspects of this application is available from Ms. Alicia Rowe, the project manager, by calling 803-898-4333, or by emailing roweam@dhec.sc.gov.

DHEC reserves the right to impose additional conditions on this Certification to respond to unforeseen, specific problems that might arise, and to take any enforcement action necessary to ensure compliance with State water quality standards.

VII. Staff Recommendation

Issue 401 Water Quality Certification with conditions, and with provisions consistent with the Permits for Construction In Navigable Waters Regulations.

VIII. Conditions to be Placed on Water Quality Certification When Issued

1. Prior to beginning any land disturbing activity, appropriate erosion and siltation control measures (i.e. silt fences or barriers) must be in place and maintained in a functioning capacity until the area is permanently stabilized.
2. Materials used for erosion control (e.g., hay bales or straw mulch) will be certified as weed free by the supplier.
3. Inspections of temporary erosion control measures shall be conducted on a daily basis in areas of active construction or equipment operation, on a weekly basis in areas with no construction or equipment operation, and within 24 hours of each 0.5-inch of rainfall.
4. All necessary measures must be taken to prevent oil, tar, trash, and other pollutants from entering the adjacent waters.
5. Once the project is initiated, it must be carried to completion in an expeditious manner to minimize the period of disturbance to the environment.
6. Where there is no flow at the time of construction, instream activities within minor waterbodies (less than or equal to 10 feet wide at the water's edge) must be completed within 24 hours. Where there is no flow at the time of construction, instream activities within intermediate waterbodies (greater than 10 feet wide but less than or equal to 100 feet wide at water's edge) must be completed within 48 hours, unless conditions make that infeasible. Crossings requiring a flume (dry cut crossings) to maintain downstream flow must be completed and restored in as little time as is feasible, which will vary based on site-specific conditions.

7. Dry cut (flume) crossings shall be used for all stream crossings (unless HDD or bore methods are employed) when the stream is wet at the time of construction.
8. Upon project completion, all disturbed areas must be permanently stabilized with vegetative cover (preferable), riprap, or other erosion control methods as appropriate.
9. Disturbed riparian areas must be revegetated after construction with native species of conservation grasses, legumes, and woody species similar in density to adjacent undisturbed lands.
10. For permanent rights-of-way, clearing of the vegetation within 25 feet on either side of waterbodies will be limited to a 10-foot wide corridor over the pipeline. The clearing shall be maintained in an herbaceous state. Trees within 15 feet on either side of the pipeline that have roots that could compromise the integrity of the pipeline coating may be selectively cut and removed.
11. No routine vegetation mowing or clearing may be performed in riparian or wetland areas located between horizontal directional drilling (HDD) entry and exit locations. Selective hand clearing of wetland and upland vegetation may be allowed during the first stage at each HDD crossing to facilitate the placement of guide wires along the pipeline ROW.
12. In-stream construction work should be avoided from March 1st to June 30th if streams are wet at the time of crossing, with the exception of those proposed for HDD or bore methods.
13. Herbicides or pesticides shall not be used within 100 feet of a wetland or riparian area, except as allowed by the appropriate federal or state agency. If chemicals are used, a 50-foot buffer on either side of the stream crossing should be established where no herbicide or pesticide treatments would be allowed.
14. Maintenance clearing or mowing of permanent rights-of-way must not be scheduled between April 15th and August 1st of a given year to avoid nesting season for a majority of migratory birds.
15. All excavations should be backfilled with the excavated material after installation of the appropriate structures. Where practicable, sidecast spoil material from trench excavation should be placed on the side of the trench opposite streams and wetlands. Spoil material from trench excavation should be placed on the side of the trench to be reused as back fill with the A-horizon placed back in its original position. Excess spoil material must be removed to an approved upland disposal site.
16. Additional Temporary Workspace Stations (ATWS) must be located at least 50 feet back from waterbody boundaries unless a reduced setback is justified. Double silt fences shall be employed where ATWS areas are in close proximity to waterbodies.
17. Spoil placement within the construction right-of-way must be at least 10 feet from the water's edge.
18. Access road crossings of Waters of the United States must be made with appropriately sized culverts. Culverts must be sized and designed to prevent alteration of the natural stream morphology. For pipe culverts, the bottom elevation of the culvert or pipe must be at or below the stream bed elevation to allow for natural mitigation of aquatic organisms up- and downstream. Disturbed stream banks should be restored by planting woody vegetation and/or using bioengineering techniques for stream bank stabilization.
19. The project must comply with the "Transco to Charleston Project Wetland and Waterbody Construction and Mitigation Procedures" as approved by the Federal Energy Regulatory Commission in the Certificate of Public Convenience and Necessity issued on February 2, 2017.

20. The project must comply with the "Transco to Charleston Project Upland Erosion Control, Revegetation, and Maintenance Plan" as approved by the Federal Energy Regulatory Commission in the Certificate of Public Convenience and Necessity issued on February 2, 2017.
21. The project must comply with the "Horizontal Directional Drilling Contingency and Inadvertent Release Plan" as approved by the Federal Energy Regulatory Commission in the Certificate of Public Convenience and Necessity issued on February 2, 2017.

Prepared by: Alicia M. Rowe Date: 4/11/17

Reviewed & Approved by: Stephen Peck Date: 4/11/17

