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March 24, 2020

Federal Energy Regulatory Commission
888 First Street, N.E.
Washington, D.C. 20426

Attention: Kimberly D. Bose, Secretary

Reference: Transcontinental Gas Pipe Line Company, LLC
Dalton Expansion Project
Docket No. CP15-117-000
RE: Post-Construction Wetland Monitoring Report

Ladies and Gentlemen:

Transcontinental Gas Pipe Line Company, LLC ("Transco") hereby files this Post-Construction Wetland Monitoring Report for the Dalton Expansion Project (Project) pursuant to the Commission's *Wetland & Waterbody Construction & Mitigation Procedures* Condition VI. D. 6. This report provides an overview and evaluation of revegetation efforts with those wetlands crossed by the Project.

Please direct any questions regarding this report to Kyle Marshall at (713) 248-7335 or by email at Kyle.Marshall@Williams.com.

Respectfully submitted,

TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC

A handwritten signature in black ink, appearing to read "Joseph E. Dean". The signature is fluid and cursive, written over a light blue horizontal line.

Joseph E. Dean
Manager, Permits

cc: Tim Powell
Brian Ham



Transcontinental Gas Pipe Line Company, LLC

Post-Construction Wetland Monitoring Report

Dalton Expansion Project
USACE File Number: SAS-2014-00203

December 2019

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Abbreviations and Acronyms

BMP	best management practice
FERC	Federal Energy Regulatory Commission
GDNR	Georgia Department of Natural Resources
EPA	U.S. Environmental Protection Agency
Mdt/d	thousand dekatherms per day
MLV	mainline valve
MP	milepost
NPDES	National Pollutant Discharge Elimination System
OD	outside diameter
PEM	palustrine emergent
PFO	palustrine forested
Plan	Transco's Upland Erosion Control, Revegetation, and Maintenance Plan
Procedures	Transco's Wetland and Waterbody Construction and Mitigation Procedures
Project	Dalton Expansion Project
PSS	palustrine scrub-shrub
ROW	right-of-way
SBV	Stream Buffer Variance
Transco	Transcontinental Gas Pipe Line Company, LLC
U.S.	United States
USACE	U.S. Army Corps of Engineers
WOUS	Waters of the U.S.

1. INTRODUCTION

Dalton Expansion Project

USACE File Number: SAS-2014-00203

FERC Docket Number: CP15-117-000

Transcontinental Gas Pipe Line Company, LLC (Transco) proposed to provide 448 thousand dekatherms per day (Mdt/d) of incremental firm transportation capacity from Transco's Station 210 Zone 6 Pooling Point in Mercer County, New Jersey to an interconnection with Gulf South Pipeline Company, LP in Pike County, Mississippi (Holmesville) and through a new pipeline lateral (Dalton Lateral) initiating at Transco's Compressor Station 115 in Coweta County, Georgia to interconnections on the Dalton Lateral in northwest Georgia. This project is referred to as the Dalton Expansion Project (Project). As detailed below, the Project consists of 112.9 miles of new natural gas pipeline in three continuous segments (Dalton Lateral Segments 1, 2, and 3) and a new 2.0-mile natural gas lateral pipeline (Dalton Lateral - AGL Spur). A new compressor station and three new meter stations also were constructed, and modifications and supplemental odorization equipment have been installed at existing facilities as part of the Project. The Project consists of the following components:

- Dalton Lateral Segment 1
 - Addition of approximately 7.8 miles of new 30-inch outside diameter (OD) pipeline in Coweta and Carroll Counties, Georgia from the discharge of Compressor Station 115 to the proposed Compressor Station 116
- Dalton Lateral Segment 2
 - Addition of approximately 51.3 miles of new 24-inch OD pipeline in Carroll, Douglas, Paulding, and Bartow Counties, Georgia from the discharge of the proposed Compressor Station 116 to the proposed Beasley Road Meter Station
- Dalton Lateral Segment 3
 - Addition of approximately 53.8 miles of new 20-inch OD pipeline in Bartow, Gordon, Murray, and Whitfield Counties, Georgia from the proposed Beasley Road Meter Station to the proposed Looper Bridge Road Meter Station
- Dalton Lateral - AGL Spur
 - Addition of approximately 2.0 miles of new 16-inch OD pipeline in Murray County, Georgia from milepost (MP) 105.2 of the Dalton Lateral to the proposed Murray Meter Station
- Compressor Station 116
 - Addition of a new 21,830-horsepower compressor station in Carroll County, Georgia
- Beasley Road Meter Station (formerly referred to as AGL-Bartow Meter Station)
 - Addition of a new 190 Mdt/d meter station in Bartow County, Georgia
- Looper Bridge Road Meter Station (formerly referred to as Oglethorpe-Smith Meter Station)
 - Addition of a new 208-Mdt/d meter station in Murray County, Georgia

- Murray Meter Station (formerly referred to as AGL-Murray Meter Station)
 - Addition of a new 50-Mdt/d meter station in Murray County, Georgia
- Mainline Facility Modifications to Accommodate Bi-Directional Flow
 - Addition of valves and yard piping for south flow compression in Pittsylvania County, Virginia at Compressor Station 165 and in Orange County, Virginia, at Compressor Station 180
 - Modifications to Compressor Station 167 in Mecklenburg County, Virginia to handle a partially odorized system
 - Modifications to mainline valve (MLV) settings at MLV 160-10 in Rockingham County, North Carolina and at MLV 160-15, the Hutson Road MLV, and MLV 160-20 in Pittsylvania County, Virginia to handle a partially odorized system
 - Modifications to 23 meter and regulator stations at 20 sites in Rockingham, Northampton, and Hertford Counties, North Carolina, and Pittsylvania, Brunswick, Mecklenburg, Greensville, and Halifax Counties, Virginia, on the South Virginia Lateral and between Compressor Stations 160 and 165 on the mainline to handle a partially odorized system.

All Project impacts to Waters of the U.S. (WOUS) occurred within the state of Georgia, including impacts in Coweta, Carroll, Douglas, Paulding, Bartow, Gordon, Murray, and Whitfield counties.

Transco began construction of the Project on September 13, 2016 and completed permitted activities with an in-service date of August 1, 2017.

During construction of the Project, 91 wetlands were impacted within the U.S. Army Corps of Engineers (USACE) Savannah District. Consistent with Project permits and conditions, these wetlands were restored to pre-construction elevations and hydrologic conditions during restoration of the Project right-of-way (ROW). The stabilized wetlands have been allowed to revegetate from the existing seed bank and root stocks maintained within each wetland.

This report presents the results of the monitoring conducted during the 2017, 2018, and 2019 growing seasons to fulfill requirements of Department of the Army Clean Water Act Permit File Number SAS-2014-00203, as well as measures detailed in Section VI.D of Transco's Wetland and Waterbody Construction and Mitigation Procedures (Procedures, Appendix B) approved for the Project.

The revegetation monitoring program established for this Project complements and accords with other construction-related documents filed with the USACE and the Federal Energy Regulatory Commission (FERC). During construction activities, Transco implemented erosion control measures identified in Transco's Upland Erosion Control, Revegetation, and Maintenance Plan (Plan, Appendix C).

2. WETLANDS – CONSTRUCTION AND OPERATION IMPACTS

The construction of the Project resulted in wetland impacts, including both temporary impacts on palustrine emergent (PEM) and palustrine shrub/scrub (PSS) wetlands and permanent and temporary impacts on palustrine forested (PFO) wetlands. **Table 2-1** (Appendix A) summarizes the temporary and permanent wetland impacts associated with the Project and approved under USACE file No. SAS-2014-00203. Because temporarily disturbed wetlands for pipeline installation were returned to preconstruction conditions, there was no permanent loss of wetlands from construction of the pipeline. The only permanent wetland impacts associated with the Project were the conversion of forested wetlands to emergent or scrub-shrub wetlands as a result of vegetation removal and maintenance within the Permanent ROW. Temporary impacts to wetlands included soil disturbance, temporary alteration of hydrology, and loss of vegetation. No permanent filling of wetlands was performed for the Project. Upon completion of construction, topsoil, contour elevations, and hydrologic patterns were restored, and affected areas were allowed to naturally revegetate.

Although there was no net loss of wetlands associated with the Project. PFO wetlands within the Permanent ROW will be maintained as PEM or PSS wetlands. PFO and PSS wetlands cleared for Temporary Construction ROW will be allowed to revert to pre-construction conditions. PSS and PEM wetlands will be allowed to revert to pre-construction condition on the permanent ROW. Transco mitigated the impacts to wetlands by purchasing credits at wetland banks located in the watersheds of the associated wetlands, and by approved comparable methods. Further information concerning wetland mitigation for the Project is provided in Section 3.0.

2.1 Wetland Construction Methodology

Efforts were made before, during, and after construction to minimize the extent and duration of Project-related disturbance to wetland resources. As previously discussed, Transco, in accordance with the Transco Procedures, maintained the following setbacks from surface water and wetland resources throughout construction and operation:

- Active construction work areas (temporary workspace and additional temporary workspace) were set back a minimum of 50 feet;
- Construction spoil piles were set back a minimum of 50 feet; and
- No hazardous materials storage, concrete coating, equipment/vehicle parking, refueling, herbicide application, or pesticide use occurred within 100 feet.

Construction techniques within wetlands were consistent with the Transco Procedures (Appendix B) and federal and state permits. Transco installed appropriate best management practices (BMPs), as identified in the Transco Procedures to minimize the potential for impacts to wetlands.

The methods of pipeline construction and the required Construction Work Area width in wetlands depended upon the soil stability and the existing use and condition of the wetland. The Transco Procedures (Appendix B) provide additional detail regarding construction activities within saturated wetlands. Where soils were unstable and saturated, stable temporary work surfaces

within the wetlands were constructed. Travel pads and/or gravel on geotextile fabric were methods of stabilization.

The construction procedures used to cross unsaturated wetlands was similar to those used in dry land areas. The upper 12 inches of topsoil in unsaturated wetlands was segregated, while topsoil in saturated wetlands was not segregated. Trench plugs remained in the trench prior to entering a wetland if the trench contained water. The trench plugs are designed to minimize sediment discharges into the wetland from the upland areas up-gradient and down-gradient of the wetland. Points at which the trench entered and exited the wetland were sealed with trench sack breakers or foam breakers to maintain the hydrologic integrity of the wetland, where deemed necessary by an EI. State-required BMPs, as included in the Project National Pollutant Discharge Elimination System (NPDES) Permit, were installed at edges of the Construction Work Area in wetlands where there was a possibility for spoil to flow into undisturbed areas of the wetlands. Backfill was well compacted, especially near the edges of the wetlands. Excess backfill was spread over adjacent upland areas and stabilized during cleanup. After completion of construction, topographic conditions and contours in wetlands were restored as similar as practicable to the original topographic conditions and contours.

2.2 Minimization of Wetland Impacts

Transco protected and minimized impacts to wetland areas by complying with the applicable permit conditions issued by appropriate regulatory agencies with respect to construction and operation of the Project facilities within wetlands, and through implementation of the wetland construction procedures described in the Transco Procedures (Appendix B). Construction in and around wetland areas was completed in the shortest amount of time practicable in order to reduce the amount of time wetland soils were exposed, which minimized the opportunity for soil loss and reduced the amount of time during which wetland functions were affected. In addition, Transco reduced workspace in and around wetlands in accordance with FERC requirements. During operation of the Project, wetlands within the ROW will be maintained in accordance with the Transco Procedures. In forested wetlands, Transco minimized tree clearing to the extent practicable while maintaining safe construction conditions. Equipment mats were used to cross most wetland areas and decompaction was performed as necessary. The top 1 foot of soil was segregated from the area disturbed by trenching activities, except in areas of saturation, and was immediately backfilled to preserve the existing seedbank.

2.3 Wetland Restoration Methods

Restoring wetlands to their original configurations and contours, post-construction, assisted in maintaining preconstruction hydrology and minimized impacts on wetlands. Stabilization of disturbed upland areas adjacent to wetlands minimized sediment transport into wetlands, protecting wetlands from filling with sediment and maintaining functions long-term. Erosion controls, including silt fence and/or staked BMPs, were put in place to protect wetlands from sediment from disturbed areas in adjacent uplands during construction. On these upland areas, seed mixes and mulch spread on the restored topsoil for temporary stabilization was applied according to the mixes recommended by the appropriate regulatory agency, landowner or land manager. The use of fertilizers was not be permitted. Post-construction maintenance and monitoring of the ROW was performed in impacted wetlands to assess restoration and revegetation measures. Monitoring efforts included documenting occurrences of exotic invasive species in wetlands to compare to pre-construction conditions and continued for approximately

two years after construction. During this 2-year monitoring period, the densities of invasive species were documented below or consistent with off ROW densities. Transco is proposing to cease monitoring activities upon approval from the USACE Savannah District. The use of herbicides or pesticides for targeted invasive species control of these areas was not required or implemented during this monitoring period.

Restoration of wetland areas has occurred by natural revegetation. Studies have shown that natural revegetation of wetlands in the Southeast has a higher success rate than planting wetlands due to inherent, regenerative capacities of seed bank and vegetative reproduction. To facilitate periodic pipeline corrosion and other leak surveys, the pipeline corridor will be maintained in an herbaceous state. Wetland areas were seeded with an annual rye directly after the completion of construction to ensure protection of the wetland soil from erosion until natural vegetation was successful. No fertilizers or mulch materials were introduced into wetland areas.

Wetland mitigation efforts are described below in Section 3.0.

3. MITIGATION OF PROJECT IMPACTS TO WETLANDS AND WATERBODIES

The environmental planning and review process for the Project involved successive considerations of avoidance, minimization, and mitigation with regard to wetlands and environmental impacts. Transco undertook measures to avoid, minimize, and then mitigate for unavoidable impacts following USACE rules and guidance, with the goal of no net loss of wetland functions and values. This approach followed USACE mitigation sequencing and, where compensation was required, used a watershed approach (8-digit Hydrologic Unit Code) to select available resource replacement sites that offered the greatest functional benefits as outlined in the Savannah District's Standard Operating Procedures for Compensatory Mitigation (USACE 2004).

3.1 Compensatory Mitigation

For the Project, the approach to compensatory mitigation followed the U.S. Environmental Protection Agency (EPA) and USACE Wetland Compensatory Mitigation Rule (March 2008) emphasizing a watershed-level approach to compensation. Previous EPA and USACE guidance favored mitigation in proximity of impacts, but the new Wetland Compensatory Mitigation Rule (March 2008) lists this hierarchy of mitigation preferences: 1) mitigation banks; 2) in-lieu fee programs; and 3) permittee-responsible mitigation, in the event neither of the previous two options are practicable.

Because the Project did not result in filling of any waterbodies, no mitigation for the Project's waterbody crossings was proposed to satisfy USACE requirements. However, the Project did require a Stream Buffer Variance (SBV) from the Georgia Department of Natural Resources (GDNR), and was required to mitigate for impacts to certain waterbody buffers by purchasing waterbody credits from a USACE-approved mitigation bank.

Transco proposed a two-pronged approach to compensatory mitigation for Project impacts to wetlands: 1) rehabilitation/restoration of wetlands temporarily impacted by construction; and 2) purchase of mitigation credits from approved wetland mitigation banks or in-lieu fee programs to offset losses due to conversion of forested wetlands.

Natural revegetation of various wetland plant communities has been proven to be a successful, cost-effective method of restoring wetland vegetation in pipeline and power line ROWs, particularly in the southeastern U.S. (Rury and Little, 1991; Buchanan and Zagata, 1991; Honig and Rury, 1991; Salvesen, 1990; Erwin, 1990; Farnworth, 1981; Lugo *et al*, 1988; Thibodeau and Nickerson, 1986; Nickerson *et al*, 1989; Isaacson 1991, 1992; Isaacson *et al*, 1992; Zellmer *et al*, 1991; University of Florida, 1988; Steenberg, 1991; Long and Ellis, 1984; Baca and Lankford, 1989; and Brown, 1987). Some studies have indicated that a naturally regenerated forest is often more desirable because the component species plants are distributed according to the site environmental gradients and microsites to which they are best adapted. The literature reviewed concluded that wetlands allowed to regenerate naturally recover more quickly than if established from seed or installed plants.

Restoration of the existing, natural wetland hydrology, soil profiles, and topography are critical to promote natural regeneration, and for developing and maintaining a successful wetland ecological system. Where the original contours are reestablished within a ROW and no other impediments

to the natural hydrology occur, natural revegetation of a ROW through a wetland approximates the adjacent natural wetland plant community usually within one or two growing seasons in emergent and scrub-shrub wetland systems. Techniques to minimize construction impacts on wetland soil profiles and hydrological function include topsoil segregation, implementing proper erosion control techniques, reducing compaction, and construction/restoration timing. Topsoil segregation allows for the preservation of the seed bank for natural site revegetation. Mulching with wetland topsoil instead of planting is a common revegetation technique that works well, provided that final elevations are correct with regard to the water table and mulch is not stockpiled for long periods.

The Project's impacts are anticipated to be short-term and localized. Areal impacts to wetlands have been minimized by reducing the construction ROW width and keeping other required workspace away from wetlands, where practicable. Transco believes that natural revegetation, in conjunction with exotic/nuisance weed monitoring and control, is the most cost-efficient method of restoring wetlands in pipeline ROWs and have utilized both of these measures during restoration of wetlands impacted by the Project.

4. METHODOLOGY AND RESULTS

Transco conducted wetland assessments between October 17, 2017 and August 16, 2019 along the entire Project ROW. Photo documentation and datasheets were completed for each of the 91 wetlands crossed by temporary and permanent ROW construction activities. Wetland assessments were completed using the Draft Temporary Post-Construction Aquatic Resource Monitoring (v. 01/17) form provided by the USACE – Savannah District.

Vegetation cover, which is the percentage of the ground surface that is vegetated, was determined using visual estimates of each species within the entire wetland area. The taxonomy and nomenclature for plants identified during these assessments follow that used by Godfrey (1988). Other references cited for plant identification include Godfrey & Wooten (Aquatic and Wetland Plants of the Southeastern United States, 1979 and 1981).

Dominant and subdominant species were recorded for each wetland. Data was also collected for average water depth, soil conditions, percent coverage of bare ground, percent cover of invasive exotic vegetation, wildlife utilization, and human disturbance (un-related to construction activities).

4.1 Results and Summary

As outlined in Transco's Procedures (Appendix B), which were included as an appendix to the Wetland and Waterbody Delineation Report and Mitigation Plan for the Project, wetland revegetation shall be considered successful if the cover of herbaceous and/or woody species is at least 80 percent of the type, density, and distribution of the vegetation in adjacent wetland areas that were not disturbed by construction.

In general, wetlands located along the restored pipeline corridor of the Project exhibited conditions progressing towards or demonstrated characteristics of successful revegetation. Table 2-1 (Appendix A) displays the results of the full post-construction monitoring effort. Approximately 70 out of the 91 wetlands affected by the project met successful revegetation criteria during the end of the 2017 growing season, which immediately followed construction completion and in-service. The remaining wetland features did not meet the revegetation criteria of at least 80 percent of the type, density, and distribution of the vegetation in adjacent wetland areas that were not disturbed by construction. However, follow-up monitoring efforts conducted of the remaining 20 wetlands during the 2018 and 2019 growing season, resulted in full revegetation criteria being met.

5. REFERENCES

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APPENDIX A

Dalton Expansion Project
Post-Construction Wetland Monitoring Table

Dalton Expansion Project
Post-Construction Wetland Monitoring Report

20200324-5115-ERIC

Dalton Expansion Project - Post Construction Wetland Monitoring
USACE NWP 12: SAS-2014-00203 October 31, 2016

Wetland ID	Wetland Quality (Pre-Construction)	Cowardin Classification (Pre-Construction)	MP	Linear Distance Crossed (feet)	Permanent ROW (acres) ^c	Temporary Workspace (acres) ^c	Additional Temporary Workspace (acres) ^c	Latitude	Longitude	Permanent ROW (square feet)	Temporary Workspace (square feet)	Date Monitoring Completed	Inspector	Post-Construction Disturbance(s) present?	Corrective Action Required?	Proposed Corrective Action
Dalton Lateral (Segments 1, 2, and 3)																
W1ACO002	Low	PEM	0.5	0	0.000	0.005	0.000	33.375663	-84.909178	-	218	6/12/2018	Matt Jenkins	No	No	N/A, Wetland exhibited full re-vegetation upon follow-up 6/12/18 assessment
W1ACO005	Moderate	PFO	2.8	28	0.031	0.017	0.000	33.409056	-84.908267	1,367	747	6/12/2018	Matt Jenkins	No	No	N/A, Wetland exhibited full re-vegetation upon follow-up 6/12/18 assessment
W2BCO001	Low	PEM	3.6	0	0.000	0.001	0.000	33.421482	-84.909253	-	26	6/12/2018	Matt Jenkins	No	No	N/A, Wetland exhibited full re-vegetation upon follow-up 6/12/18 assessment
W2BCO003	Low	PEM	5.4	0	0.000	0.003	0.000	33.446046	-84.909826	-	149	11/21/2017	Matt Brown	No	No	
W2BCO004	Low	PEM	5.5	0	0.000	0.002	0.000	33.447764	-84.909980	-	101	11/21/2017	Matt Brown	No	No	
W2BCO005	Low	PEM	5.7	0	0.006	0.010	0.000	33.450364	-84.910163	267	457	11/21/2017	Matt Brown	No	No	
W3CCA002	Moderate	PFO	6.9	156	0.173	0.098	0.000	33.467491	-84.911250	7,555	4,251	10/24/2017	Jesse Brown	No	No	
W3CCA002	High	PEM	6.9	90	0.094	0.060	0.000	33.467811	-84.911275	4,101	2,604	10/24/2017	Jesse Brown	No	No	
W3CCA003	High	PFO	7.2	0	0.000	0.003	0.000	33.472489	-84.911372	-	118	12/19/2017	Jamie Morgan	No	No	
W3CCA004	Moderate	PFO	8.0	0	0.018	0.019	0.000	33.478594	-84.905954	767	836	6/12/2018	Matt Jenkins	No	No	N/A, Wetland exhibited full re-vegetation upon follow-up 6/12/18 assessment
W1ACA003	Moderate	PEM	9.4	0	0.001	0.006	0.000	33.494523	-84.896605	24	280	11/21/2017	Matt Brown	No	No	
W2BDO001	Moderate	PEM	16.1	0	0.000	0.006	0.000	33.589627	-84.901457	-	247	12/1/2017	Matt Brown	No	No	
W3CDO003	Moderate	PFO	21.3	54	0.064	0.025	0.000	33.660588	-84.890714	2,773	1,079	11/10/2017	Jesse Brown	No	No	
W3CDO003	Moderate	PEM	21.3	0	0.000	0.004	0.000	33.660487	-84.890632	-	165	11/10/2017	Jesse Brown	No	No	
W3CDO004	Moderate	PEM	21.5	0	0.001	0.015	0.000	33.662555	-84.888821	49	668	11/10/2017	Jesse Brown	No	No	
W3CDO004	High	PFO	21.5	63	0.061	0.010	0.000	33.662510	-84.888731	2,663	445	11/10/2017	Jesse Brown	No	No	
W1ADO004	Moderate	PFO	23.1	539	0.611	0.304	0.000	33.681809	-84.880669	26,622	13,262	10/17/2017	Matt Jenkins	No	No	
W3CDO007	Moderate	PSS	23.6	593	0.673	0.450	0.000	33.688781	-84.884721	29,329	19,622	10/17/2017	Matt Jenkins	No	No	
W1ADO002	Moderate	PSS	24.7 REROUTE	0	0.006	0.018	0.000	33.702618	-84.879564	245	787	12/1/2017	Matt Brown	No	No	
W1ADO003	Moderate	PFO	25.6	535	0.572	0.181	0.000	33.714870	-84.872068	24,895	7,863	10/25/2017	Jesse Brown	No	No	
W1ADO003	Moderate	PEM	25.6	0	0.032	0.116	0.000	33.714744	-84.871960	1,372	5,059	10/25/2017	Jesse Brown	No	No	
W2BDO006	Moderate	PEM	26.9 REROUTE	0	0.002	0.006	0.000	33.732909	-84.871838	73	272	3/22/2018	Matt Jenkins	No	No	
W2BDO006	Low	PFO	27.0	156	0.168	0.091	0.000	33.733467	-84.870784	7,301	3,979	3/22/2018	Matt Jenkins	No	No	
W2BDO007	Moderate	PFO	27.1	184	0.166	0.058	0.000	33.733900	-84.870418	7,215	2,517	11/1/2018	Matt Jenkins	No	No	N/A, 11/1/18 re-visit exhibited full revegetation
W3CDO008	Low	PEM	27.4	70	0.078	0.047	0.000	33.736110	-84.864041	3,377	2,042	3/22/2018	Matt Jenkins	No	No	
W2BDO008	High	PFO	28.8	788	0.939	0.429	0.000	33.752448	-84.860357	40,891	18,692	10/25/2017	Matt Jenkins	No	No	
W2BDO008	Moderate	PEM	28.8	0	0.002	0.048	0.000	33.751719	-84.859936	78	2,075	10/25/2017	Matt Jenkins	No	No	
W2BDO009	Moderate	PFO	29.0	89	0.106	0.051	0.000	33.754857	-84.861361	4,598	2,241	12/1/2017	Matt Brown	No	No	
W2BDO012	High	PFO	29.9	437	0.524	0.189	0.000	33.767477	-84.866609	22,813	8,223	10/25/2017	Jesse Brown	No	No	
W2BDO011 ("XWDO002-PSS")	Moderate	PSS	29.9	545	0.718	0.289	0.000	33.766389	-84.866127	31,276	12,589	10/25/2017	Jesse Brown	No	No	
W2BDO011	Moderate	PSS	29.9	108	0.102	0.035	0.000	33.766933	-84.866229	4,443	1,525	10/25/2017	Jesse Brown	No	No	
W2BDO012	Moderate	PEM	30.0	0	0.009	0.010	0.000	33.768836	-84.867120	413	448	10/25/2017	Jesse Brown	No	No	
W2BPA007	Moderate	PFO	30.9	308	0.251	0.102	0.000	33.781075	-84.870482	10,930	4,437	10/25/2017	Jesse Brown	No	No	
W2BPA009	Low	PSS	31.8	34	0.041	0.021	0.000	33.791170	-84.876832	1,779	909	11/9/2017	Matt Brown	No	No	
W2BPA010	Moderate	PFO	31.9	106	0.136	0.066	0.000	33.791659	-84.877014	5,937	2,893	11/9/2017	Matt Brown	No	No	
W1APA019	Moderate	PEM	32.5	129	0.144	0.054	0.000	33.800781	-84.880354	6,291	2,349	11/9/2017	Jesse Brown	No	No	
W1APA020	Low	PEM	32.6	0	0.000	0.004	0.000	33.802180	-84.880129	-	160	11/9/2017	Jesse Brown	No	No	
W1APA021	Moderate	PEM	32.8	71	0.073	0.047	0.000	33.804563	-84.880991	3,178	2,060	11/9/2017	Jesse Brown	No	No	
W3CPA032	Low	PSS	32.8	154	0.220	0.112	0.000	33.805145	-84.881015	9,583	4,859	11/9/2017	Jesse Brown	No	No	
W1APA001	Low	PEM	34.1	123	0.142	0.088	0.000	33.822030	-84.889279	6,194	3,820	11/9/2017	Jesse Brown	No	No	
W1APA003	Low	PEM	34.4	0	0.002	0.007	0.000	33.825818	-84.890388	67	316	11/9/2017	Jesse Brown	No	No	
W1APA006	Low	PEM	34.4	0	0.000	0.000	0.000	33.826370	-84.890434	-	22	11/9/2017	Jesse Brown	No	No	

Dalton Expansion Project
Post-Construction Wetland Monitoring Report

20200324-5145

Dalton Expansion Project - Post Construction Wetland Monitoring
USACE NWP 12: SAS-2014-00203 October 31, 2016

Wetland ID	Wetland Quality (Pre-Construction)	Cowardin Classification (Pre-Construction)	MP	Linear Distance Crossed (feet)	Permanent ROW (acres) ^c	Temporary Workspace (acres) ^c	Additional Temporary Workspace (acres) ^c	Latitude	Longitude	Permanent ROW (square feet)	Temporary Workspace (square feet)	Date Monitoring Completed	Inspector	Post-Construction Disturbance(s) present?	Corrective Action Required?	Proposed Corrective Action
W1APA005	Low	PEM	34.5	0	0.000	0.011	0.000	33.827607	-84.890584	8	485	11/9/2017	Jesse Brown	No	No	
W3CPA017	Low	PEM	35.2	1	0.004	0.007	0.000	33.837265	-84.891675	185	302	3/22/2018	Matt Jenkins	No	No	
W3CPA018	Low	PEM	35.4	12	0.008	0.005	0.000	33.839823	-84.891970	368	201	11/9/2017	Jesse Brown	No	No	
W3CPA019	Moderate	PEM	36.6	127	0.098	0.114	0.000	33.858435	-84.892886	4,272	4,944	11/9/2017	Matt Brown	No	No	
W3CPA019	High	PFO	36.6	0	0.037	0.000	0.000	33.858342	-84.893037	1,629	-	11/9/2017	Matt Brown	No	No	
W3CPA020	Low	PEM	36.9	2	0.006	0.008	0.000	33.861521	-84.892747	275	334	3/22/2018	Matt Jenkins	No	No	
W3CPA001	Moderate	PSS	37.1	669	0.764	0.000	0.000	33.865388	-84.892954	33,267	-	11/9/2017	Matt Brown	No	No	
W3CPA007	Moderate	PFO	37.7	570	0.715	0.305	0.000	33.872574	-84.894549	31,129	13,277	12/19/2017	Matt Brown	No	No	
W3CPA007	Low	PEM	37.7	0	0.000	0.016	0.000	33.873460	-84.894564	2	685	12/19/2017	Matt Brown	No	No	
W3CPA008	Moderate	PEM	38.0	484	0.353	0.175	0.000	33.877233	-84.895743	15,378	7,638	12/19/2017	Matt Brown	No	No	
W3CPA008	Moderate	PFO	38.0	484	0.266	0.197	0.000	33.877234	-84.895885	11,587	8,581	12/19/2017	Matt Brown	No	No	
W3CPA009	Low	PEM	38.2	0	0.002	0.026	0.000	33.880148	-84.896556	70	1,147	12/19/2017	Matt Brown	No	No	
W3CPA009	Moderate	PFO	38.2	162	0.111	0.069	0.000	33.879938	-84.896583	4,835	3,006	12/19/2017	Matt Brown	No	No	
W3CPA011	Low	PEM	38.6	15	0.010	0.009	0.000	33.885582	-84.898191	454	377	6/12/2018	Matt Jenkins	No	No	N/A, Wetland exhibited full re-vegetation upon follow-up 6/12/18 assessment
W3CPA012	Low	PEM	38.9	32	0.034	0.014	0.000	33.889732	-84.899476	1,499	629	12/19/2017	Matt Brown	No	No	
W3CPA013	Low	PEM	39.0	0	0.007	0.008	0.000	33.892344	-84.900192	308	363	12/19/2017	Matt Brown	No	No	
W3CPA014	Low	PEM	39.5	0	0.023	0.025	0.000	33.899210	-84.902264	1,020	1,083	12/19/2017	Matt Brown	No	No	
W3CPA015	Moderate	PSS	40.1	54	0.056	0.031	0.000	33.906591	-84.904628	2,427	1,335	6/12/2018	Matt Jenkins	No	No	N/A, Wetland exhibited full re-vegetation upon follow-up 6/12/18 assessment
W1APA009	Low	PEM	44.1 REROUTE	0	0.000	0.000	0.000	33.953504	-84.899552	-	8	10/18/2017	Matt Jenkins	No	No	
W3CPA036	Moderate	PFO	46.0 REROUTE	0	0.000	0.002	0.000	33.973316	-84.880395	-	74	10/18/2017	Matt Jenkins	No	No	
W3CPA042	Moderate	PFO	46.6 REROUTE	33	0.025	0.013	0.000	33.979312	-84.872562	1,085	579	10/18/2017	Matt Jenkins	No	No	
W3CPA040	Low	PEM	54.5 REROUTE	0	0.000	0.001	0.000	33.073716	-84.868697	-	38		Jesse Brown	No	No	
W3CBA001	Moderate	PEM	55.3 REROUTE MOC 0.5	60	0.063	0.033	0.000	33.083881	-84.882491	2,738	1,434	11/1/2018	Matt Jenkins	No	No	N/A, 11/1/18 re-visit exhibited full revegetation
W3CBA002	Moderate	PFO	62.1	159	0.184	0.134	0.000	33.147361	-84.965360	8,029	5,829	11/8/2017	Jesse Brown	No	No	
W3CBA002	Low	PEM	62.2	553	0.636	0.375	0.000	34.148853	-84.965434	27,687	16,340	11/8/2017	Jesse Brown	No	No	
W1ABA001	Moderate	PFO	66.7	59	0.073	0.037	0.000	34.206987	-84.944262	3,188	1,632	5/1/2018	Matt Jenkins	No	No	
W1ABA002	Moderate	PFO	66.8	0	0.029	0.040	0.000	34.208892	-84.943480	1,244	1,733	5/1/2018	Matt Jenkins	No	No	
W2BBA001	Low	PEM	67.3	50	0.006	0.059	0.000	34.214701	-84.941238	267	2,568	11/8/2017	Jesse Brown	No	No	
W2BBA003	Low	PEM	67.4	0	0.020	0.015	0.000	34.215976	-84.940508	878	674	5/1/2018	Matt Jenkins	No	No	
W2BBA005	Low	PEM	67.9	0	0.000	0.002	0.000	34.223797	-84.937040	0	73	11/8/2017	Jesse Brown	No	No	
W2BBA011	Low	PEM	70.6	0	0.006	0.013	0.000	34.260493	-84.921905	269	558	11/8/2017	Matt Brown	No	No	
W2BBA011	Moderate	PFO	70.6	59	0.057	0.014	0.000	34.260471	-84.921794	2,465	606	11/8/2017	Matt Brown	No	No	
W2BBA013	Low	PEM	71.6	192	0.136	0.050	0.000	34.273780	-84.917264	5,931	2,194	11/8/2017	Matt Brown	No	No	
W2BBA013	Moderate	PFO	71.6	0	0.052	0.026	0.000	34.273741	-84.917155	2,254	1,142	11/8/2017	Matt Brown	No	No	
W2BBA014	Low	PEM	72.0	0	0.001	0.012	0.000	34.279208	-84.915433	61	513	5/1/2018	Matt Jenkins	No	No	
W2BBA009	Low	PEM	74.6	0	0.013	0.166	0.057	34.316129	-84.904311	566	9,714	11/9/2017	Matt Brown	No	No	
W2BBA009	Moderate	PFO	74.6	72	0.686	0.256	0.001	34.315549	-84.904645	29,882	11,195	5/1/2018	Matt Jenkins	No	No	
W3CGO003	Low	PEM	86.7	0	0.000	0.000	0.000	34.481707	-84.881921	-	10	11/10/2017	Matt Brown	No	No	
W2BGO001	Moderate	PFO	90.7	659	0.483	0.077	0.000	34.536105	-84.886351	21,039	3,355	12/20/2017	Jamie Morgan	No	No	
W3CGO008	Moderate	PFO	92.1 REROUTE	0	0.000	0.001	0.000	34.551803	-84.893580	-	40	11/15/2017	Matt Brown	No	No	
W3CGO007	Low	PEM	92.1 REROUTE	0	0.000	0.003	0.000	34.552141	-84.893471	-	149	11/15/2017	Matt Brown	No	No	
W3CGO009	Low	PEM	93.0	0	0.000	0.000	0.013	34.565383	-84.897460	-	578	11/15/2017	Matt Brown	No	No	
W2BGO010	Low	PEM	93.5	27	0.027	0.012	0.000	34.571662	-84.898026	1,177	530	11/15/2017	Matt Brown	No	No	
W2BGO015	Low	PEM	93.6	31	0.037	0.020	0.000	34.573560	-84.898984	1,625	858	11/15/2017	Matt Brown	No	No	
W2BGO014	Low	PEM	93.6	0	0.000	0.001	0.000	34.573402	-84.899074	-	27	11/15/2017	Matt Brown	No	No	

Dalton Expansion Project
Post-Construction Wetland Monitoring Report

20200324-5145
11/15/2017

Dalton Expansion Project - Post Construction Wetland Monitoring
USACE NWP 12: SAS-2014-00203 October 31, 2016

Wetland ID	Wetland Quality (Pre-Construction)	Cowardin Classification (Pre-Construction)	MP	Linear Distance Crossed (feet)	Permanent ROW (acres) ^c	Temporary Workspace (acres) ^c	Additional Temporary Workspace (acres) ^c	Latitude	Longitude	Permanent ROW (square feet)	Temporary Workspace (square feet)	Date Monitoring Completed	Inspector	Post-Construction Disturbance(s) present?	Corrective Action Required?	Proposed Corrective Action
W2BGO017	Moderate	PFO	93.7	43	0.057	0.031	0.000	34.575083	-84.899826	2,493	1,359	11/15/2017	Matt Brown	No	No	
W2BGO016	Low	PEM	93.7	42	0.047	0.024	0.000	34.574483	-84.899527	2,067	1,066	11/15/2017	Matt Brown	No	No	
W3CGO010	Low	PSS	95.0	81	0.087	0.050	0.126	34.592584	-84.900057	3,788	7,639	11/17/2017	Matt Brown	No	No	
W3CGO004	Moderate	PSS	95.0	802	0.277	0.298	0.081	34.594022	-84.900196	12,066	16,509	11/17/2017	Matt Brown	No	No	
W2BGO018	Moderate	PEM	95.1	9	0.079	0.047	0.000	34.594472	-84.900160	3,452	2,026	11/17/2017	Matt Brown	No	No	
W3CGO004	Moderate	PFO	95.1	442	0.481	0.642	0.322	34.594193	-84.900353	20,949	41,992	11/17/2017	Matt Brown	No	No	
W3CGO004	Low	PEM	95.4	504	0.601	0.308	0.000	34.597218	-84.899919	26,196	13,405	11/17/2017	Matt Brown	No	No	
W3CGO200	Low	PFO	95.8	62	0.020	0.020	0.000	34.603096	-84.894960	871	871	11/17/2017	Matt Brown	No	No	
W3CMU020	Moderate	PFO	96.7	114	0.060	0.020	0.000	34.608544	-84.881420	2,614	871	8/16/2019	Matt Jenkins	No	No	N/A, 8/16/19 re-visit exhibited full revegetation
W1AMU004	Moderate	PFO	99.6	0	0.000	0.004	0.000	34.633731	-84.846775	-	156	12/20/2017	Jamie Morgan	No	No	
W1AMU001	Moderate	PEM	100.3	128	0.150	0.097	0.000	34.640415	-84.838249	6,541	4,232	12/20/2017	Jamie Morgan	No	No	
W3CMU012	Moderate	PFO	102.6	47	0.056	0.026	0.000	34.672204	-84.835297	2,433	1,149	11/1/2017	Matt Jenkins	No	No	
W3CMU019	Moderate	PFO	103.5	22	0.026	0.037	0.000	34.684266	-84.834607	1,119	1,614	11/1/2017	Matt Jenkins	No	No	
W3CMU018	Moderate	PFO	103.6	4	0.018	0.028	0.000	34.685645	-84.835373	787	1,203	11/1/2017	Matt Jenkins	No	No	
W3CMU003	Moderate	PFO	103.8	0	0.010	0.022	0.000	34.688100	-84.836543	415	963	11/1/2017	Matt Jenkins	No	No	
W3CMU005	Low	PSS	104.7	0	0.000	0.000	0.000	34.697582	-84.845470	-	0	12/20/2017	Jamie Morgan	No	No	
W3CMU013	High	PFO	105.5	706	0.786	0.304	0.000	34.697974	-84.859874	34,233	13,263	11/1/2017	Matt Jenkins	No	No	
W3CMU013	Moderate	PSS	105.6	481	0.540	0.209	0.000	34.698234	-84.861856	23,532	9,110	11/1/2017	Matt Jenkins	No	No	
W3CMU015	Moderate	PSS	106.1	56	0.053	0.021	0.000	34.698606	-84.870524	2,330	915	11/1/2017	Matt Jenkins	No	No	
W3CMU016	Low	PSS	106.2	27	0.024	0.008	0.000	34.698569	-84.871587	1,032	368	8/16/2019	Matt Jenkins	No	No	N/A, 8/16/19 re-visit exhibited full revegetation
W3CMU017	Low	PEM	106.2	91	0.112	0.054	0.000	34.698652	-84.872468	4,876	2,331	8/16/2019	Matt Jenkins	No	No	N/A, 8/16/19 re-visit exhibited full revegetation
Dalton Lateral - AGL Spur																
W1AMU005	Low	PSS	0.0 MOC 0.4	149	0.175	0.083	0.000	34.700031	-84.850297	7,617	3,628	11/1/2017	Matt Jenkins	No	No	
W1AMU003	Low	PEM	0.7	0	0.018	0.022	0.000	34.705174	-84.849896	797	938	11/1/2017	Matt Jenkins	No	No	

APPENDIX B

Transco's Wetland and Waterbody Construction and Mitigation Procedures



Transcontinental Gas Pipe Line Company, LLC

Wetland and Waterbody Construction and Mitigation Procedures

Dalton Expansion Project

Docket No. PF-14-10-000

February 2015

Table 1			
Justifications for Transco's Proposed Modifications to the FERC Upland Erosion Control, Revegetation, and Maintenance Procedures			
Section	FERC Version ^a	Transco Version ^b	Transco Justification ^c
I.A	(Entire Section I has been replaced)	<i>The intent of these Procedures is to minimize the extent and duration of Project-related disturbance of wetlands and waterbodies. Transcontinental Gas Pipe Line Company, LLC (Transco) has specified measures considered unnecessary, technically infeasible, or unsuitable due to local conditions, and has described any alternatives herein. Project-related impacts on non-wetland areas are addressed in Transco's Upland Erosion Control, Revegetation, and Maintenance Plan (Transco's Plan).</i>	Provides an introduction to Transco's Procedures.
I.B.1	<p>a. "minor waterbody" includes all waterbodies less than or equal to 10 feet wide at the water's edge at the time of construction;</p> <p>b. "intermediate waterbody" includes all waterbodies greater than 10 feet wide but less than or equal to 100 feet wide at the water's edge at the time of construction; and</p> <p>c. "major waterbody" includes all waterbodies greater than 100 feet wide at the water's edge at the time of construction.</p>	<p>a. "minor waterbody" includes all waterbodies less than or equal to 10 feet wide at the water's edge at the time of crossing;</p> <p>b. "intermediate waterbody" includes all waterbodies greater than 10 feet wide but less than or equal to 100 feet wide at the water's edge at the time of crossing; and</p> <p>c. "major waterbody" includes all waterbodies greater than 100 feet wide at the water's edge at the time of crossing.</p>	Clarifies that the width of a given crossing is determined at the time that the features is crossed rather than being determined for the duration of construction.
IV.A.1.c	Fuel trucks transporting fuel to on-site equipment travel only on approved access roads;	Fuel trucks transporting fuel to on-site equipment travel on approved access roads as well as on the construction right-of-way ;	Fuel trucks may need to travel along the construction ROW to deliver fuel due to the distance between access points for the Project. An SPCC plan has been developed for the Project and will be implemented during construction.
IV.A.1.d	All equipment is parked overnight and/or fueled at least 100 feet from a waterbody or in an upland area at least 100 feet from a wetland boundary.	All equipment is parked overnight and/or fueled at least 100 feet from a waterbody or in an upland area at least 100 feet from a wetland boundary with the exception of proposed dry stream crossings using the dam and pump crossing method. Refueling of pumps will be necessary within 100 feet of the associated waterbody to be crossed.	Refueling of pumps will be necessary within 100 feet of the associated waterbody to be crossed using the dam and pump crossing method. Secondary containment will be provided for overnight. An SPCC plan has been developed for the Project and will be implemented during construction.

Table 1			
Justifications for Transco's Proposed Modifications to the FERC Upland Erosion Control, Revegetation, and Maintenance Procedures			
Section	FERC Version ^a	Transco Version ^b	Transco Justification ^c
V.B.10	Temporary Erosion and Sediment Control	Temporary Erosion and Sediment Control for Waterbodies	Clarifying title in this section
V.B.2.a	Locate all extra work areas (such as staging areas and additional spoil storage areas) at least 50 feet away from water's edge except where the adjacent upland consists of cultivated or rotated cropland or other disturbed land.	Locate all extra work areas (such as staging areas and additional spoil storage areas) at least 50 feet away from water's edge. Water's edge shall be considered the location where vegetation has been wrested by normal stream flow or wave action from the banks.	Clarifies definition of water's edge.
V.B.3.c	Where pipelines parallel a waterbody, maintain at least 15 feet of undisturbed vegetation between the waterbody (and any adjacent wetland) and the construction right-of-way, except where maintaining this offset will result in greater environmental impact.	Where pipelines parallel a waterbody, maintain at least 25 feet of undisturbed vegetation between the waterbody (and any adjacent wetland) and the construction right-of-way. Where this general procedure is not possible, refer to the GA EPD buffer variance requirement.	The Transco version replaces the FERC version with more conservative Georgia EPD requirements.
V.B.4.a	All spoil from minor and intermediate waterbody crossings, and upland spoil from major waterbody crossings, must be placed in the construction right-of-way at least 10 feet from the water's edge, or in additional extra work areas as described in section V.B.2.	All spoil from minor and intermediate waterbody crossings, and upland spoil from major waterbody crossings, must be placed in the construction right-of-way at least 50 feet from the water's edge, or in additional extra work areas as described in section V.B.2. Water's edge shall be considered the location where vegetation has been wrested by normal stream flow or wave action from the banks.	Clarifies definition of water's edge.
V.C.8	Install a permanent slope breaker across the construction right-of-way at the base of slopes greater than 5 percent that are less than 50 feet from the waterbody, or as needed to prevent sediment transport into the waterbody. In addition, install sediment barriers as outlined in the Plan.	Install a permanent slope breaker across the construction right-of-way at all waterbody crossings . In addition, install sediment barriers as outlined in the Plan.	The Transco version replaces the FERC version with more conservative measure.

Table 1			
Justifications for Transco's Proposed Modifications to the FERC Upland Erosion Control, Revegetation, and Maintenance Procedures			
Section	FERC Version ^a	Transco Version ^b	Transco Justification ^c
V.D.1	Limit routine vegetation mowing or clearing adjacent to waterbodies to allow a riparian strip at least 25 feet wide, as measured from the waterbody's mean high water mark, to permanently revegetate with native plant species across the entire construction right-of-way. However, to facilitate periodic corrosion/leak surveys, a corridor	Limit routine vegetation mowing or clearing adjacent to waterbodies to allow a riparian strip at least 25 feet wide, as measured from the <i>waterbody's mean high water mark (point where vegetation has been wrested by normal stream flow or wave action from the banks)</i> , to permanently revegetate with native plant species across the entire construction right-of-way. However, to facilitate periodic corrosion/leak surveys, a corridor	Clarifies definition of water's edge.
VI.A.3	Limit the width of the construction right-of-way to 75 feet or less.	Limit the width of the construction right-of-way to 75 feet or less. <i>Transco is proposing to use a 75-foot-wide corridor through wetlands plus ATWS along with normal workspace widths on the adjacent upland areas at wetland crossings provided in the table that follows. Soil structure and presence of water commonly found in wetlands along with the large surface loads of construction equipment and materials to construct the Project contribute to the need to have ATWS in certain wetlands. Additionally, in non-saturated wetlands, topsoil segregation is required and therefore ATWS is needed in certain areas to accommodate topsoil segregation.</i>	Provides proposed justification for additional workspace in specific wetlands listed in the accompanying table.
VI.B.3	Temporary Sediment Control	Temporary Sediment Control <i>for Wetlands</i>	Clarifying title in this section

a – May 2013 FERC Wetland and Waterbody Construction and Mitigation Procedures
b – Changes indicated in ***bold italic*** text
c - Justification stating rationale for each proposed modification; Modifications are required to provide equal or greater measures than those provided in the FERC Procedures

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I. Applicability

- A. ***The intent of these Procedures is to minimize the extent and duration of Project-related disturbance of wetlands and waterbodies. Transcontinental Gas Pipe Line Company, LLC (Transco) has specified measures considered unnecessary, technically infeasible, or unsuitable due to local conditions, and has described any alternatives herein. Project-related impacts on non-wetland areas are addressed in Transco's Upland Erosion Control, Revegetation, and Maintenance Plan (Transco's Plan).***

Once a project is authorized, project sponsors can request further changes as variances to the measures in these Procedures (or the applicant's approved procedures). The Director of the Office of Energy Projects (Director) will consider approval of variances upon the project sponsor's written request, if the Director agrees that a variance:

1. provides equal or better environmental protection;
2. is necessary because a portion of these Procedures is infeasible or unworkable based on project-specific conditions; or
3. is specifically required in writing by another federal, state, or Native American land management agency for the portion of the project on its land or under its jurisdiction.

Sponsors of projects planned for construction under the automatic authorization provisions in the FERC's regulations must receive written approval for any variances in advance of construction.

Project-related impacts on non-wetland areas are addressed in the staff's Upland Erosion Control, Revegetation, and Maintenance Plan (Plan).

B. Definitions

1. "Waterbody" includes any natural or artificial stream, river, or drainage with perceptible flow at the time of crossing, and other permanent waterbodies such as ponds and lakes:
 - a. "minor waterbody" includes all waterbodies less than or equal to 10 feet wide at the water's edge at the time of **crossing**;
 - b. "intermediate waterbody" includes all waterbodies greater than 10 feet wide but less than or equal to 100 feet wide at the water's edge at the time of **crossing**; and
 - c. "major waterbody" includes all waterbodies greater than 100 feet wide at the water's edge at the time of **crossing**.
2. "Wetland" includes any area that is not in actively cultivated or rotated cropland and that satisfies the requirements of the current federal methodology for identifying and delineating wetlands.

II. Preconstruction Filing

- A. The following information must be filed with the Secretary of the FERC (Secretary) prior to the beginning of construction, for the review and written approval by the Director:
 - 1. Site-specific justifications for extra work areas that would be closer than 50 feet from a waterbody or wetland; and
 - 2. Site-specific justifications for the use of a construction right-of-way greater than 75-feet-wide in wetlands.
- B. The following information must be filed with the Secretary prior to the beginning of construction. These filing requirements do not apply to projects constructed under the automatic authorization provisions in the FERC's regulations:
 - 1. Spill Prevention and Response Procedures specified in section IV.A;
 - 2. A schedule identifying when trenching or blasting will occur within each waterbody greater than 10 feet wide, within any designated coldwater fishery, and within any waterbody identified as habitat for federally-listed threatened or endangered species. The project sponsor will revise the schedule as necessary to provide FERC staff at least 14 days advance notice. Changes within this last 14-day period must provide for at least 48 hours advance notice;
 - 3. Plans for horizontal directional drills (HDD) under wetlands or waterbodies, specified in section V.B.6.d;
 - 4. Site-specific plans for major waterbody crossings, described in section V.B.9;
 - 5. A wetland delineation report as described in section VI.A.1, if applicable; and
 - 6. The hydrostatic testing information specified in section VII.B.3.

III. Environmental Inspections

- A. At least one Environmental Inspector having knowledge of the wetland and waterbody conditions in the project area is required for each construction spread. The number and experience of Environmental Inspectors assigned to each construction spread shall be appropriate for the length of the construction spread and the number/significance of resources affected.
- B. The Environmental Inspector's responsibilities are outlined in the Upland Erosion Control, Revegetation, and Maintenance Plan (Plan).

IV. Preconstruction Planning

- A. The project sponsor shall develop project-specific Spill Prevention and Response Procedures that meet applicable requirements of state and federal agencies. A copy must be filed with the Secretary prior to construction and made available in the field on each construction spread. This filing requirement does not apply to projects constructed under the automatic authorization provisions in the FERC's regulations.
1. It shall be the responsibility of the project sponsor and its contractors to structure their operations in a manner that reduces the risk of spills or the accidental exposure of fuels or hazardous materials to waterbodies or wetlands. The project sponsor and its contractors must, at a minimum, ensure that:
 - a. all employees handling fuels and other hazardous materials are properly trained;
 - b. all equipment is in good operating order and inspected on a regular basis;
 - c. fuel trucks transporting fuel to on-site equipment travel only on approved access roads **as well as on the construction right-of-way**;
 - d. all equipment is parked overnight and/or fueled at least 100 feet from a waterbody or in an upland area at least 100 feet from a wetland boundary **with the exception of proposed dry stream crossings using the dam and pump crossing method. Refueling of pumps will be necessary within 100 feet of the associated waterbody to be crossed.** These activities can occur closer only if the Environmental Inspector determines that there is no reasonable alternative, and the project sponsor and its contractors have taken appropriate steps (including secondary containment structures) to prevent spills and provide for prompt cleanup in the event of a spill;
 - e. hazardous materials, including chemicals, fuels, and lubricating oils, are not stored within 100 feet of a wetland, waterbody, or designated municipal watershed area, unless the location is designated for such use by an appropriate governmental authority. This applies to storage of these materials and does not apply to normal operation or use of equipment in these areas;
 - f. concrete coating activities are not performed within 100 feet of a wetland or waterbody boundary, unless the location is an existing industrial site designated for such use. These activities can occur closer only if the Environmental Inspector determines that there is no reasonable alternative, and the project sponsor and its contractors have taken appropriate steps (including

- secondary containment structures) to prevent spills and provide for prompt cleanup in the event of a spill;
- g. pumps operating within 100 feet of a waterbody or wetland boundary utilize appropriate secondary containment systems to prevent spills; and
 - h. bulk storage of hazardous materials, including chemicals, fuels, and lubricating oils have appropriate secondary containment systems to prevent spills.
2. The project sponsor and its contractors must structure their operations in a manner that provides for the prompt and effective cleanup of spills of fuel and other hazardous materials. At a minimum, the project sponsor and its contractors must:
- a. ensure that each construction crew (including cleanup crews) has on hand sufficient supplies of absorbent and barrier materials to allow the rapid containment and recovery of spilled materials and knows the procedure for reporting spills and unanticipated discoveries of contamination;
 - b. ensure that each construction crew has on hand sufficient tools and material to stop leaks;
 - c. know the contact names and telephone numbers for all local, state, and federal agencies (including, if necessary, the U. S. Coast Guard and the National Response Center) that must be notified of a spill; and
 - d. follow the requirements of those agencies in cleaning up the spill, in excavating and disposing of soils or other materials contaminated by a spill, and in collecting and disposing of waste generated during spill cleanup.

B. Agency Coordination

The project sponsor must coordinate with the appropriate local, state, and federal agencies as outlined in these Procedures and in the FERC's Orders.

V. Waterbody Crossings

A. Notification Procedures and Permits

1. Apply to the U.S. Army Corps of Engineers (COE), or its delegated agency, for the appropriate wetland and waterbody crossing permits.
2. Provide written notification to authorities responsible for potable surface water supply intakes located within 3 miles downstream of the crossing at least 1 week before beginning work in the waterbody,

or as otherwise specified by that authority.

3. Apply for state-issued waterbody crossing permits and obtain individual or generic section 401 water quality certification or waiver.
4. Notify appropriate federal and state authorities at least 48 hours before beginning trenching or blasting within the waterbody, or as specified in applicable permits.

B. Installation

1. Time Window for Construction

Unless expressly permitted or further restricted by the appropriate federal or state agency in writing on a site-specific basis, instream work, except that required to install or remove equipment bridges, must occur during the following time windows:

- a. coldwater fisheries - June 1 through September 30; and
- b. coolwater and warmwater fisheries - June 1 through November 30.

2. Extra Work Areas

- a. Locate all extra work areas (such as staging areas and additional spoil storage areas) at least 50 feet away from water's edge. ***Water's edge shall be considered the location where vegetation has been wrested by normal stream flow or wave action from the banks.***
- b. The project sponsor shall file with the Secretary for review and written approval by the Director, site-specific justification for each extra work area with a less than 50-foot setback from the water's edge, except where the adjacent upland consists of cultivated or rotated cropland or other disturbed land. The justification must specify the conditions that will not permit a 50-foot setback and measures to ensure the waterbody is adequately protected.
- c. Limit the size of extra work areas to the minimum needed to construct the waterbody crossing.

3. General Crossing Procedures

- a. Comply with the COE, or its delegated agency, permit terms and conditions.
- b. Construct crossings as close to perpendicular to the axis of the waterbody channel as engineering and routing conditions permit.
- c. Where pipelines parallel a waterbody, maintain at least **25** feet of

undisturbed vegetation between the waterbody (and any adjacent wetland) and the construction right-of-way. **Where this general procedure is not possible, refer to the GA EPD buffer variance requirement.**

- d. Where waterbodies meander or have multiple channels, route the pipeline to minimize the number of waterbody crossings.
 - e. Maintain adequate waterbody flow rates to protect aquatic life, and prevent the interruption of existing downstream uses.
 - f. Waterbody buffers (e.g., extra work area setbacks, refueling restrictions) must be clearly marked in the field with signs and/or highly visible flagging until construction-related ground disturbing activities are complete.
 - g. Crossing of waterbodies when they are dry or frozen and not flowing may proceed using standard upland construction techniques in accordance with the Plan, provided that the Environmental Inspector verifies that water is unlikely to flow between initial disturbance and final stabilization of the feature. In the event of perceptible flow, the project sponsor must comply with all applicable Procedure requirements for “waterbodies” as defined in section I.B.1.
4. Spoil Pile Placement and Control
- a. All spoil from minor and intermediate waterbody crossings, and upland spoil from major waterbody crossings, must be placed in the construction right-of-way at least **50** feet from the water’s edge, or in additional extra work areas as described in section V.B.2. **Water’s edge shall be considered the location where vegetation has been wrested by normal stream flow or wave action from the banks.**
 - b. Use sediment barriers to prevent the flow of spoil or silt-laden water into any waterbody
5. Equipment Bridges
- a. Only clearing equipment and equipment necessary for installation of equipment bridges may cross waterbodies prior to bridge installation. Limit the number of such crossings of each waterbody to one per piece of clearing equipment.
 - b. Construct and maintain equipment bridges to allow unrestricted flow and to prevent soil from entering the waterbody. Examples of such bridges include:
 - (1) equipment pads and culvert(s);
 - (2) equipment pads or railroad car bridges without

culverts;

- (3) clean rock fill and culvert(s); and
- (4) flexi-float or portable bridges.

Additional options for equipment bridges may be utilized that achieve the performance objectives noted above. Do not use soil to construct or stabilize equipment bridges.

- c. Design and maintain each equipment bridge to withstand and pass the highest flow expected to occur while the bridge is in place. Align culverts to prevent bank erosion or streambed scour. If necessary, install energy dissipating devices downstream of the culverts.
 - d. Design and maintain equipment bridges to prevent soil from entering the waterbody.
 - e. Remove temporary equipment bridges as soon as practicable after permanent seeding.
 - f. If there will be more than 1 month between final cleanup and the beginning of permanent seeding and reasonable alternative access to the right-of-way is available, remove temporary equipment bridges as soon as practicable after final cleanup.
 - g. Obtain any necessary approval from the COE, or the appropriate state agency for permanent bridges.
6. Dry-Ditch Crossing Methods
- a. Unless approved otherwise by the appropriate federal or state agency, install the pipeline using one of the dry-ditch methods outlined below for crossings of waterbodies up to 30 feet wide (at the water's edge at the time of construction) that are state-designated as either coldwater or significant coolwater or warmwater fisheries, or federally- designated as critical habitat.
 - b. Dam and Pump
 - (1) The dam-and-pump method may be used without prior approval for crossings of waterbodies where pumps can adequately transfer streamflow volumes around the work area, and there are no concerns about sensitive species passage.
 - (2) Implementation of the dam-and-pump crossing method must meet the following performance criteria:
 - (i) use sufficient pumps, including on-site backup pumps, to maintain downstream flows;
 - (ii) construct dams with materials that prevent

sediment and other pollutants from entering the waterbody (e.g., sandbags or clean gravel with plastic liner);

- (iii) screen pump intakes to minimize entrainment of fish;
- (iv) prevent streambed scour at pump discharge; and
- (v) continuously monitor the dam and pumps to ensure proper operation throughout the waterbody crossing.

c. Flume Crossing

The flume crossing method requires implementation of the following steps:

- (1) install flume pipe after blasting (if necessary), but before any trenching;
- (2) use sand bag or sand bag and plastic sheeting diversion structure or equivalent to develop an effective seal and to divert stream flow through the flume pipe (some modifications to the stream bottom may be required to achieve an effective seal);
- (3) properly align flume pipe(s) to prevent bank erosion and streambed scour;
- (4) do not remove flume pipe during trenching, pipelaying, or backfilling activities, or initial streambed restoration efforts; and
- (5) remove all flume pipes and dams that are not also part of the equipment bridge as soon as final cleanup of the stream bed and bank is complete.

d. Horizontal Directional Drill

For each waterbody or wetland that would be crossed using the HDD method, file with the Secretary for the review and written approval by the Director, a plan that includes:

- (1) site-specific construction diagrams that show the location of mud pits, pipe assembly areas, and all areas to be disturbed or cleared for construction;
- (2) justification that disturbed areas are limited to the minimum needed to construct the crossing;
- (3) identification of any aboveground disturbance or clearing between the HDD entry and exit workspaces during construction;

- (4) a description of how an inadvertent release of drilling mud would be contained and cleaned up; and
- (5) a contingency plan for crossing the waterbody or wetland in the event the HDD is unsuccessful and how the abandoned drill hole would be sealed, if necessary.

The requirement to file HDD plans does not apply to projects constructed under the automatic authorization provisions in the FERC's regulations.

7. Crossings of Minor Waterbodies

Where a dry-ditch crossing is not required, minor waterbodies may be crossed using the open-cut crossing method, with the following restrictions:

- a. except for blasting and other rock breaking measures, complete instream construction activities (including trenching, pipe installation, backfill, and restoration of the streambed contours) within 24 hours. Streambanks and unconsolidated streambeds may require additional restoration after this period;
- b. limit use of equipment operating in the waterbody to that needed to construct the crossing; and
- c. equipment bridges are not required at minor waterbodies that do not have a state-designated fishery classification or protected status (e.g., agricultural or intermittent drainage ditches). However, if an equipment bridge is used it must be constructed as described in section V.B.5.

8. Crossings of Intermediate Waterbodies

Where a dry-ditch crossing is not required, intermediate waterbodies may be crossed using the open-cut crossing method, with the following restrictions:

- a. complete instream construction activities (not including blasting and other rock breaking measures) within 48 hours, unless site-specific conditions make completion within 48 hours infeasible;
- b. limit use of equipment operating in the waterbody to that needed to construct the crossing; and
- c. all other construction equipment must cross on an equipment bridge as specified in section V.B.5.

9. Crossings of Major Waterbodies

Before construction, the project sponsor shall file with the Secretary for the review and written approval by the Director a detailed, site-specific construction plan and scaled drawings identifying all areas to be

disturbed by construction for each major waterbody crossing (the scaled drawings are not required for any offshore portions of pipeline projects). This plan must be developed in consultation with the appropriate state and federal agencies and shall include extra work areas, spoil storage areas, sediment control structures, etc., as well as mitigation for navigational issues. The requirement to file major waterbody crossing plans does not apply to projects constructed under the automatic authorization provisions of the FERC's regulations. The Environmental Inspector may adjust the final placement of the erosion and sediment control structures in the field to maximize effectiveness.

10. Temporary Erosion and Sediment Control **for Waterbodies**

Install sediment barriers (as defined in section IV.F.3.a of the Plan) immediately after initial disturbance of the waterbody or adjacent upland. Sediment barriers must be properly maintained throughout construction and reinstalled as necessary (such as after backfilling of the trench) until replaced by permanent erosion controls or restoration of adjacent upland areas is complete. Temporary erosion and sediment control measures are addressed in more detail in the Plan; however, the following specific measures must be implemented at stream crossings:

- a. install sediment barriers across the entire construction right-of-way at all waterbody crossings, where necessary to prevent the flow of sediments into the waterbody. Removable sediment barriers (or driveable berms) must be installed across the travel lane. These removable sediment barriers can be removed during the construction day, but must be re-installed after construction has stopped for the day and/or when heavy precipitation is imminent;
- b. where waterbodies are adjacent to the construction right-of-way and the right-of-way slopes toward the waterbody, install sediment barriers along the edge of the construction right-of-way as necessary to contain spoil within the construction right-of-way and prevent sediment flow into the waterbody; and
- c. use temporary trench plugs at all waterbody crossings, as necessary, to prevent diversion of water into upland portions of the pipeline trench and to keep any accumulated trench water out of the waterbody.

11. Trench Dewatering

Dewater the trench (either on or off the construction right-of-way) in a manner that does not cause erosion and does not result in silt-laden water flowing into any waterbody. Remove the dewatering structures as soon as practicable after the completion of dewatering activities.

C. Restoration

1. Use clean gravel or native cobbles for the upper 1 foot of trench backfill in all waterbodies that contain coldwater fisheries.
2. For open-cut crossings, stabilize waterbody banks and install temporary sediment barriers within 24 hours of completing instream construction activities. For dry-ditch crossings, complete streambed and bank stabilization before returning flow to the waterbody channel.
3. Return all waterbody banks to preconstruction contours or to a stable angle of repose as approved by the Environmental Inspector.
4. Install erosion control fabric or a functional equivalent on waterbody banks at the time of final bank recontouring. Do not use synthetic monofilament mesh/netted erosion control materials in areas designated as sensitive wildlife habitat unless the product is specifically designed to minimize harm to wildlife. Anchor erosion control fabric with staples or other appropriate devices.
5. Application of riprap for bank stabilization must comply with COE, or its delegated agency, permit terms and conditions.
6. Unless otherwise specified by state permit, limit the use of riprap to areas where flow conditions preclude effective vegetative stabilization techniques such as seeding and erosion control fabric.
7. Revegetate disturbed riparian areas with native species of conservation grasses, legumes, and woody species, similar in density to adjacent undisturbed lands.
8. Install a permanent slope breaker across the construction right-of-way **at all waterbody crossings**. In addition, install sediment barriers as outlined in the Plan.

In some areas, with the approval of the Environmental Inspector, an earthen berm may be suitable as a sediment barrier adjacent to the waterbody.
9. Sections V.C.3 through V.C.7 above also apply to those perennial or intermittent streams not flowing at the time of construction.

D. Post-Construction Maintenance

1. Limit routine vegetation mowing or clearing adjacent to waterbodies to allow a riparian strip at least 25 feet wide, as measured from the **waterbody's mean high water mark (point where vegetation has been wrested by normal stream flow or wave action from the banks)**, to permanently revegetate with native plant species across the entire construction right-of-way. However, to facilitate periodic corrosion/leak surveys, a corridor centered on the pipeline and up to 10

- feet wide may be cleared at a frequency necessary to maintain the 10-foot corridor in an herbaceous state. In addition, trees that are located within 15 feet of the pipeline that have roots that could compromise the integrity of the pipeline coating may be cut and removed from the permanent right-of-way. Do not conduct any routine vegetation mowing or clearing in riparian areas that are between HDD entry and exit points.
2. Do not use herbicides or pesticides in or within 100 feet of a waterbody except as allowed by the appropriate land management or state agency.
 3. Time of year restrictions specified in section VII.A.5 of the Plan (April 15 – August 1 of any year) apply to routine mowing and clearing of riparian areas.

VI. Wetland Crossings

A. General

1. The project sponsor shall conduct a wetland delineation using the current federal methodology and file a wetland delineation report with the Secretary before construction. The requirement to file a wetland delineation report does not apply to projects constructed under the automatic authorization provisions in the FERC's regulations.

This report shall identify:

- a. by milepost all wetlands that would be affected;
- b. the National Wetlands Inventory (NWI) classification for each wetland;
- c. the crossing length of each wetland in feet; and
- d. the area of permanent and temporary disturbance that would occur in each wetland by NWI classification type.

The requirements outlined in this section do not apply to wetlands in actively cultivated or rotated cropland. Standard upland protective measures, including workspace and topsoiling requirements, apply to these agricultural wetlands.

2. Route the pipeline to avoid wetland areas to the maximum extent possible. If a wetland cannot be avoided or crossed by following an existing right-of-way, route the new pipeline in a manner that minimizes disturbance to wetlands. Where looping an existing pipeline, overlap the existing pipeline right-of-way with the new construction right-of-way. In addition, locate the loop line no more than 25 feet away from the existing pipeline unless site-specific constraints would adversely affect the stability of the existing pipeline.
3. Limit the width of the construction right-of-way to 75 feet or less.

Transco is proposing to use a 75-foot-wide corridor through wetlands plus ATWS along with normal workspace widths on the adjacent upland areas at wetland crossings provided in a table to be provided with the final version of the Procedures. Soil structure and presence of water commonly found in wetlands along with the large surface loads of construction equipment and materials to construct the Project contribute to the need to have ATWS in certain wetlands. Additionally, in non-saturated wetlands, topsoil segregation is required and therefore ATWS is needed in certain areas to accommodate topsoil segregation. Prior written approval of the Director is required where topographic conditions or soil limitations require that the construction right-of-way width within the boundaries of a federally delineated wetland be expanded beyond 75 feet. Early in the planning process the project sponsor is encouraged to identify site-specific areas where excessively wide trenches could occur and/or where spoil piles could be difficult to maintain because existing soils lack adequate unconfined compressive strength.

4. 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.
5. Implement the measures of sections V and VI in the event a waterbody crossing is located within or adjacent to a wetland crossing. If all measures of sections V and VI cannot be met, the project sponsor must file with the Secretary a site-specific crossing plan for review and written approval by the Director before construction. This crossing plan shall address at a minimum:
 - a. spoil control;
 - b. equipment bridges;
 - c. restoration of waterbody banks and wetland hydrology;
 - d. timing of the waterbody crossing;
 - e. method of crossing; and
 - f. size and location of all extra work areas.
6. No aboveground facilities will be constructed in any wetland, except where the location of such facilities outside of wetlands would prohibit compliance with U.S. Department of Transportation regulations.

B. Installation

1. Extra Work Areas and Access Roads
 - a. Locate all extra work areas (such as staging areas and additional spoil storage areas) at least 50 feet away from wetland boundaries, except where the adjacent upland consists of

cultivated or rotated cropland or other disturbed land.

- b. The project sponsor shall file with the Secretary for review and written approval by the Director, site-specific justification for each extra work area with a less than 50-foot setback from wetland boundaries, except where adjacent upland consists of cultivated or rotated cropland or other disturbed land. The justification must specify the site-specific conditions that will not permit a 50-foot setback and measures to ensure the wetland is adequately protected.
- c. The construction right-of-way may be used for access when the wetland soil is firm enough to avoid rutting or the construction right-of-way has been appropriately stabilized to avoid rutting (e.g., with timber riprap, prefabricated equipment mats, or terra mats).

In wetlands that cannot be appropriately stabilized, all construction equipment other than that needed to install the wetland crossing shall use access roads located in upland areas. Where access roads in upland areas do not provide reasonable access, limit all other construction equipment to one pass through the wetland using the construction right-of-way.

2. Crossing Procedures

- a. Comply with COE, or its delegated agency, permit terms and conditions.
- b. Assemble the pipeline in an upland area unless the wetland is dry enough to adequately support skids and pipe.
- c. Use “push-pull” or “float” techniques to place the pipe in the trench where water and other site conditions allow.
- d. Minimize the length of time that topsoil is segregated and the trench is open. Do not trench the wetland until the pipeline is assembled and ready for lowering in.
- e. Limit construction equipment operating in wetland areas to that needed to clear the construction right-of-way, dig the trench, fabricate and install the pipeline, backfill the trench, and restore the construction right-of-way.
- f. Cut vegetation just above ground level, leaving existing root systems in place, and remove it from the wetland for disposal.

The project sponsor can burn woody debris in wetlands, if approved by the COE and in accordance with state and local regulations, ensuring that all remaining woody debris is removed for disposal.

- g. Limit pulling of tree stumps and grading activities to directly over

the trenchline. Do not grade or remove stumps or root systems from the rest of the construction right-of-way in wetlands unless the Chief Inspector and Environmental Inspector determine that safety-related construction constraints require grading or the removal of tree stumps from under the working side of the construction right-of-way.

- h. Segregate the top 1 foot of topsoil from the area disturbed by trenching, except in areas where standing water is present or soils are saturated. Immediately after backfilling is complete, restore the segregated topsoil to its original location.
- i. Do not use rock, soil imported from outside the wetland, tree stumps, or brush riprap to support equipment on the construction right-of-way.
- j. If standing water or saturated soils are present, or if construction equipment causes ruts or mixing of the topsoil and subsoil in wetlands, use low-ground-weight construction equipment, or operate normal equipment on timber riprap, prefabricated equipment mats, or terra mats.
- k. Remove all project-related material used to support equipment on the construction right-of-way upon completion of construction

3. Temporary Sediment Control ***for Wetlands***

Install sediment barriers (as defined in section IV.F.3.a of the Plan) immediately after initial disturbance of the wetland or adjacent upland. Sediment barriers must be properly maintained throughout construction and reinstalled as necessary (such as after backfilling of the trench). Except as noted below in section VI.B.3.c, maintain sediment barriers until replaced by permanent erosion controls or restoration of adjacent upland areas is complete. Temporary erosion and sediment control measures are addressed in more detail in the Plan.

- a. Install sediment barriers across the entire construction right-of-way immediately upslope of the wetland boundary at all wetland crossings where necessary to prevent sediment flow into the wetland.
- b. Where wetlands are adjacent to the construction right-of-way and the right-of-way slopes toward the wetland, install sediment barriers along the edge of the construction right-of-way as necessary to contain spoil within the construction right-of-way and prevent sediment flow into the wetland.
- c. Install sediment barriers along the edge of the construction right-of-way as necessary to contain spoil and sediment within the construction right-of-way through wetlands. Remove these sediment barriers during right-of-way cleanup.

4. Trench Dewatering

Dewater the trench (either on or off the construction right-of-way) in a manner that does not cause erosion and does not result in silt-laden water flowing into any wetland. Remove the dewatering structures as soon as practicable after the completion of dewatering activities.

C. Restoration

1. Where the pipeline trench may drain a wetland, construct trench breakers at the wetland boundaries and/or seal the trench bottom as necessary to maintain the original wetland hydrology.
2. Restore pre-construction wetland contours to maintain the original wetland hydrology.
3. For each wetland crossed, install a trench breaker at the base of slopes near the boundary between the wetland and adjacent upland areas. Install a permanent slope breaker across the construction right-of-way at the base of slopes greater than 5 percent where the base of the slope is less than 50 feet from the wetland, or as needed to prevent sediment transport into the wetland. In addition, install sediment barriers as outlined in the Plan. In some areas, with the approval of the Environmental Inspector, an earthen berm may be suitable as a sediment barrier adjacent to the wetland.
4. Do not use fertilizer, lime, or mulch unless required in writing by the appropriate federal or state agency.
5. Consult with the appropriate federal or state agencies to develop a project-specific wetland restoration plan. The restoration plan shall include measures for re-establishing herbaceous and/or woody species, controlling the invasion and spread of invasive species and noxious weeds (e.g., purple loosestrife and *phragmites*), and monitoring the success of the revegetation and weed control efforts. Provide this plan to the FERC staff upon request.
6. Until a project-specific wetland restoration plan is developed and/or implemented, temporarily revegetate the construction right-of-way with annual ryegrass at a rate of 40 pounds/acre (unless standing water is present).
7. Ensure that all disturbed areas successfully revegetate with wetland herbaceous and/or woody plant species.
8. Remove temporary sediment barriers located at the boundary between wetland and adjacent upland areas after revegetation and stabilization of adjacent upland areas are judged to be successful as specified in section VII.A.4 of the Plan.

D. Post-Construction Maintenance and Reporting

1. Do not conduct routine vegetation mowing or clearing over the full width of the permanent right-of-way in wetlands. However, to facilitate periodic corrosion/leak surveys, a corridor centered on the pipeline and up to 10 feet wide may be cleared at a frequency necessary to maintain the 10-foot corridor in an herbaceous state. In addition, trees within 15 feet of the pipeline with roots that could compromise the integrity of pipeline coating may be selectively cut and removed from the permanent right-of-way. Do not conduct any routine vegetation mowing or clearing in wetlands that are between HDD entry and exit points.
2. Do not use herbicides or pesticides in or within 100 feet of a wetland, except as allowed by the appropriate federal or state agency.
3. Time of year restrictions specified in section VII.A.5 of the Plan (April 15 – August 1 of any year) apply to routine mowing and clearing of wetland areas.
4. Monitor and record the success of wetland revegetation annually until wetland revegetation is successful.
5. Wetland revegetation shall be considered successful if all of the following criteria are satisfied:
 - a. the affected wetland satisfies the current federal definition for a wetland (i.e., soils, hydrology, and vegetation);
 - b. vegetation is at least 80 percent of either the cover documented for the wetland prior to construction, or at least 80 percent of the cover in adjacent wetland areas that were not disturbed by construction;
 - c. if natural rather than active revegetation was used, the plant species composition is consistent with early successional wetland plant communities in the affected ecoregion; and
 - d. invasive species and noxious weeds are absent, unless they are abundant in adjacent areas that were not disturbed by construction.
6. Within 3 years after construction, file a report with the Secretary identifying the status of the wetland revegetation efforts and documenting success as defined in section VI.D.5, above. The requirement to file wetland restoration reports with the Secretary does not apply to projects constructed under the automatic authorization, prior notice, or advance notice provisions in the FERC's regulations.

For any wetland where revegetation is not successful at the end of 3 years after construction, develop and implement (in consultation with a professional wetland ecologist) a remedial revegetation plan to actively revegetate wetlands. Continue revegetation efforts and file a

report annually documenting progress in these wetlands until wetland revegetation is successful.

VII. Hydrostatic Testing

A. Notification Procedures and Permits

1. Apply for state-issued water withdrawal permits, as required.
2. Apply for National Pollutant Discharge Elimination System (NPDES) or state-issued discharge permits, as required.
3. Notify appropriate state agencies of intent to use specific sources at least 48 hours before testing activities unless they waive this requirement in writing.

B. General

1. Perform 100 percent radiographic inspection of all pipeline section welds or hydrotest the pipeline sections, before installation under waterbodies or wetlands.
2. If pumps used for hydrostatic testing are within 100 feet of any waterbody or wetland, address secondary containment and refueling of these pumps in the project's Spill Prevention and Response Procedures.
3. The project sponsor shall file with the Secretary before construction a list identifying the location of all waterbodies proposed for use as a hydrostatic test water source or discharge location. This filing requirement does not apply to projects constructed under the automatic authorization provisions of the FERC's regulations.

C. Intake Source and Rate

1. Screen the intake hose to minimize the potential for entrainment of fish.
2. Do not use state-designated exceptional value waters, waterbodies which provide habitat for federally listed threatened or endangered species, or waterbodies designated as public water supplies, unless appropriate federal, state, and/or local permitting agencies grant written permission.
3. Maintain adequate flow rates to protect aquatic life, provide for all waterbody uses, and provide for downstream withdrawals of water by existing users.
4. Locate hydrostatic test manifolds outside wetlands and riparian areas to the maximum extent practicable.

D. Discharge Location, Method, and Rate

1. Regulate discharge rate, use energy dissipation device(s), and install sediment barriers, as necessary, to prevent erosion, streambed scour, suspension of sediments, or excessive streamflow.
2. Do not discharge into state-designated exceptional value waters, waterbodies which provide habitat for federally listed threatened or endangered species, or waterbodies designated as public water supplies, unless appropriate federal, state, and local permitting agencies grant written permission.

APPENDIX C

Transco's Upland Erosion Control, Revegetation, and Maintenance Plan



Transcontinental Gas Pipe Line Company, LLC

Upland Erosion Control, Revegetation, and Maintenance Plan

Dalton Expansion Project

Docket No. PF-14-10-000

February 2015

Table 1			
Justifications for Transco's Proposed Modifications to the FERC Upland Erosion Control, Revegetation, and Maintenance Plan			
Section	FERC Version ^a	Transco Version ^b	Transco Justification ^c
I	(Entire Section I has been replaced)	<p><i>As outlined below, Transcontinental Gas Pipe Line Company, LLC (Transco) is proposing modifications to the FERC Plan (May 2013 Version) for the Dalton Expansion Project. This section will apply to all non-wetland areas of the Project. Wetland and waterbody features are addressed in Transco's Wetland and Waterbody Construction and Mitigation Procedures (Transco's Procedures).</i></p> <p><i>Deviations that involve measures different from those contained in this Plan will only be permitted as certificated by the Commission or by written approval of the Director of the Office of Energy Projects (OEP) or designee.</i></p>	Provides an introduction to Transco's Plan.
II.A.4	(No existing text in FERC Version)	<i>Transco agrees to a FERC Third Party Compliance Monitoring Program for non-Federal and Federal land along the length of the Project.</i>	Commits Transco to a FERC Third Party Compliance Monitoring Program for non-Federal and Federal land along the length of the Project.
II.B.1	Ensuring compliance with the requirements of this Plan, the Procedures, the environmental conditions of the Certificate authorization, the mitigation measures proposed by the applicant (as approved and/or modified by the Certificate), other environmental permits and approvals, and environmental requirements in landowner easement agreements;	Ensuring compliance with the requirements of this Plan, <i>Transco's</i> Procedures, the environmental conditions of the Certificate authorization, the mitigation measures proposed by the applicant (as approved and/or modified by the Certificate), other environmental permits and approvals, and environmental requirements in landowner easement agreements;	Clarifies that Transco will implement modified FERC Wetland and Waterbody Construction and Mitigation Procedures (Transco's Procedures) for the Project.
III.A	The project sponsor must ensure that appropriate cultural resources and biological surveys have been conducted.	<i>Transco will ensure</i> that appropriate cultural resources and biological surveys are conducted, as determined necessary by the appropriate federal and state agencies <i>and that the extent of those surveys is sufficient to accommodate possible future need for activities outside certificated work areas (i.e., buffer areas).</i>	Clarifies that biological and cultural surveys have been conducted beyond the Project boundaries.

Table 1			
Justifications for Transco's Proposed Modifications to the FERC Upland Erosion Control, Revegetation, and Maintenance Plan			
Section	FERC Version ^a	Transco Version ^b	Transco Justification ^c
IV.A.1	Any project-related ground disturbing activities outside these Certificated areas, except those needed to comply with the Plan and Procedures (e.g., slope breakers, energy-dissipating devices, dewatering structures, drain tile system repairs) will require prior Director approval.	Any project-related ground disturbing activities outside these Certificated areas, except those needed to comply with <i>this</i> Plan and <i>Transco's</i> Procedures (e.g., diversion terraces , energy-dissipating devices, dewatering structures, drain tile system repairs) will require prior Director approval.	Clarifies that Transco will implement modified FERC Wetland and Waterbody Construction and Mitigation Procedures (Transco's Procedures) for the Project.
IV.A.2	The construction right-of-way width for a project shall not exceed 75 feet or that described in the FERC application unless otherwise modified by a Certificate condition. However, in limited, non-wetland areas, this construction right-of-way width may be expanded by up to 25 feet without Director approval to accommodate full construction right-of-way topsoil segregation and to ensure safe construction where topographic conditions (such as side-slopes) or soil limitations require it. Twenty-five feet of extra construction right-of-way width may also be used in limited, non-wetland or non-forested areas for truck turn-arounds where no reasonable alternative access exists.	The construction right-of-way width for a project shall not exceed that described in the FERC application unless otherwise modified by a Certificate condition.	<p>Removes the conditional 'or' statement.</p> <p>Transco proposes to use a nominal 90-foot-wide temporary construction ROW for Dalton Lateral - Segment 1 (30-inch OD pipeline), a nominal 85-foot-wide temporary construction ROW for Dalton Lateral - Segment 2 (24-inch OD pipeline), a nominal 80-foot-wide temporary construction ROW for Dalton Lateral - Segment 3 (20-inch OD pipeline), and a nominal 75-foot-wide Temporary Construction ROW for the Dalton Lateral - AGL Spur (16-inch OD pipeline) and a 75-foot-wide construction ROW in wetlands. Transco also proposes to use Extra work spaces (EWSs) in some upland and wetland areas, due to a variety of Project and site- specific considerations.</p> <p>The proposed increase in the nominal construction ROW will not impact or prevent the implementation of other measures to provide for upland erosion control and protection of waterbodies and wetlands. The proposed construction ROW will allow Transco to implement the FERC construction measures of Transco's Plan and Transco's Procedures while addressing site conditions and meeting OSHA regulations (29 CFR Part 1926.650-.652, Subpart P).</p>

Table 1																									
Justifications for Transco's Proposed Modifications to the FERC Upland Erosion Control, Revegetation, and Maintenance Plan																									
Section	FERC Version ^a	Transco Version ^b	Transco Justification ^c																						
IV.F.1.b	<p>Install temporary slope breakers on all disturbed areas, as necessary to avoid excessive erosion. Temporary slope breakers must be installed on slopes greater than 5 percent where the base of the slope is less than 50 feet from waterbody, wetland, and road crossings at the following spacing (closer spacing shall be used if necessary):</p> <table border="0"> <tr> <td>Slope (%)</td> <td>Spacing (feet)</td> </tr> <tr> <td>5 - 15</td> <td>300</td> </tr> <tr> <td>>15 - 30</td> <td>200</td> </tr> <tr> <td>>30</td> <td>100</td> </tr> </table>	Slope (%)	Spacing (feet)	5 - 15	300	>15 - 30	200	>30	100	<p>Install temporary <i>diversion terraces</i> on all disturbed areas, as necessary to avoid excessive erosion. Temporary <i>diversion terraces</i> must be installed on slopes greater than 1 percent where the base of the slope is less than 50 feet from waterbody, wetland, and road crossings at the following spacing (closer spacing shall be used if necessary):</p> <table border="0"> <tr> <td>Slope (%)</td> <td>Spacing</td> </tr> <tr> <td>1</td> <td>400</td> </tr> <tr> <td>2-5</td> <td>250</td> </tr> <tr> <td>5-10</td> <td>125</td> </tr> <tr> <td>10-15</td> <td>80</td> </tr> <tr> <td>15-20</td> <td>60</td> </tr> <tr> <td>≥20</td> <td>50</td> </tr> </table>	Slope (%)	Spacing	1	400	2-5	250	5-10	125	10-15	80	15-20	60	≥20	50	<p>Changed to be compliant with Georgia state standards. The revised Transco version results in closer spacing of the diversion terraces.</p>
Slope (%)	Spacing (feet)																								
5 - 15	300																								
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1	400																								
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10-15	80																								
15-20	60																								
≥20	50																								
IV.F.4.a	<p>Spread mulch uniformly over the area to cover at least 75 percent of the ground surface at a rate of 2 tons/acre of straw or its equivalent, unless the local soil conservation authority, landowner, or land managing agency approves otherwise in writing.</p>	<p>Spread mulch uniformly over the area to cover at least 90 percent of the ground surface at a rate of 2 tons/acre of straw or its equivalent, unless the local soil conservation authority, landowner, or land managing agency approves otherwise in writing.</p>	<p>Changed to be compliant with Georgia state standards. The revised Transco version results in a greater mulch coverage.</p>																						
IV.F.4.c.(1)	<p>Final grading and installation of permanent erosion control measures will not be completed in an area within 20 days after the trench in that area is backfilled (10 days in residential areas), as required in section V.A.1;</p>	<p>Final grading and installation of permanent erosion control measures will not be completed in an area within 14 days after the trench in that area is backfilled (10 days in residential areas), as required in section V.A.1;</p>	<p>The Transco version replaces the FERC version with more conservative Georgia EPD requirements. Georgia EPD requires that disturbed areas are stabilized within 14 days of inactivity.</p>																						
IV.F.4.e	<p>If wood chips are used as mulch, do not use more than 1 ton/acre and add the equivalent of 11 lbs/acre available nitrogen (at least 50 percent of which is slow release).</p>	<p>If wood chips are used as mulch, do not use more than 1 ton/acre and add the equivalent of 11 lbs/acre available nitrogen (at least 50 percent of which is slow release). <i>Netting of the appropriate size shall be used to anchor wood waste. Openings of the netting shall not be larger than the average size of the wood waste chips.</i></p>	<p>Additional language to meet requirements per the GA EPD. The addition of netting improves the stability and performance of the wood chip mulch.</p>																						

Table 1			
Justifications for Transco's Proposed Modifications to the FERC Upland Erosion Control, Revegetation, and Maintenance Plan			
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IV.F.4.f	Ensure that mulch is adequately anchored to minimize loss due to wind and water.	Ensure that mulch is adequately anchored <i>immediately after application</i> to minimize loss due to wind and water. <i>Straw or hay mulch can be pressed into the soil with a disk harrow with the disk set straight or with a special packer disk. Disks may be smooth or serrated and should be 20 inches apart.</i>	The Transco version replaces the FERC version with more conservative Georgia EPD application and anchoring requirements.
V.A.1	Complete final grading, topsoil replacement, and installation of permanent erosion control structures within 20 days after backfilling the trench (10 days in residential areas). If seasonal or other weather conditions prevent compliance with these time frames, maintain temporary erosion controls (i.e., temporary slope breakers, sediment barriers, and mulch) until conditions allow completion of cleanup.	Complete final grading, topsoil replacement, and installation of permanent erosion control structures within 14 days after backfilling the trench (10 days in residential areas). If seasonal or other weather conditions prevent compliance with these time frames, maintain temporary erosion controls (i.e., temporary diversion terraces, sediment barriers, and mulch) until conditions allow completion of cleanup.	The Transco version replaces the FERC version with more conservative Georgia EPD requirements. Georgia EPD requires that disturbed areas are stabilized within 14 days of inactivity.
V.D.3.b.	Seed disturbed areas in accordance with written recommendations for seed mixes, rates, and dates obtained from the local soil conservation authority or the request of the landowner or land management agency.	Seed disturbed areas in accordance with written recommendations for seed mixes, rates, and dates obtained from the recommendations by the GSWCC included in the Manual for Erosion and Sediment Control in Georgia, Sixth Edition, 2014 .	The Transco version replaces the FERC version with more conservative Georgia EPD requirements. These guidelines were created by the Georgia Soil and Water Conservation Commission and can be enforced by the EPD. EPD has authority over the local issuing authority.
V.D.3.d	In the absence of written recommendations from the local soil conservation authorities, seed all disturbed soils within 6 working days of final grading, weather and soil conditions permitting, subject to the specifications in section V.D.3.a-c.	In the absence of written recommendations from the local soil conservation authorities, seed all disturbed soils within 6 working days of final grading, weather and soil conditions permitting, subject to the specifications in section V.D.3.a-c, <i>or variances from this timing would be requested by Transco to FERC.</i>	Provides clarification for potential variance requests to complete seeding operations.

Table 1			
Justifications for Transco's Proposed Modifications to the FERC Upland Erosion Control, Revegetation, and Maintenance Plan			
Section	FERC Version ^a	Transco Version ^b	Transco Justification ^c
VII.A.2.	Revegetation in non-agricultural areas shall be considered successful if upon visual survey the density and cover of non nuisance vegetation are similar in density and cover to adjacent undisturbed lands.	Revegetation in non-agricultural areas shall be considered successful if <i>100% of the soil surface is uniformly covered in permanent vegetation with a density of 70%, or greater.</i>	The Transco version replaces the FERC version with more specific Georgia EPD requirements. Additional requirements by the GA EPD in non-agricultural areas of the project quantifies the revegetation density.
VII.B.3.	(No existing text in FERC Version)	Water sampling and reporting will be submitted to the state agency when initiated at the beginning of the construction period until such time a notice of termination is submitted to the state.	Additional requirement by the GA EPD to minimize off-site sedimentation. The sampling process and procedures are required to be in accordance with the GAR10002 infrastructure permit section D.6. and section E
Entire Document	Slope Breaker	Diversion Terrace	Changed to be consistent with Georgia EPD terminology
Entire Document	Local soil conservation authority	Local Issuing Authority	Changed to be consistent with Georgia agency terminology
<p>a – May 2013 FERC Upland Erosion Control, Revegetation, and Maintenance Plan</p> <p>b – Changes indicated in <i>bold italic</i> text</p> <p>c - Justification stating rationale for each proposed modification; Modifications are required to provide equal or greater measures than those provided in the FERC Plan</p>			

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I. Applicability

As outlined below, Transcontinental Gas Pipe Line Company, LLC (Transco) is proposing modifications to the FERC Plan (May 2013 Version) for the Dalton Expansion Project. This section will apply to all non-wetland areas of the Project. Wetland and waterbody features are addressed in Transco's Wetland and Waterbody Construction and Mitigation Procedures (Transco's Procedures).

Deviations that involve measures different from those contained in this Plan will only be permitted as certificated by the Commission or by written approval of the Director of the Office of Energy Projects (OEP) or designee.

- A. The intent of this Plan is to assist project sponsors by identifying baseline mitigation measures for minimizing erosion and enhancing revegetation. Project sponsors shall specify in their applications for a new FERC authorization and in prior notice and advance notice filings, any individual measures in this Plan they consider unnecessary, technically infeasible, or unsuitable due to local conditions and fully describe any alternative measures they would use. Project sponsors shall also explain how those alternative measures would achieve a comparable level of mitigation.

Once a project is authorized, project sponsors can request further changes as variances to the measures in this Plan (or the applicant's approved plan). The Director of the Office of Energy Projects (Director) will consider approval of variances upon the project sponsor's written request, if the Director agrees that a variance:

1. provides equal or better environmental protection;
2. is necessary because a portion of this Plan is infeasible or unworkable based on project-specific conditions; or
3. is specifically required in writing by another federal, state, or Native American land management agency for the portion of the project on its land or under its jurisdiction.
4. ***Transco agrees to a FERC Third Party Compliance Monitoring Program for non-Federal and Federal land along the length of the Project.***

Sponsors of projects planned for construction under the automatic authorization provisions in the FERC's regulations must receive written approval for any variances in advance of construction.

Project-related impacts on wetland and waterbody systems are addressed in the staff's Wetland and Waterbody Construction and Mitigation Procedures (Procedures).

II. Supervision and Inspection

A. Environmental Inspection

1. At least one Environmental Inspector is required for each construction spread during construction and restoration (as defined by section V). The number and experience of Environmental Inspectors assigned to each construction spread shall be appropriate for the length of the

- construction spread and the number/significance of resources affected.
2. Environmental Inspectors shall have peer status with all other activity inspectors.
 3. Environmental Inspectors shall have the authority to stop activities that violate the environmental conditions of the FERC's Orders, stipulations of other environmental permits or approvals, or landowner easement agreements; and to order appropriate corrective action.

B. Responsibilities of Environmental Inspectors

At a minimum, the Environmental Inspector(s) shall be responsible for:

1. Inspecting construction activities for compliance with the requirements of this Plan, **Transco's** Procedures, the environmental conditions of the FERC's Orders, the mitigation measures proposed by the project sponsor (as approved and/or modified by the Order), other environmental permits and approvals, and environmental requirements in landowner easement agreements.
2. Identifying, documenting, and overseeing corrective actions, as necessary to bring an activity back into compliance;
3. Verifying that the limits of authorized construction work areas and locations of access roads are visibly marked before clearing, and maintained throughout construction;
4. Verifying the location of signs and highly visible flagging marking the boundaries of sensitive resource areas, waterbodies, wetlands, or areas with special requirements along the construction work area;
5. Identifying erosion/sediment control and soil stabilization needs in all areas;
6. Ensuring that the design of **diversion terraces** will not cause erosion or direct water into sensitive environmental resource areas, including cultural resource sites, wetlands, waterbodies, and sensitive species habitats;
7. Verifying that dewatering activities are properly monitored and do not result in the deposition of sand, silt, and/or sediment into sensitive environmental resource areas, including wetlands, waterbodies, cultural resource sites, and sensitive species habitats; stopping dewatering activities if such deposition is occurring and ensuring the design of the discharge is changed to prevent reoccurrence; and verifying that dewatering structures are removed after completion of dewatering activities;
8. Ensuring that subsoil and topsoil are tested in agricultural and residential areas to measure compaction and determine the need for corrective action;
9. Advising the Chief Construction Inspector when environmental conditions (such as wet weather or frozen soils) make it advisable to restrict or delay construction activities to avoid topsoil mixing or excessive compaction;

10. Ensuring restoration of contours and topsoil;
11. Verifying that the soils imported for agricultural or residential use are certified as free of noxious weeds and soil pests, unless otherwise approved by the landowner;
12. Ensuring that erosion control devices are properly installed to prevent sediment flow into sensitive environmental resource areas (e.g., wetlands, waterbodies, cultural resource sites, and sensitive species habitats) and onto roads, and determining the need for additional erosion control devices;
13. Inspecting and ensuring the maintenance of temporary erosion control measures at least:
 - a. on a daily basis in areas of active construction or equipment operation;
 - b. on a weekly basis in areas with no construction or equipment operation; and
 - c. within 24 hours of each 0.5 inch of rainfall;
14. Ensuring the repair of all ineffective temporary erosion control measures within 24 hours of identification, or as soon as conditions allow if compliance with this time frame would result in greater environmental impacts;
15. Keeping records of compliance with the environmental conditions of the FERC's Orders, and the mitigation measures proposed by the project sponsor in the application submitted to the FERC, and other federal or state environmental permits during active construction and restoration;
16. Identifying areas that should be given special attention to ensure stabilization and restoration after the construction phase; and
17. Verifying that locations for any disposal of excess construction materials for beneficial reuse comply with section III.E.

III. Preconstruction Planning

The project sponsor shall do the following before construction:

A. Construction Work Areas

1. Identify all construction work areas (e.g., construction right-of-way, extra work space areas, pipe storage and contractor yards, borrow and disposal areas, access roads) that would be needed for safe construction. **Transco will ensure** that appropriate cultural resources and biological surveys are conducted, as determined necessary by the appropriate federal and state agencies **and that the extent of those surveys is sufficient to accommodate possible future need for activities outside certificated work areas (i.e., buffer areas).**
2. Project sponsors are encouraged to consider expanding any required cultural resources and endangered species surveys in anticipation of

the need for activities outside of authorized work areas.

3. Plan construction sequencing to limit the amount and duration of open trench sections, as necessary, to prevent excessive erosion or sediment flow into sensitive environmental resource areas.

B. Drain Tiles and Irrigation Systems

1. Attempt to locate existing drain tiles and irrigation systems.
2. Contact landowners and local *issuing* authorities to determine the locations of future drain tiles that are likely to be installed within 3 years of the authorized construction.
3. Develop procedures for constructing through drain-tiled areas, maintaining irrigation systems during construction, and repairing drain tiles and irrigation systems after construction.
4. Engage qualified drain tile specialists, as needed to conduct or monitor repairs to drain tile systems affected by construction. Use drain tile specialists from the project area, if available.

C. Grazing Deferment

Develop grazing deferment plans with willing landowners, grazing permittees, and land management agencies to minimize grazing disturbance of revegetation efforts.

D. Road Crossings and Access Points

Plan for safe and accessible conditions at all roadway crossings and access points during construction and restoration.

E. Disposal Planning

Determine methods and locations for the regular collection, containment, and disposal of excess construction materials and debris (e.g., timber, slash, mats, garbage, drill cuttings and fluids, excess rock) throughout the construction process. Disposal of materials for beneficial reuse must not result in adverse environmental impact and is subject to compliance with all applicable survey, landowner or land management agency approval, and permit requirements.

F. Agency Coordination

The project sponsor must coordinate with the appropriate local, state, and federal agencies as outlined in this Plan and/or required by the FERC's Orders.

1. Obtain written recommendations from the local soil conservation authorities or land management agencies regarding permanent erosion control and revegetation specifications.
2. Develop specific procedures in coordination with the appropriate agencies to prevent the introduction or spread of invasive species, noxious weeds, and soil pests resulting from construction and restoration activities.
3. Develop specific procedures in coordination with the appropriate agencies and landowners, as necessary, to allow for livestock and wildlife movement and protection during construction.

4. Develop specific blasting procedures in coordination with the appropriate agencies that address pre- and post-blast inspections; advanced public notification; and mitigation measures for building foundations, groundwater wells, and springs. Use appropriate methods (e.g., blasting mats) to prevent damage to nearby structures and to prevent debris from entering sensitive environmental resource areas.

G. Spill Prevention and Response Procedures

The project sponsor shall develop project-specific Spill Prevention and Response Procedures, as specified in section IV of the staff's Procedures. A copy must be filed with the Secretary of the FERC (Secretary) prior to construction and made available in the field on each construction spread. The filing requirement does not apply to projects constructed under the automatic authorization provisions in the FERC's regulations.

H. Residential Construction

For all properties with residences located within 50 feet of construction work areas, project sponsors shall: avoid removal of mature trees and landscaping within the construction work area unless necessary for safe operation of construction equipment, or as specified in landowner agreements; fence the edge of the construction work area for a distance of 100 feet on either side of the residence; and restore all lawn areas and landscaping immediately following clean up operations, or as specified in landowner agreements. If seasonal or other weather conditions prevent compliance with these time frames, maintain and monitor temporary erosion controls (sediment barriers and mulch) until conditions allow completion of restoration.

I. Winter Construction Plan

If construction is planned to occur during winter weather conditions, project sponsors shall develop and file a project-specific winter construction plan with the FERC application. This filing requirement does not apply to projects constructed under the automatic authorization provisions of the FERC's regulations.

The plan shall address:

1. winter construction procedures (e.g., snow handling and removal, access road construction and maintenance, soil handling under saturated or frozen conditions, topsoil stripping);
2. stabilization and monitoring procedures if ground conditions will delay restoration until the following spring (e.g., mulching and erosion controls, inspection and reporting, stormwater control during spring thaw conditions); and
3. final restoration procedures (e.g., subsidence and compaction repair, topsoil replacement, seeding).

IV. Installation

A. Approved Areas of Disturbance

1. Project-related ground disturbance shall be limited to the construction

right-of-way, extra work space areas, pipe storage yards, borrow and disposal areas, access roads, and other areas approved in the FERC's Orders. Any project-related ground disturbing activities outside these Certified areas will require prior Director approval. This requirement does not apply to activities needed to comply with *this* Plan and *Transco's* Procedures (i.e., *diversion terraces*, energy-dissipating devices, dewatering structures, drain tile system repairs) or minor field realignments and workspace shifts per landowner needs and requirements that do not affect other landowners or sensitive environmental resource areas. All construction or restoration activities outside of authorized areas are subject to all applicable survey and permit requirements, and landowner easement agreements.

2. The construction right-of-way width for a project shall not exceed *that described* in the FERC application unless otherwise modified by a FERC Order. However, in limited, non-wetland areas, this construction right-of-way width may be expanded by up to 25 feet without Director approval to accommodate full construction right-of-way topsoil segregation and to ensure safe construction where topographic conditions (e.g., side-slopes) or soil limitations require it. Twenty-five feet of extra construction right-of-way width may also be used in limited, non-wetland or non-forested areas for truck turn-arounds where no reasonable alternative access exists.

Project use of these additional limited areas is subject to landowner or land management agency approval and compliance with all applicable survey and permit requirements. When additional areas are used, each one shall be identified and the need explained in the weekly or biweekly construction reports to the FERC, if required. The following material shall be included in the reports:

- a. the location of each additional area by station number and reference to previously filed alignment sheets, or updated alignment sheets showing the additional areas;
- b. identification of the filing at FERC containing evidence that the additional areas were previously surveyed; and
- c. a statement that landowner approval has been obtained and is available in project files.

Prior written approval of the Director is required when the authorized construction right-of-way width would be expanded by more than 25 feet.

B. Topsoil Segregation

1. Unless the landowner or land management agency specifically approves otherwise, prevent the mixing of topsoil with subsoil by stripping topsoil from either the full work area or from the trench and subsoil storage area (ditch plus spoil side method) in:
 - a. cultivated or rotated croplands, and managed pastures;
 - b. residential areas;
 - c. hayfields; and
 - d. other areas at the landowner's or land managing agency's

request.

2. In residential areas, importation of topsoil is an acceptable alternative to topsoil segregation.
3. Where topsoil segregation is required, the project sponsor must:
 - a. segregate at least 12 inches of topsoil in deep soils (more than 12 inches of topsoil); and
 - b. make every effort to segregate the entire topsoil layer in soils with less than 12 inches of topsoil.
4. Maintain separation of salvaged topsoil and subsoil throughout all construction activities.
5. Segregated topsoil may not be used for padding the pipe, constructing temporary ***diversion terraces*** or trench plugs, improving or maintaining roads, or as a fill material.
6. Stabilize topsoil piles and minimize loss due to wind and water erosion with use of sediment barriers, mulch, temporary seeding, tackifiers, or functional equivalents, where necessary.

C. Drain Tiles

1. Mark locations of drain tiles damaged during construction.
2. Probe all drainage tile systems within the area of disturbance to check for damage.
3. Repair damaged drain tiles to their original or better condition. Do not use filter-covered drain tiles unless the local soil conservation authorities and the landowner agree. Use qualified specialists for testing and repairs.
4. For new pipelines in areas where drain tiles exist or are planned, ensure that the depth of cover over the pipeline is sufficient to avoid interference with drain tile systems. For adjacent pipeline loops in agricultural areas, install the new pipeline with at least the same depth of cover as the existing pipeline(s).

D. Irrigation

Maintain water flow in crop irrigation systems, unless shutoff is coordinated with affected parties.

E. Road Crossings and Access Points

1. Maintain safe and accessible conditions at all road crossings and access points during construction.
2. If crushed stone access pads are used in residential or agricultural areas, place the stone on synthetic fabric to facilitate removal.
3. Minimize the use of tracked equipment on public roadways. Remove any soil or gravel spilled or tracked onto roadways daily or more frequent as necessary to maintain safe road conditions. Repair any damages to roadway surfaces, shoulders, and bar ditches.

F. Temporary Erosion Control

Install temporary erosion controls immediately after initial disturbance of the

soil. Temporary erosion controls must be properly maintained throughout construction (on a daily basis) and reinstalled as necessary (such as after backfilling of the trench) until replaced by permanent erosion controls or restoration is complete.

1. Temporary ***Diversions terraces***

- a. Temporary ***diversion terraces*** are intended to reduce runoff velocity and divert water off the construction right-of-way. Temporary ***diversion terraces*** may be constructed of materials such as soil, silt fence, staked hay or straw bales, or sand bags.
- b. Install temporary ***diversion terraces*** on all disturbed areas, as necessary to avoid excessive erosion. Temporary ***diversion terraces*** must be installed on slopes greater than **1** percent where the base of the slope is less than 50 feet from waterbody, wetland, and road crossings at the following spacing (closer spacing shall be used if necessary):

<i>Slope (%)</i>	<i>Spacing</i>
<i>1</i>	<i>400</i>
<i>2-5</i>	<i>250</i>
<i>5-10</i>	<i>125</i>
<i>10-15</i>	<i>80</i>
<i>15-20</i>	<i>60</i>
<i>≥20</i>	<i>50</i>

- c. Direct the outfall of each temporary ***diversion terrace*** to a stable, well vegetated area or construct an energy-dissipating device at the end of the ***diversion terrace*** and off the construction right-of-way.
- d. Position the outfall of each temporary ***diversion terrace*** to prevent sediment discharge into wetlands, waterbodies, or other sensitive environmental resource areas.

2. Temporary Trench Plugs

Temporary trench plugs are intended to segment a continuous open trench prior to backfill.

- a. Temporary trench plugs may consist of unexcavated portions of the trench, compacted subsoil, sandbags, or some functional equivalent.
- b. Position temporary trench plugs, as necessary, to reduce trenchline erosion and minimize the volume and velocity of trench water flow at the base of slopes.

3. Sediment Barriers

Sediment barriers are intended to stop the flow of sediments and to prevent the deposition of sediments beyond approved workspaces or into sensitive resources.

- a. Sediment barriers may be constructed of materials such as silt fence, staked hay or straw bales, compacted earth (e.g., driveable berms across travelways), sand bags, or other

appropriate materials.

- b. At a minimum, install and maintain temporary sediment barriers across the entire construction right-of-way at the base of slopes greater than 5 percent where the base of the slope is less than 50 feet from a waterbody, wetland, or road crossing until revegetation is successful as defined in this Plan. Leave adequate room between the base of the slope and the sediment barrier to accommodate ponding of water and sediment deposition.
- c. Where wetlands or waterbodies are adjacent to and downslope of construction work areas, install sediment barriers along the edge of these areas, as necessary to prevent sediment flow into the wetland or waterbody.

4. Mulch

- a. Apply mulch on all slopes (except in cultivated cropland) concurrent with or immediately after seeding, where necessary to stabilize the soil surface and to reduce wind and water erosion. Spread mulch uniformly over the area to cover at least **90** percent of the ground surface at a rate of 2 tons/acre of straw or its equivalent, unless the local soil conservation authority, landowner, or land managing agency approves otherwise in writing.
- b. Mulch can consist of weed-free straw or hay, wood fiber hydromulch, erosion control fabric, or some functional equivalent.
- c. Mulch all disturbed upland areas (except cultivated cropland) before seeding if:
 - (1) final grading and installation of permanent erosion control measures will not be completed in an area within **14** days after the trench in that area is backfilled (10 days in residential areas), as required in section V.A.1; or
 - (2) construction or restoration activity is interrupted for extended periods, such as when seeding cannot be completed due to seeding period restrictions.
- d. If mulching before seeding, increase mulch application on all slopes within 100 feet of waterbodies and wetlands to a rate of 3 tons/acre of straw or equivalent.
- e. If wood chips are used as mulch, do not use more than 1 ton/acre and add the equivalent of 11 lbs/acre available nitrogen (at least 50 percent of which is slow release). **Netting of the appropriate size shall be used to anchor wood waste. Openings of the netting shall not be larger than the average size of the wood waste chips.**
- f. Ensure that mulch is adequately anchored **immediately after application** to minimize loss due to wind and water. **Straw or hay mulch can be pressed into the soil with a**

disk harrow with the disk set straight or with a special packer disk. Disks may be smooth or serrated and should be 20 inches apart.

- g. When anchoring with liquid mulch binders, use rates recommended by the manufacturer. Do not use liquid mulch binders within 100 feet of wetlands or waterbodies, except where the product is certified environmentally non-toxic by the appropriate state or federal agency or independent standards-setting organization.
- h. Do not use synthetic monofilament mesh/netted erosion control materials in areas designated as sensitive wildlife habitat, unless the product is specifically designed to minimize harm to wildlife. Anchor erosion control fabric with staples or other appropriate devices.

V. Restoration

A. Cleanup

1. Commence cleanup operations immediately following backfill operations.

Complete final grading, topsoil replacement, and installation of permanent erosion control structures within **14** days after backfilling the trench (10 days in residential areas). If seasonal or other weather conditions prevent compliance with these time frames, maintain temporary erosion controls (i.e., temporary ***diversion terraces***, sediment barriers, and mulch) until conditions allow completion of cleanup.

If construction or restoration unexpectedly continues into the winter season when conditions could delay successful decompaction, topsoil replacement, or seeding until the following spring, file with the Secretary for the review and written approval of the Director, a winter construction plan (as specified in section III.I). This filing requirement does not apply to projects constructed under the automatic authorization provisions of the FERC's regulations.

2. A travel lane may be left open temporarily to allow access by construction traffic if the temporary erosion control structures are installed as specified in section IV.F. and inspected and maintained as specified in sections II.B.12 through 14. When access is no longer required the travel lane must be removed and the right-of-way restored.
3. Rock excavated from the trench may be used to backfill the trench only to the top of the existing bedrock profile. Rock that is not returned to the trench shall be considered construction debris, unless approved for use as mulch or for some other use on the construction work areas by the landowner or land managing agency.
4. Remove excess rock from at least the top 12 inches of soil in all cultivated or rotated cropland, managed pastures, hayfields, and residential areas, as well as other areas at the landowner's request.

The size, density, and distribution of rock on the construction work area shall be similar to adjacent areas not disturbed by construction. The landowner or land management agency may approve other provisions in writing.

5. Grade the construction right-of-way to restore pre-construction contours and leave the soil in the proper condition for planting.
Restore existing access road to predevelopment conditions.
6. Remove construction debris from all construction work areas unless the landowner or land managing agency approves leaving materials onsite for beneficial reuse, stabilization, or habitat restoration.
7. Remove temporary sediment barriers when replaced by permanent erosion control measures or when revegetation is successful.

B. Permanent Erosion Control Devices

1. Trench Breakers
 - a. Trench breakers are intended to slow the flow of subsurface water along the trench. Trench breakers may be constructed of materials such as sand bags or polyurethane foam. Do not use topsoil in trench breakers.
 - b. An engineer or similarly qualified professional shall determine the need for and spacing of trench breakers. Otherwise, trench breakers shall be installed at the same spacing as and upslope of permanent **diversion terraces**.
 - c. In agricultural fields and residential areas where **diversion terraces** are not typically required, install trench breakers at the same spacing as if permanent **diversion terraces** were required.
 - d. At a minimum, install a trench breaker at the base of slopes greater than 5 percent where the base of the slope is less than 50 feet from a waterbody or wetland and where needed to avoid draining a waterbody or wetland. Install trench breakers at wetland boundaries, as specified in the Procedures. Do not install trench breakers within a wetland.
2. Permanent **Diversion terraces**
 - a. Permanent **diversion terraces** are intended to reduce runoff velocity, divert water off the construction right-of-way, and prevent sediment deposition into sensitive resources. Permanent **diversion terraces** may be constructed of materials such as soil, stone, or some functional equivalent.
 - b. Construct and maintain permanent **diversion terraces** in all areas, except cultivated areas and lawns, unless requested by the landowner, using spacing recommendations obtained from the **Manual for Erosion and Sediment Control in Georgia, Sixth Edition, 2014**.

In the absence of written recommendations, use the following spacing unless closer spacing is necessary to avoid excessive

erosion on the construction right-of-way:

<u>Slope (%)</u>	<u>Spacing (feet)</u>
1	400
2	250
5	125
10	80
15	60
20	50

- c. Construct ***diversion terraces*** to divert surface flow to a stable area without causing water to pool or erode behind the breaker. In the absence of a stable area, construct appropriate energy-dissipating devices at the end of the breaker.
- d. ***Diversion terraces*** may extend slightly (about 4 feet) beyond the edge of the construction right-of-way to effectively drain water off the disturbed area. Where ***diversion terraces*** extend beyond the edge of the construction right-of-way, they are subject to compliance with all applicable survey requirements.

C. Soil Compaction Mitigation

1. Test topsoil and subsoil for compaction at regular intervals in agricultural and residential areas disturbed by construction activities. Conduct tests on the same soil type under similar moisture conditions in undisturbed areas to approximate preconstruction conditions. Use penetrometers or other appropriate devices to conduct tests.
2. Plow severely compacted agricultural areas with a paraplow or other deep tillage implement. In areas where topsoil has been segregated, plow the subsoil before replacing the segregated topsoil.

If subsequent construction and cleanup activities result in further compaction, conduct additional tilling.
3. Perform appropriate soil compaction mitigation in severely compacted residential areas.

D. Revegetation

1. General
 - a. The project sponsor is responsible for ensuring successful revegetation of soils disturbed by project-related activities, except as noted in section V.D.1.b.
 - b. Restore all turf, ornamental shrubs, and specialized landscaping in accordance with the landowner's request, or compensate the landowner. Restoration work must be performed by personnel familiar with local horticultural and turf establishment practices.
2. Soil Additives

Fertilize and add soil pH modifiers in accordance with written recommendations obtained from the local soil conservation authority, land management agencies, or landowner. Incorporate recommended

soil pH modifier and fertilizer into the top 2 inches of soil as soon as practicable after application.

3. Seeding Requirements

- a. Prepare a seedbed in disturbed areas to a depth of 3 to 4 inches using appropriate equipment to provide a firm seedbed. When hydroseeding, scarify the seedbed to facilitate lodging and germination of seed.
- b. Seed disturbed areas in accordance with written recommendations for seed mixes, rates, and dates obtained from ***the recommendations by the GSWCC included in the Manual for Erosion and Sediment Control in Georgia, Sixth Edition, 2014***. Seeding is not required in cultivated croplands unless requested by the landowner.
- c. Perform seeding of permanent vegetation within the recommended seeding dates. If seeding cannot be done within those dates, use appropriate temporary erosion control measures discussed in section IV.F and perform seeding of permanent vegetation at the beginning of the next recommended seeding season. Dormant seeding or temporary seeding of annual species may also be used, if necessary, to establish cover, as approved by the Environmental Inspector. Lawns may be seeded on a schedule established with the landowner.
- d. In the absence of written recommendations from the local ***issuing*** authorities, seed all disturbed soils within 6 working days of final grading, weather and soil conditions permitting, subject to the specifications in section V.D.3.a through V.D.3.c, ***or variances from this timing would be requested by Transco to FERC***.
- e. Base seeding rates on Pure Live Seed. Use seed within 12 months of seed testing.
- f. Treat legume seed with an inoculant specific to the species using the manufacturer's recommended rate of inoculant appropriate for the seeding method (broadcast, drill, or hydro).
- g. In the absence of written recommendations from the local ***issuing*** authorities, landowner, or land managing agency to the contrary, a seed drill equipped with a cultipacker is preferred for seed application.

Broadcast or hydroseeding can be used in lieu of drilling at double the recommended seeding rates. Where seed is broadcast, firm the seedbed with a cultipacker or roller after seeding. In rocky soils or where site conditions may limit the effectiveness of this equipment, other alternatives may be appropriate (e.g., use of a chain drag) to lightly cover seed after application, as approved by the Environmental Inspector.

VI. Off-Road Vehicle Control

To each owner or manager of forested lands, offer to install and maintain measures to control unauthorized vehicle access to the right-of-way. These measures may include:

- A. signs;
- B. fences with locking gates;
- C. slash and timber barriers, pipe barriers, or a line of boulders across the right-of-way; and
- D. conifers or other appropriate trees or shrubs across the right-of-way.

VII. Post-Construction Activities and Reporting

A. Monitoring and Maintenance

1. Conduct follow-up inspections of all disturbed areas, as necessary, to determine the success of revegetation and address landowner concerns. At a minimum, conduct inspections after the first and second growing seasons.
2. Revegetation in non-agricultural areas shall be considered successful if ***the soil surface is uniformly covered in permanent vegetation with a density of 70%, or greater.*** . In agricultural areas, revegetation shall be considered successful when upon visual survey, crop growth and vigor are similar to adjacent undisturbed portions of the same field, unless the easement agreement specifies otherwise.
Continue revegetation efforts until revegetation is successful.
3. Monitor and correct problems with drainage and irrigation systems resulting from pipeline construction in agricultural areas until restoration is successful.
4. Restoration shall be considered successful if the right-of-way surface condition is similar to adjacent undisturbed lands, construction debris is removed (unless otherwise approved by the landowner or land managing agency per section V.A.6), revegetation is successful, and proper drainage has been restored.
5. Routine vegetation mowing or clearing over the full width of the permanent right-of-way in uplands shall not be done more frequently than every 3 years. However, to facilitate periodic corrosion/leak surveys, a corridor not exceeding 10 feet in width centered on the pipeline may be cleared at a frequency necessary to maintain the 10-foot corridor in an herbaceous state. In no case shall routine vegetation mowing or clearing occur during the migratory bird nesting season between April 15 and August 1 of any year unless specifically approved in writing by the responsible land management agency or the U.S. Fish and Wildlife Service.
6. Efforts to control unauthorized off-road vehicle use, in cooperation with the landowner, shall continue throughout the life of the project. Maintain signs, gates, and permanent access roads as necessary.

B. Reporting

1. The project sponsor shall maintain records that identify by milepost:
 - a. method of application, application rate, and type of fertilizer, pH modifying agent, seed, and mulch used;
 - b. acreage treated;
 - c. dates of backfilling and seeding;
 - d. names of landowners requesting special seeding treatment and a description of the follow-up actions;
 - e. the location of any subsurface drainage repairs or improvements made during restoration; and
 - f. any problem areas and how they were addressed.
2. The project sponsor shall file with the Secretary quarterly activity reports documenting the results of follow-up inspections required by section VII.A.1; any problem areas, including those identified by the landowner; and corrective actions taken for at least 2 years following construction.

The requirement to file quarterly activity reports with the Secretary does not apply to projects constructed under the automatic authorization, prior notice, or advanced notice provisions in the FERC's regulations.
3. ***Water sampling and reporting will be submitted to the state agency when initiated at the beginning of the construction period until such time a notice of termination is submitted to the state.***

Document Content(s)

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