20180613-5062 FERC PDF (Unofficial) 6/13/2018 12:15:55 PM

Florida Gas Transmission Company

An Energy Transfer/Kinder Morgan Affiliate

Via eFiling

June 13, 2018

Ms. Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, N. E., Room 18A
Washington, DC 20426

Re: Florida Gas Transmission Company, LLC
Turnpike-Palmetto Road Relocation Project
Docket No. PF18-5-000

Pre-Filing Supplemental Information (18 CFR §157.21(f)(5)) – Draft Resource Report Nos. 1 and 10

Dear Ms. Bose:

On May 14, 2018, Florida Gas Transmission Company, LLC ("FGT") received authorization from the Federal Energy Regulatory Commission ("Commission") for use of the Pre-Filing Process for the Turnpike-Palmetto Road Relocation Project. Pursuant to Section 157.21 and to assist the Commission Environmental Staff in its review of the proposed project, enclosed herewith for filing with the Commission is a DRAFT of Resource Report 1, in accordance with §380.12(c), and a DRAFT of Resource Report 10, with a summary of the alternatives considered or under consideration in the above referenced docket.

FGT respectfully requests that the information identified as "**PUBLIC**" be placed on the FERC eLibrary website as "Public Information".

In accordance with the Commission's eFiling requirements, FGT is providing a copy of this filing directly to the FERC Environmental Project Manager.

Any questions concerning this filing may be addressed to the undersigned at (713) 989-2605.

Respectfully submitted,

FLORIDA GAS TRANSMISSION COMPANY, LLC

/s/ Blair Lichtenwalter

Blair Lichtenwalter,
Senior Director, Certificates

cc: Jennifer Zielinski – FERC OEP
Paul Friedman – FERC OEP
Anthony Rana – FERC OEP
Kylee Augustino – FERC OEP

20180613-5062 FERC PDF (Unofficial) 6/13/2018 12:15:55 PM

PUBLIC

Florida Gas Transmission Company

An Energy Transfer/Kinder Morgan Affiliate

TURNPIKE-PALMETTO ROAD RELOCATION PROJECT
DOCKET NO. PF18-5-000

PRE-FILING SUPPLEMENTAL INFORMATION

18 CFR §157.21(f)(5)

DRAFT RESOURCE REPORT NO. 1

20180613-5062 FERC PDF (Unofficial) 6/13/2018 12:15:55 PM

FLORIDA GAS TRANSMISSION COMPANY, LLC

Turnpike-Palmetto Road Relocation Project

DRAFT

RESOURCE REPORT NO. 1

General Project Description

June 7, 2018

Florida Gas Transmission Company

An Energy Transfer/Kinder Morgan Affiliate

20180613-5062 FERC PDF (Unofficial) 6/13/2018 12:15:55 PM

SUMMARY OF FILING INFORMATION	
INFORMATION	SECTION REFERENCE
Full Filing Requirements	
1. Describe and provide location maps of all jurisdictional facilities, including all aboveground facilities associated with the project (such as: meter stations, pig launchers/receivers, valves), to be constructed, modified, abandoned, replaced, or removed, including related construction and operational support activities and areas such as maintenance bases, staging areas, communications towers, power lines, and new access roads (roads to be built or modified). As relevant, the report must describe the length and diameter of the pipeline, the types of aboveground facilities that would be installed, and associated land requirements. It must also identify other companies that must construct jurisdictional facilities related to the project, where the facilities would be located, and where they are in the Commission's approval process.	Section 1.0 Appendix 1-A Appendix 1-B Appendix 1-C
2. Identify and describe all non-jurisdictional facilities, including auxiliary facilities, that will be built in association with the project, including facilities to be built by other companies. (i) Provide the following information: • (A) A brief description of each facility, including as appropriate: Ownership, land requirements, gas consumption, megawatt size, construction status, and an update of the latest status of federal, state, and local permits/approvals; • (B) The length and diameter or any interconnecting pipeline; • (C) Current 1:24,000/1:25,000 scale topographic maps showing the location of the facilities; • (D) Correspondence with the appropriate State Historic Preservation Office (SHPO) or duly authorized Tribal Historic Preservation Officer (THPO) for tribal lands regarding whether properties eligible for listing on the National Register of Historic Places (NRHP) would be affected; • (E) Correspondence with the U.S. Fish and Wildlife Service (and National Marine Fisheries Service, if appropriate) regarding potential impacts of the proposed facility on federally listed threatened and endangered species; and • (F) For facilities within a designated coastal zone management area, a consistency determination or evidence that the owner has requested a consistency determination from the state's coastal zone management program. (ii) Address each of the following factors and indicate which ones, if any, appear to indicate the need for the Commission to do an environmental review of project-related non-jurisdictional facilities. • (A) Whether or not the regulated activity comprises "merely a link" in a corridor type project (e.g., a transportation or utility transmission project). • (B) Whether there are aspects of the non-jurisdictional facility in the immediate vicinity of the regulated activity which uniquely determine the location and configuration of the regulated activity.	Not Applicable Section 1.8

20180613-5062 FERC PDF (Unofficial) 6/13/2018 12:15:55 PM

SUMMARY OF FILING INFORMATION	
INFORMATION	SECTION REFERENCE
• (C) The extent to which the entire project will be within the Commission's jurisdiction. • (D) The extent of cumulative federal control and responsibility.	
3. Provide the following maps and photos: • (i) Current, original United States Geological Survey (USGS) 7.5-minute series topographic maps or maps of equivalent detail, covering at least a 0.5mile-wide corridor centered on the pipeline, with integer mileposts identified, showing the location of rights-of-way, new access roads, other linear construction areas, compressor stations, and pipe storage areas. • (ii) Original aerial images or photographs or photo-based alignment sheets based on these sources not more than 1 year old (unless older ones accurately depict current land use and development) and with a scale of 1:6,000 or larger, showing the proposed pipeline route and location of major aboveground facilities, covering at least 0.5-mile wide corridor, and including mileposts. Older images/photographs/alignment sheets should be modified to show any residences not depicted in the original. Alternative formats (e.g., blue-line prints of acceptable resolution) need prior approval by the environmental staff of the Office of Energy Projects. • (iii) In addition to the copy required under §157.6(a)(2) of this chapter, applicant should send two additional copies of topographic maps and aerial images/photographs directly to the environmental staff of the Office of Energy Projects.	Appendix 1-A Appendix 1-B
4. When new or additional compression is proposed, include large scale (1:3,600 or greater) plot plans or each compressor station. The plot plan should reference a - readily identifiable point(s) on the USGS maps required in paragraph (c)(3) of this section. The maps and plot plans must identify the location of the nearest noise-sensitive areas (schools, hospitals, or residences) within 1 mile of the compressor station, existing and proposed compressor and auxiliary buildings, access roads, and the limits of areas that would be permanently disturbed.	Not Applicable No new or additional compression proposed.
5. (i) Identify facilities to be abandoned, and state how they would be abandoned, how the site would be restored, who would own the site or right-of-way after abandonment, and who would be responsible for any facilities abandoned in place. • (ii) When the right-of-way or the easement would be abandoned, identify whether landowners were given the opportunity to request that the facilities on their property, including foundations and below ground components, be removed. Identify any landowners whose preferences the company does not intent to honor, and the reasons therefore.	Section 1.1
6. Describe and identify by milepost, proposed construction and restoration methods to be used in areas of rugged topography, residential areas, active croplands, sites	Section 1.3

20180613-5062 FERC PDF (Unofficial) 6/13/2018 12:15:55 PM

SUMMARY OF FILING INFORMATION		
	INFORMATION	SECTION REFERENCE
	where the pipeline would be located parallel to and under roads, and sites where explosives are likely to be used.	
7.	Unless provided in response to Resource Report 5, describe estimated workforce requirements, including the number of pipeline construction spreads, average workforce requirements for each construction spread and meter or compression station, estimated duration of construction from initial clearing to final restoration, and number of personnel to be hired to operate the proposed project.	Section 1.3
8.	Describe reasonably foreseeable plans for future expansion of facilities, including additional land requirements and the compatibility of those plans with the current proposal.	Section 1.5
9.	Describe all authorizations required to complete the proposed action and the status of applications for such authorizations. Identify environmental mitigation requirements specified in any permit or proposed in any permit application to the extent not specified elsewhere in this section.	Section 1.6 Table 1.6-1
10.	Provide the names and mailing addresses of all affected landowners specified in §157.6(d) and certify that all affected landowners will be notified as required in §157.6(d).	Section 1.7 Appendix 1-D

20180613-5062 FERC PDF (Unofficial) 6/13/2018 12:15:55 PM

RESOURCE REPORT NO. 1
GENERAL PROJECT DESCRIPTION

TABLE OF CONTENTS

LIST OF TABLES

20180613-5062 FERC PDF (Unofficial) 6/13/2018 12:15:55 PM

LIST OF ENVIRONMENTAL REPORT APPENDICES

1-A Project Overview Maps and Drawings

1-B Photo-Based Alignment Sheets

1-C Typical and Site-Specific Drawings

1-D Landowner List (Privileged – Do Not Release)

1-E FGT Construction and Mitigation Plans

20180613-5062 FERC PDF (Unofficial) 6/13/2018 12:15:55 PM

ABBREVIATIONS AND ACRONYMS

Ac	Acres
AR	Access road
ATWS	Additional Temporary Workspace
BMPs	Best Management Practices
BR	Broward County, FL
CFR	Code of Federal Regulations
CWA	Clean Water Act
DHR	Division of Historical Resources
DOT	Department of Transportation
EI	Environmental Inspector
EPA	United States Environmental Protection Agency
FDEP	Florida Department of Environmental Protection
FDHR	Florida Division of Historical Resources
FDOT	Florida Department of Transportation
FERC	Federal Energy Regulatory Commission
FGT	Florida Gas Transmission Company, LLC
Ft	Foot or Feet
FTE	Florida Turnpike Enterprise
GIS	Geographic Information Systems
HDD	Horizontal Directional Drill
in	Inch or Inches
LDAR	Leak Detection and Repair Program
M-D	Miami-Dade County, FL
mi	Mile or Miles
MP	Milepost
MSE	Mechanically Stabilized Earth
NPDES	National Pollutant Discharge Elimination System
NWI	National Wetlands Inventory
PEM	Palustrine Emergent
PFO	Palustrine Forested
Plan	FERC Upland Erosion Control Revegetation and Maintenance Plan
Procedures	Wetland and Waterbody Construction and Mitigation Procedures
Project	FGT Turnpike-Palmetto Road Relocation Project
PSS	Palustrine Scrub-Shrub
ROW	Right-of-way
RR	Resource Report
SFWMD	South Florida Water Management District
SHPO	State Historical Preservation Office
SPAR	Spill Prevention and Response Plan
SR	State Road
TWS	Temporary Workspace
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USDOT	United States Department of Transportation
USFWS	United States Fish and Wildlife Service
WL	Wetland

20180613-5062 FERC PDF (Unofficial) 6/13/2018 12:15:55 PM

1.0 General Project Description

Florida Gas Transmission Company, LLC (FGT) is seeking a Certificate of Public Convenience and Necessity (Certificate) from the Federal Energy Regulatory Commission (FERC) pursuant to Sections 7(b) and 7(c) of the Natural Gas Act requesting authorization to relocate, construct, own, and operate replacement facilities, and abandon existing facilities, on FGT's existing pipeline system. The project is designated as the Turnpike-Palmetto Road Relocation Project (Project) and is located in Broward and Miami-Dade counties, Florida.

Florida Department of Transportation's (FDOT) District 6 and Florida Turnpike Enterprise (FTE) are widening sections of the Palmetto Expressway (SR826) and Florida's Turnpike (SR91) in addition to constructing a system-to-system connection between the Palmetto Expressway, I-95 and Florida's Turnpike, to increase mobility and reduce travel delays through the Golden Glades Interchange. FGT currently operates existing 18-inch and 24-inch high-pressure mainline pipelines that parallel the FDOT District 6 and FTE roadways. The FDOT District 6 and FTE road improvement projects consist of new roadway, ramps, overpass bridges, drainage structures, mechanically stabilized earthen (MSE) walls, and retention ponds, some of which encroach / conflict with portions of FGT's existing 18-inch mainline at different locations within the proposed FDOT District 6 and FTE road project areas in Miami-Dade and Broward Counties, Florida. FDOT/FTE projects are shown in **Appendix 1-A**.

FGT's Project will require the abandonment, relocation and construction of replacement mainline pipeline facilities and appurtenances, and existing facilities reconnections, as follows:

18-inch Mainline Abandonment – Abandon approximately 19.1 miles of existing 18-inch mainline pipeline facilities and appurtenances adjacent to Florida's Turnpike and Palmetto Expressway;

24-inch Mainline Installation – Relocate and replace these facilities with approximately 15.4 miles of new 24-inch mainline pipeline facilities and appurtenances within an existing utility corridor and private easements;

Existing Facilities Reconnections – Relocate FGT's existing lateral interconnects from the existing 18-inch mainline pipeline to FGT's proposed 24-inch replacement for the 6-inch Dania Lateral; Relocate FGT's existing lateral interconnects from the existing 18-inch mainline pipeline to FGT's existing 24-inch mainline pipeline for the 3-inch Lake Forest Lateral, 6-inch North Miami Lateral, and 3-inch Opa Locka Lateral.

1.1 Proposed Facilities

1.1.1 Purpose and Need

FGT's Project is designed to resolve direct conflicts between its existing 18-inch mainline and the FDOT and FTE planned construction and implementation of express lanes along approximately 21 miles of SR826 and SR91 from the I-75 corridor in Miami-Dade County to I-595 in Broward County. In addition, FDOT District 6 and FTE are constructing a system-to-system connection between SR826, I-95 and SR91, to increase mobility and reduce travel delays through the Golden Glades Interchange. The FDOT and FTE road projects consist of new roadway, ramps, overpass bridges, drainage structures, MSE walls, and retention ponds, some of which encroach / conflict with portions of FGT's existing 18-inch mainline at different locations within the proposed FDOT and FTE road project areas in Miami-Dade and Broward counties, Florida. If FGT does not relocate its affected facilities, portions of the existing 18-inch mainline will be under pavement and entombed within MSE walls. Relocating the affected 18-inch mainline facilities and appurtenances outside of the proposed FDOT/FTE construction footprint will resolve the encroachment concerns and conflicts with the FDOT/FTE road improvement projects. In addition, the Turnpike-Palmetto Road Relocation Project will decrease the risk to FDOT/FTE personnel/contractor

20180613-5062 FERC PDF (Unofficial) 6/13/2018 12:15:55 PM

personnel by removing the potential to damage the existing 18-inch mainline facilities and is required to allow FGT's personnel and contractors, and equipment, the necessary space to safely assess and perform required pipeline maintenance and integrity tasks.

1.1.2 Location and Description of Facilities

To facilitate FDOT/FTE scheduled road improvements, FGT will abandon, relocate, and replace a portion of its existing 18-inch mainline facilities and appurtenances with a new 24-inch mainline and appurtenances. The increase in pipe diameter is required to offset the reduction in line pack, flow, and cross-over capability. Line pack and flow are negatively impacted by the approximately 3.7-mile reduction in overall pipeline length, and the cross-over capability is negatively impacted by the separation of the existing 18-inch and 24-inch mainlines. The new section of 24-inch diameter pipeline is required for the existing pipeline system to operate under the current flow and system design parameters which allow FGT to meet their firm customer transportation requirements. The new section of 24-inch mainline will not increase overall system capacity but will allow the flow, line pack and pressure requirements to be met as they currently exist south of the Project area.

Proposed pipeline abandonments and relocations are summarized in **Table 1.1-1**.

TABLE 1.1-1

Proposed Pipeline Facilities Abandonment and Relocation

Facility	Pipeline Diameter and Type	County, State	Mile Posts [a]		Approximate Length (Miles)
			Begin	End	
Pipeline Abandonment and Existing Facilities Reconnections [b]					
18-inch Mainline	18-inch Mainline	Broward & Miami-Dade, FL	883.0	902.2	19.1
New 24-inch Pipeline Installation					
24-inch Mainline	24-inch Mainline	Broward & Miami-Dade, FL	883.0	898.4R[c]	15.4

[a] Mileposts are reference points. The difference between the Begin and End MP numbers for the 18-inch Abandonment do not equal the total length of pipe to be abandoned due to equations in the pipeline stationing and mile posting within the pipeline segment.
[b] 18-inch mainline will be cut, capped, and filled with grout or nitrogen, and abandoned in place. Existing facilities connections to the 18-inch mainline will be reconfigured for connections to FGT's existing 24-inch mainline and new 24-inch facilities
[c] Where FGT's proposed relocation diverges from the existing 18-inch mainline ROW, MP numbers for the new 24-inch mainline facilities have an "R" designation to differentiate between MP locations on the relocation and abandonment portions of the Project.

1.1.2.1 18-inch Mainline Abandonment

FGT proposes to abandon 19.1 miles of its existing 18-inch mainline facilities from mile post (MP) 883.0 to MP 902.2. The abandonment of FGT's existing 18-inch mainline begins at MP 883.0 north of Griffin Road in Broward County, Florida on the east side of Florida's Turnpike. The 18-inch mainline parallels SR91, primarily within FTE ROW for approximately 5.3 miles south to MP 888.3. At MP 888.3, the 18-inch mainline crosses SR91 and parallels the west side, within FTE ROW, for approximately 5.4 miles to the intersection of SR91 and the Palmetto Expressway (SR826) at MP 893.7. At MP 893.7, FGT's 18-inch mainline turns west and parallels the south side of SR826, mainly within FDOT ROW, for approximately 7.1 miles to MP 901. At MP 901, the 18-inch mainline turns south, and parallels the east side of SR826 for approximately 1.2 miles to the end of the proposed abandonment at MP 902.2 in Miami-Dade County,

20180613-5062 FERC PDF (Unofficial) 6/13/2018 12:15:55 PM

Florida. Overview maps and imagery of FGT's 18-inch mainline abandonment are provided in **Appendix 1-A**. Detailed photo-based alignment sheets are provided in **Appendix 1-B**.

FGT will access the 18-inch mainline at discreet locations to cut, cap and fill the pipeline with grout and/or nitrogen. FGT will remove one existing aerial span over the stormwater canal west of SR91 at MP 889.7 and abandon the remainder of the 18-inch mainline pipe and appurtenances in place. FDOT/FTE contractors will remove any abandoned 18-inch mainline pipe that conflicts with the FDOT/FTE road construction activities. FGT's abandonment activities for each site are described in **Table 1.1-2**.

TABLE 1.1-2
Proposed 18-inch Mainline Abandonment Sites

Site Number	County, State	MP	Workspace [a] (acres)	Description of Abandonment Activities
Kick-off [b]	Broward, FL	883.0	0.73	• Cut and isolate existing 18-inch mainline; • Remove existing 18-inch launcher assembly and appurtenances; • Remove approx. 250 feet of existing 18-inch mainline • Install plate, install one small diameter tap and one small diameter valve for grouting; • Fill line with grout.
AB1	Broward, FL	883.9	0.87	• Cut and isolate existing 18-inch mainline; • Install plate, install one small diameter tap and one small diameter valve for grouting; • Fill line with grout.
AB2	Broward, FL	884.9	0.47	• Cut and isolate existing 18-inch mainline; • Install plate, install one small diameter tap and one small diameter valve for grouting; • Fill line with grout.
AB3	Broward, FL	886.0	0.42	• Cut and cap existing 18-inch mainline; • Install plate, install one small diameter tap and one small diameter valve for grouting; • Fill line with grout.
AB4	Broward, FL	886.3	0.65	• Cut and cap existing 18-inch mainline; • Install plate, install one small diameter tap and one small diameter valve for grouting; • Fill line with grout.
AB5	Broward, FL	887.2	0.40	• Cut and cap existing 18-inch mainline; • Install plate, install one small diameter tap and one small diameter valve for grouting; • Fill line with grout.
AB6	Broward, FL	887.6	2.40	• Cut and cap existing 18-inch mainline; • Install plate, install one small diameter tap and one small diameter valve for grouting; • Fill line with grout, • Additional workspace is required at this location to facilitate access from SR91 (*e.g.*, temporary deceleration lanes, traffic controls)

20180613-5062 FERC PDF (Unofficial) 6/13/2018 12:15:55 PM

TABLE 1.1-2
Proposed 18-inch Mainline Abandonment Sites

Site Number	County, State	MP	Workspace [a] (acres)	Description of Abandonment Activities
AB7	Broward, FL	889.7	0.37	• Cut and cap existing 18-inch mainline; • Install plate, install one small diameter tap and one small diameter valve for grouting; • Fill line with grout.
AB8	Miami-Dade, FL	890.7	2.66	• Cut and cap existing 18-inch mainline • Install plate, install one small diameter tap and one small diameter valve for grouting; • Fill line with grout. • Additional workspace utilized at this location for temporary staging of equipment and materials.
AB9	Miami-Dade, FL	891.4	0.73	• Cut and cap existing 18-inch mainline; • Install plate, install one small diameter tap and one small diameter valve for grouting; • Fill line with grout.
AB10	Miami-Dade, FL	892.4	4.01	• Cut and cap existing 18-inch mainline; • Install plate, install one small diameter tap and one small diameter valve for grouting; • Fill line with grout. • Additional workspace proposed at this location for access from public road, loading and offloading of equipment, and temporary staging or equipment and materials.
AB11	Miami-Dade, FL	893.4	0.20	• Cut and cap existing 18-inch mainline; • Remove existing 18-inch MLV; • Install plate, install one small diameter tap and one small diameter valve for grouting; • Fill line with grout.
AB12	Miami-Dade, FL	894.6	0.21	• Cut and cap existing 18-inch mainline; • Install plate, install one small diameter tap and one small diameter valve for grouting; • Fill line with grout.
AB13	Miami-Dade, FL	895.2	0.20	• Cut and cap existing 18-inch mainline; • Install plate, install one small diameter tap and one small diameter valve for grouting; • Fill line with grout.
AB14	Miami-Dade, FL	896.1	0.25	• Cut and cap existing 18-inch mainline; • Install plate, install one small diameter tap and one small diameter valve for grouting; • Fill line with grout.
AB15	Miami-Dade, FL	897.2	0.27	• Cut and cap existing 18-inch mainline; • Install plate, install one small diameter tap and one small diameter valve for grouting; • Fill line with grout.

20180613-5062 FERC PDF (Unofficial) 6/13/2018 12:15:55 PM

TABLE 1.1-2
Proposed 18-inch Mainline Abandonment Sites

Site Number	County, State	MP	Workspace [a] (acres)	Description of Abandonment Activities
AB16	Miami-Dade, FL	898.2	0.26	• Cut and cap existing 18-inch mainline; • Install plate, install one small diameter tap and one small diameter valve for grouting; • Fill line with grout.
AB17	Miami-Dade, FL	899.2	0.20	• Cut and isolate existing 18-inch mainline; • Install plate, install one small diameter tap and one small diameter valve for grouting; • Fill line with grout.
AB18	Miami-Dade, FL	900.2	0.21	• Cut and isolate existing 18-inch mainline; • Install plate, install one small diameter tap and one small diameter valve for grouting; • Fill line with grout
AB19	Miami-Dade, FL	901.2	4.64	• Cut and isolate existing 18-inch mainline • Install one small diameter tap and one small diameter valve for grouting; • Fill line with grout. • Abandonment activities at this site will be conducted within the larger proposed workspace for construction of the new 24-inch mainline.
Terminus [c]	Miami-Dade, FL	902.2	5.95	• Cut and isolate existing 18-inch mainline; • Remove existing 18-inch MLV; • Remove approximately 650 feet of existing 18-inch mainline; • Install plate, install one small diameter tap and one small diameter valve for grouting; • Fill line with grout. • Abandonment activities at this site will be conducted within the larger proposed workspace for construction of the new 24-inch mainline.
Total Abandonment Workspace [c]			**26.10**	

[a] Workspace acreage represents temporary workspace required to conduct abandonment activities. Available workspace is limited in the Project area due to development and congested conditions. Where available and noted in this table, FGT proposes to utilize larger workspace areas for access and temporary staging of equipment and materials.
[b] FGT will conduct abandonment activities at the kick-off for the new 24-inch mainline facilities within the pipeline construction ROW and ATWS. Acreage calculation for this site includes workspace for new pipeline construction.
[c] FGT will conduct abandonment activities at the terminus of the new 24-inch mainline installation within the pipeline construction ROW and ATWS. Acreage calculation for this site includes workspace for new pipeline construction.

1.1.2.2 24-inch Mainline Installation

FGT proposes to relocate and replace its abandoned 18-inch mainline facilities with 15.4 miles of new 24-inch mainline pipeline and appurtenant facilities. FGT proposes to install the new 24-inch mainline pipeline in a new permanent ROW primarily within an existing utility corridor.

20180613-5062 FERC PDF (Unofficial) 6/13/2018 12:15:55 PM

FGT's new 24-inch mainline installation will begin at MP 883.0 north of Griffin Road in Broward County, Florida and parallels the east side of SR91, within and adjacent to FTE ROW, southward to MP 884.2. At MP 884.2, the new 24-inch mainline crosses SR91 to the west, leaving FTE ROW, and follows the existing utility corridor west for approximately 2.5 miles to MP 886.7R. Where FGT's proposed relocation diverges from the existing 18-inch mainline ROW, MP numbers for the installation of the new 24-inch mainline facilities have an "R" designation to differentiate between MP locations on the relocation and abandonment portions of the Project. At MP 886.7R, the new 24-inch mainline turns south, in the western edge of the existing utility corridor, for approximately 0.7 miles to MP 887.4R. At MP 887.4R, the new 24-inch mainline follows the existing utility corridor to the southwest for approximately 9.4 miles to MP 896.8R. At MP 896.8R, the pipeline route follows the existing utility corridor as it turns south and crosses SR826 and rejoins FGT's existing 18-inch mainline ROW at MP 897R. The new 24-inch mainline parallels the east side of SR826, within the existing utility corridor to the Project terminus at MP 898.4R (MP 902.2 on the 18-inch mainline abandonment) in Miami-Dade County, Florida. Maps and imagery of FGT's new 24-inch mainline installation are presented in **Appendix 1-A**. Detailed photo-based alignment sheets are in **Appendix 1-B**.

1.1.2.3 Existing Facilities Reconnections

FGT will maintain service for its 6-inch Dania Lateral, 3-inch Lake Forest Lateral, 6-inch North Miami Lateral, and 3-inch Opa Locka Lateral on the 18-inch mainline by removing existing connection piping to the 18-inch mainline pipeline and adding new connections to FGT's existing 24-inch mainline as described in **Table 1.1-3**.

FGT currently has a dual-feed capability for the laterals listed above. The separation of the new 24-inch replacement mainline away from the existing 24-inch mainline will require a new 24-inch mainline valve (MLV) to be installed on FGT's existing 24-inch mainline with taps on both sides of the new 24-inch MLV to provide the like-for-like dual feed capability. This will be required for the 3-inch Lake Forest, 6-inch North Miami, and 3-inch Opa-Locka laterals. The 6-inch Dania Lateral Interconnect will have the existing 24-mainline and the new 24-inch mainline parallel to each other and will use a 6-inch tee and 6-inch valve to re-establish the dual feed capability. Proposed reconnections for FGT's existing facilities are summarized by site in **Table 1.1-3**.

TABLE 1.1-3
Proposed Existing Facilities Reconnections [a]

Facility	Pipeline Diameter and Type	County, State	MP	Workspace [b] (acres)	Proposed Modification(s)
6-inch Dania Lateral Interconnect	6-inch Lateral	Broward, FL	883.6	4.42	• Install one 6-inch tee and 6-inch valve off proposed new 24-inch mainline to connect the existing 6-inch Dania Lateral to the new 24-inch mainline; • Modify and abandon taps on existing 18-inch mainline.

20180613-5062 FERC PDF (Unofficial) 6/13/2018 12:15:55 PM

TABLE 1.1-3
Proposed Existing Facilities Reconnections [a]

Facility	Pipeline Diameter and Type	County, State	MP	Workspace [b] (acres)	Proposed Modification(s)
3-inch Lake Forest Interconnect	3-inch Lateral	Broward, FL	888.7	11.23	• Install one 24-inch MLV; • Install two 3-inch taps on existing 24-inch mainline; • Abandon existing tap and crossovers between existing 18-inch mainline and existing 24-inch mainline; • Install approx. 1,950 feet of new 3-inch lateral to connect existing 3-inch Lake Forest Lateral to the existing 24-inch mainline.
6-inch North Miami Interconnect	6-inch Lateral	Miami-Dade, FL	893.7	2.63	• Install one 24-inch MLV; • Install two 6-inch taps on existing 24-inch mainline; • Abandon existing taps and crossovers between the existing 18-inch mainline and existing 24-inch mainline; • Install one 8-inch launcher assembly with associated appurtenances; • Install approx. 1,400’ of new 8-inch lateral; • Install one 8-inch [c] receiver assembly with associated appurtenances; • Connect new 8-inch [c] receiver assembly to existing 6-inch North Miami Lateral.
3-inch Opa Locka Interconnect	3-inch Lateral	Miami-Dade, FL	895.7	0.93	• Install one new 24-inch MLV; • Abandon existing tap on existing 18-inch mainline; • Install two 3-inch taps on existing 24-inch Mainline; • Install approx. 400’ of new 3-inch lateral and reconnect to existing Opa Locka meter station facilities.
	Total Interconnection Workspace			**19.21**	

[a] FGT may conduct abandonment activities for the 18-inch mainline at these locations. Abandonment activities include cutting, capping, and filling the 18-inch mainline with grout and/or nitrogen.
[b] Workspace acreage represents temporary workspace required to conduct reconnection activities. Acreage of land required for operation of new interconnect facilities is presented in Table 1.2-4.
[c] Portions of the 6-inch North Miami Lateral and associated piping include some 8-inch piping. The proposed 8-inch appurtenances are to accommodate these facilities.

20180613-5062 FERC PDF (Unofficial) 6/13/2018 12:15:55 PM

1.1.2.4 Aboveground Appurtenances

Proposed aboveground appurtenances are described in **Table 1.1-4**.

TABLE 1.1-4
Aboveground Appurtenances to be Abandoned and Proposed New Aboveground Appurtenances

Facility Type and Name	Location (MP)	County, State	Description
18-inch Mainline Abandonment			
18-inch Launcher	883.0	Broward, FL	Remove existing 18-inch launcher assembly
18-inch MLV	893.4	Miami-Dade, FL	Remove existing 18-inch MLV
18-inch MLV	902.2	Miami-Dade, FL	Remove existing 18-inch MLV
Existing Facilities Reconnections			
6-inch Dania Interconnect			
None	883.6	Broward, FL	No new aboveground appurtenances are proposed. FGT will utilize existing aboveground appurtenances at this location.
3-inch Lake Forest Interconnect			
24-inch MLV	888.7	Broward, FL	• Install one new 24-inch MLV and associated piping and appurtenances; • Gravel and fence new approx. 50 feet X 75 feet site; • Install new approx. 1,300’ permanent access road
6-inch North Miami Interconnect			
8-inch Receiver	893.7	Miami-Dade, FL	• Install one new 8-inch Receiver and associated piping and appurtenances and tie-in to existing 6-inch North Miami Lateral; • Gravel and fence new approx. 75 feet X 75 feet site • Install new 100-foot permanent access road
24-inch MLV 8-inch Launcher	894.0	Miami-Dade, FL	• Install one new 24-inch MLV and associated piping and appurtenances; • Install one new 8-inch Launcher and associated piping and appurtenances; • Gravel and fence new approx. 75 feet X 75 feet site; • Install new approx. 100-foot access road.
3-inch Opa Locka Lateral Interconnect			
24-inch MLV	895.7	Miami-Dade, FL	• Install one new 24-inch MLV and associated piping and appurtenances; • Gravel and fence new approx. 50 feet X 75 feet site; • Install new approx. 50-foot access road

20180613-5062 FERC PDF (Unofficial) 6/13/2018 12:15:55 PM

TABLE 1.1-4
Aboveground Appurtenances to be Abandoned and Proposed New Aboveground Appurtenances

Facility Type and Name	Location (MP)	County, State	Description
24-inch Mainline Installation			
24-inch Launcher	883.0	Broward, FL	• Install one new 24-inch launcher with associated piping and appurtenances; • Gravel and fence 25 feet X 100 feet expansion of existing site.
24-inch MLV	887.1R	Broward, FL	• Install one new 24-inch MLV and associated piping and appurtenances; • Gravel and fence new 50 feet X 75 feet site; Install new approx. 200-foot permanent access road.
24-inch MLV	892.8R	Broward, FL	• Install one new 24-inch MLV and associated piping and appurtenances; • Gravel and fence new 50 feet X 75 feet site; Install new approx. 940-foot permanent access road
24-inch Receiver and 18-inch Launcher	898.4R	Miami-Dade, FL	• Install one new 24-inch receiver and one new 18-inch launcher and associated piping and appurtenances; • Gravel and fence new 100 feet X 100 feet site; • Install new approx. 650-foot permanent access road

1.1.3 Location Maps Detailed Route Maps, and Site Plans

A regional overview map of the Project, excerpts of topographic quadrangles with National Wetland Inventory (NWI) overlays of the Project area, and topographic quadrangle maps with Project facilities are included in **Appendix 1-A.** Photo-based pipeline alignment sheets for the proposed pipeline facilities abandonment and new pipeline facilities installation are provided as **Appendix 1-B**.

1.2 Land Requirements

Table 1.2-1 summarizes land requirements for construction and operation of FGT's proposed new 24-inch pipeline facilities. Current land uses of all areas affected by the Project are described in Resource Report 8 – Land Use, Recreation and Aesthetics.

TABLE 1.2-1
Summary of Land Requirements for Pipeline Facilities

Facility	County, State	Land Affected During Construction (acres)	Land Affected During Operation (acres)
18-inch Mainline Abandonment			
Temporary Workspace	Broward and Miami-Dade, FL	26.10	0
Access Roads	Broward and Miami-Dade, FL	4.25	0

20180613-5062 FERC PDF (Unofficial) 6/13/2018 12:15:55 PM

TABLE 1.2-1
Summary of Land Requirements for Pipeline Facilities

Facility	County, State	Land Affected During Construction (acres)	Land Affected During Operation (acres)
Subtotal Land Requirements for Abandonment		**30.36**	**0**
Existing Facilities Reconnections			
ROW and Workspace	Broward and Miami-Dade, FL	19.21	1.06
Access Roads	Broward and Miami-Dade, FL	1.58	1.06
Subtotal Land Requirements for Facilities Reconnections		**20.79**	**2.12**
24-inch Mainline Installation			
Pipeline ROW	Broward and Miami-Dade, FL	186.7	93.3
ATWS [a]	Broward and Miami-Dade, FL	107.3	0
Access Roads	Broward and Miami-Dade, FL	32.79	32.79
Subtotal Land Requirements for 24-inch Mainline Installation		**330.27**	**129.57**
Other Work Areas			
Staging Yards	Broward and Miami-Dade, FL	51.89	0
Subtotal Other Work Areas		**51.89**	**0**
Total Land Requirements for Project		**433.31**	**131.69**

[a] ATWS = Additional Temporary Workspace

1.2.1 Pipeline Facilities

1.2.1.1 Permanent Right-of-Way

FGT's 24-inch mainline installation will require a new permanent ROW, generally 50 feet wide, to operate and maintain the replacement pipeline facilities. FGT's proposed permanent ROW will be located primarily within an existing utility corridor, and some private easements along with FTE and FDOT ROW. Land requirements for permanent ROW are summarized in **Table 1.2-1**.

1.2.1.2 Construction Right-of-Way

For construction of the new 24-inch mainline facilities, FGT will use a typical 100-foot-wide construction ROW consisting of a 50-foot-wide permanent ROW and 50 feet of temporary workspace. **Appendix 1-C** includes typical ROW cross sections for the proposed pipeline facilities. Construction ROW limits are identified on the photo-alignment sheets included in **Appendix 1-B**. Land requirements for the construction ROW are summarized in **Table 1.2-1**.

FGT will not use a typical construction ROW for abandonment of its 18-inch mainline facilities and reconnections for existing facilities. For these work sites, FGT will use its existing permanent ROW and new temporary workspaces. Workspace requirements will vary by site and are described in **Table 1.1-3**.

1.2.1.3 Additional Temporary Work Space

For construction of the new 24-inch mainline facilities, FGT will require additional temporary workspace (ATWS) at road crossings, HDD entry/exit points, wetland and waterbody crossings, for truck turnarounds and offloading areas adjacent to roads, at hydrotest locations, at crossovers, at tie-ins, for staging and

20180613-5062 FERC PDF (Unofficial) 6/13/2018 12:15:55 PM

fabrication of pipe sections, for dewatering, at foreign utility crossings, and at abandonment sites for access to existing pipelines. Land requirements for ATWS areas are summarized in **Table 1.2-1** and detailed by MP location in Resource Report 8.

FGT will require ATWS at all 18-inch mainline abandonment sites and at all sites for reconnections of existing facilities. Acreage requirements for each site are shown in **Tables 1.1-2** and **1.1-3**.

1.2.1.4 Access Roads

FGT will utilize public roads and existing private roads/driveways for access to the construction ROW for the new 24-inch mainline facilities, 18-inch mainline abandonment sites and sites for reconnections of existing facilities. FGT may improve temporary access roads for Project use. Improvements include grading, graveling, asphalting, and maintenance for safe access for Project personnel, vehicles, equipment and materials. Some roads may be widened at specific locations to allow passage of large vehicles and heavy equipment. All proposed temporary access roads will be restored to pre-construction condition or better in accordance with permit conditions and landowner requirements at the conclusion of FGT's Project.

For the 24-inch mainline facilities, FGT will acquire rights to use all proposed existing temporary access roads for permanent access to maintain and operate its new facilities. FGT will also need to construct new permanent access roads to access new above ground appurtenances (e.g., MLVs, launchers, receivers).

Table 1.2-2 provides details for access roads including location, dimensions, land use requirements and potential improvements that may be required.

TABLE 1.2-2
Proposed Access Roads [a]

Access Road Number	Location (MP)	Temporary/ Permanent	Access Road Length (feet)	Land Required for Construction [b] (acres)	Land Required for Operation [b] (acres)	Proposed Improvements [c]
AR-883.0	882.92	Temp/Perm	1490	1.03	1.03	GR, GA, W
AR-883.1	883.04	Temp/Perm	271	0.19	0.19	GR, GA, W
AR-883.2	883.22	Temp/Perm	259	0.18	0.18	GR, GA, W
AR-883.4	883.37	Temp/Perm	341	0.23	0.23	GR, GA, W
AR-883.5	883.54	Temp/Perm	643	0.44	0.44	GR, GA, W
AR-883.6	883.66	Temp/Perm	191	0.13	0.13	GR, GA, W
AR-883.7	883.68	Temp/Perm	832	0.57	0.57	GR, GA, W
AR-884.1	884.05	Temp/Perm	543	0.37	0.37	GR, GA, W
AR-884.3R	884.21	Temp/Perm	1425	0.98	0.98	GR, GA, W
AR-884.3R	884.49	Temp/Perm	1737	1.20	1.20	GR, GA, W
AR-884.7R	884.69	Temp/Perm	201	0.14	0.14	GR, GA, W
AR-885.4R	885.30	Temp/Perm	436	0.30	0.30	GR, GA, W
AR-885.5R	885.45	Temp/Perm	629	0.43	0.43	GR, GA, W
AR-885.5R	885.50	Temp/Perm	584	0.40	0.40	GR, GA, W
AR-885.8R	885.75	Temp/Perm	589	0.41	0.41	GR, GA, W
AR-886.0R	885.95	Temp/Perm	338	0.23	0.23	GR, GA, W
AR-886.5R	886.39	Temp/Perm	638	0.44	0.44	GR, GA, W
AR-886.6R	886.57	Temp/Perm	196	0.13	0.13	GR, GA, W
AR-886.9R	886.90	Temp/Perm	838	0.58	0.58	GR, GA, W
AR-887.0R	886.96	Temp/Perm	355	0.24	0.24	GR, GA, W
AR-887.1R	887.05	Temp/Perm	357	0.25	0.25	GR, GA, W
AR-887.2R	887.10	Temp/Perm	843	0.58	0.58	GR, GA, W
AR-887.4R	887.37	Temp/Perm	126	0.09	0.09	GR, GA, W
AR-888.1R	888.07	Temp/Perm	1,120	0.77	0.77	GR, GA, W
AR-888.5R	888.48	Temp/Perm	243	0.17	0.17	GR, GA, W
AR-888.6R	888.68	Temp/Perm	256	0.18	0.18	GR, GA, W

20180613-5062 FERC PDF (Unofficial) 6/13/2018 12:15:55 PM

TABLE 1.2-2
Proposed Access Roads [a]

Access Road Number	Location (MP)	Temporary/ Permanent	Access Road Length (feet)	Land Required for Construction [b] (acres)	Land Required for Operation [b] (acres)	Proposed Improvements [c]
AR-888.7R	888.68	Temp/Perm	269	0.19	0.19	GR, GA, W
AR-888.8R	888.77	Temp/Perm	2,025	1.39	1.39	GR, GA, W
AR-889.3R	889.26	Temp/Perm	176	0.12	0.12	GR, GA, W
AR-889.7R	889.71	Temp/Perm	1,050	0.72	0.72	GR, GA, W
AR-889.9R	889.89	Temp/Perm	2,157	1.49	1.49	GR, GA, W
AR-890.0R	889.92	Temp/Perm	94	0.06	0.06	GR, GA, W
AR-890.2R	890.28	Temp/Perm	47	0.03	0.03	GR, GA, W
AR-890.3R	890.26	Temp/Perm	100	0.07	0.07	GR, GA, W
AR-890.4R	890.39	Temp/Perm	143	0.10	0.10	GR, GA, W
AR-890.9R	890.83	Temp/Perm	4,554	3.14	3.14	GR, GA, W
AR-891.2R	890.13	Temp/Perm	347	0.24	0.24	GR, GA, W
AR-891.8R	891.69	Temp/Perm	208	0.14	0.14	GR, GA, W
AR-892.1R	892.02	Temp/Perm	640	0.44	0.44	GR, GA, W
AR-892.2R	892.08	Temp/Perm	194	0.13	0.13	GR, GA, W
AR-892.3R	892.24	Temp/Perm	272	0.19	0.19	GR, GA, W
AR-892.4R	892.28	Temp/Perm	285	0.20	0.20	GR, GA, W
AR-892.8R	892.77	Temp/Perm	1635	1.13	1.13	GR, GA, W
AR-892.9R	892.83	Temp/Perm	438	0.30	0.30	GR, GA, W
AR-893.1R	893.08	Temp/Perm	213	0.15	0.15	GR, GA, W
AR-893.4R	893.30	Temp/Perm	3035	2.09	2.09	GR, GA, W
AR-893.8R	893.78	Temp/Perm	315	0.22	0.22	GR, GA, W
AR-894.0R	893.96	Temp/Perm	228	0.16	0.16	GR, GA, W
AR-894.1R	894.09	Temp/Perm	885	0.61	0.61	GR, GA, W
AR-894.3R	894.29	Temp/Perm	1365	0.94	0.94	GR, GA, W
AR-894.4R	894.36	Temp/Perm	267	0.18	0.18	GR, GA, W
AR-894.5R	894.43	Temp/Perm	433	0.30	0.30	GR, GA, W
AR-894.6R	894.54	Temp/Perm	441	0.30	0.30	GR, GA, W
AR-894.7R	894.65	Temp/Perm	1463	1.01	1.01	GR, GA, W
AR-894.7R	894.78	Temp/Perm	904	0.62	0.62	GR, GA, W
AR-895.4R	895.32	Temp/Perm	617	0.42	0.42	GR, GA, W
AR-895.4R	895.44	Temp/Perm	840	0.58	0.58	GR, GA, W
AR-895.4R	895.61	Temp/Perm	610	0.42	0.42	GR, GA, W
AR-895.9R	895.97	Temp/Perm	3810	2.62	2.62	GR, GA, W
AR-896.0R	895.94	Temp/Perm	92	0.06	0.06	GR, GA, W
AR-896.7R	896.68	Temp/Perm	35	0.02	0.02	GR, GA, W
AR-896.8R	896.81	Temp/Perm	36	0.02	0.02	GR, GA, W
AR-896.9R	896.82	Temp/Perm	43	0.03	0.03	GR, GA, W
AR-901.1	897.35	Temp/Perm	391	0.27	0.27	GR, GA, W
AR-901.6	897.86	Temp/Perm	194	0.13	0.13	GR, GA, W
AR-901.7	897.90	Temp/Perm	198	0.14	0.14	GR, GA, W
AR-901.8	897.94	Temp/Perm	215	0.15	0.15	GR, GA, W
AR-901.9	897.98	Temp/Perm	244	0.17	0.17	GR, GA, W
AR-902.0	898.18	Temp/Perm	208	0.14	0.14	GR, GA, W
AR-902.1	898.35	Temp/Perm	419	0.29	0.29	GR, GA, W
Total Land Required for Access Roads				**32.79**	**32.79**	

20180613-5062 FERC PDF (Unofficial) 6/13/2018 12:15:55 PM

TABLE 1.2-2
Proposed Access Roads [a]

Access Road Number	Location (MP)	Temporary/ Permanent	Access Road Length (feet)	Land Required for Construction [b] (acres)	Land Required for Operation [b] (acres)	Proposed Improvements [c]

[a] FGT will utilize existing roads and parking lots. FGT environmentally surveyed a 30-foot-wide corridor along each proposed access road. While FGT would generally use roads in their existing conditions, FGT may be required to widen parts of existing access roads within this 30-foot survey area to facilitate passage of construction traffic and large equipment. FGT will restore all access roads to pre-construction condition or better at the conclusion of construction activities.
[b] Acreage calculations are based on road length X nominal width of road and 30-foot-wide survey buffer
[c] Proposed improvements: GR = Grade; GA = Gravel and/or Asphalt; W = Widen

1.2.1.5 Temporary Staging Yards

FGT proposes to use five temporary yards for staging and storage of pipe, equipment and materials; fabrication activities; and, office facilities for construction personnel. FGT may grade, gravel and otherwise modify these sites for Project use.

At the conclusion of construction and abandonment activities, FGT will restore temporary staging yards to preconstruction conditions. All disturbed areas will be revegetated and stabilized in accordance with permit conditions and landowner requirements.

Table 1.2-3 lists proposed staging yards by location and describes land use requirements. Proposed yards are shown on the attached site-specific maps, quadrangle maps and photo-alignment sheets.

TABLE 1.2-3
Land Requirements for Proposed Temporary Staging Yards

Facility	Location (MP)	County, State	Land Required During Construction (acres)
Staging Yard 1	887.0R	Broward, FL	11.62
Staging Yard 2	887/2R	Broward, FL	9.93
Staging Yard 3	Offline	Broward, FL	4.87
Staging Yard 4	Offline	Broward, FL	17.92
Staging Yard 5	883.0	Broward, FL	7.55
Total Land Requirements Temporary Staging Yards			**51.89**

1.2.2 Aboveground Appurtenances

Proposed aboveground appurtenances are described in **Table 1.1-4**. These facilities will be installed and operated within FGT's existing permanent ROW and proposed new 50-foot permanent ROW. FGT will install a gravel pad and fencing around each of the sites. Locations and land requirements for the proposed aboveground appurtenances are in **Table 1.2-4**.

20180613-5062 FERC PDF (Unofficial) 6/13/2018 12:15:55 PM

TABLE 1.2-4
Land Requirements for Aboveground Appurtenances

Facility Type and Name	Location (MP)	County, State	Land Required for Construction (acres)	Land Required for Operation (acres)
Existing Facilities Reconnections				
6-inch Dania Interconnect				
None	883.6	Broward, FL	4.42 [a]	0 [b]
3-inch Lake Forest Interconnect				
24-inch MLV	888.7	Broward, FL	11.23 [a]	0.09
8-inch North Miami Interconnect				
8-inch Receiver	893.7	Miami-Dade, FL	0.73	0.13
24-inch MLV	894.0		0.42	0.13
8-inch Launcher				
3-inch Opa Locka Lateral Interconnect				
24-inch MLV	895.7	Miami-Dade, FL	0.38	0.09
Subtotal Existing Facility Reconnections			**16.80**	**0.44**
24-inch Mainline Installation				
24-inch Launcher	883.0	Broward, FL	0 [c]	0.06
24-inch MLV	887.1R	Broward, FL	0 [c]	0.09
24-inch MLV	892.8R	Broward, FL	0.23	0.09
24-inch Receiver	898.4R	Miami-Dade, FL	0 [c]	0.23
18-inch Launcher				
Subtotal 24-inch Mainline Installation			**0.23**	**0.47**
Total Land Requirements Aboveground Appurtenances			**17.03**	**0.91**

[a] Workspace acreage indicated includes all workspace for abandonment and construction activities to reconfigure interconnect facilities at this location.

[b] No new aboveground appurtenances are proposed for the 6-inch Dania Lateral.

[c] FGT will construct these appurtenances within the construction ROW and ATWS for the pipeline portion of the 24-inch mainline facilities installation. Acreage for these sites is included in calculations for the pipeline and is not duplicated in this table.

1.3 Construction Procedures

FGT proposes to begin pipeline construction activities First Quarter 2020 in coordination with FGT's Gas Control, Customer requirements, and to meet FDOT/FTE construction schedules for proposed road improvements. FGT will construct the relocation facilities first with abandonment activities conducted immediately thereafter. Construction activities are expected to take approximately one year for the installation of the relocation. Abandonment activities are expected to take approximately six months with a portion of the work taking place concurrently with pipeline construction activities. FGT will construct the Project utilizing one spread with about 250 people. Construction will take place Monday through Saturday between the hours of 7 a.m. to 7 p.m. Construction could occur outside these days/times in the event a task is underway and interrupting the process could adversely impact the safe completion/success of the activity (e.g. HDD pullback, road bore or tie-in, hydrostatic testing).

FGT will include implementation details in its construction drawings and specifications so that construction of the proposed facilities will comply with the measures identified in this Environmental Report and applicable permits. FGT will provide its Contractors with copies of specifications, a Construction Drawing

20180613-5062 FERC PDF (Unofficial) 6/13/2018 12:15:55 PM

Package approved for construction, and all environmental permits, certificates, clearances and authorizations associated with the Project. FGT will conduct environmental training for all construction personnel prior to and during construction of the Project. Training will focus on the requirements of the FERC Upland Erosion Control Revegetation and Maintenance Plan (Plan) and Wetland and Waterbody Construction and Mitigation Procedures (Procedures) and other Project-specific permit conditions and mitigation measures, as applicable.

FGT will assign at least one Environmental Inspector (EI) to the Project. The EI's duties include, but are not limited to, ensuring compliance with all environmental conditions. The EI will have peer status with any/all other inspectors, will be present throughout construction and restoration, and will have the authority to enforce permit conditions, to issue stop-activity orders, and require corrective actions to maintain environmental compliance.

1.3.1 Pipeline Facilities

1.3.1.1 Clearing and Grading

Prior to construction activities, FGT will survey and stake the limits of the approved workspace to clearly identify Project limits. No work or ground disturbing activities will take place outside of the approved Project footprint without prior approval from the FERC, other permitting agencies, and landowner approvals, as required.

FGT will clear brush and trees within the Project ROW and dispose of in accordance with applicable regulations. Existing fences will be cut and braced along the ROW. Temporary fencing, safety fencing, and/or gates will be erected/relocated as required and in accordance with permits and landowner agreements. The ROW will be graded to create a level working surface allowing safe passage and operation of equipment. Due to the level and open nature of the Project area, FGT anticipates that minimal clearing and grading will be required. Temporary erosion and sediment controls will be installed in accordance with the Plan and Procedures, permits, and other environmental authorizations.

1.3.1.2 Trenching

Following clearing and grading, FGT will excavate the trench for installation of the pipe. Depending on site-specific conditions, FGT may construct pipe segments prior to trenching at certain locations. The trench will typically be 8 to 10 feet deep; sufficient depth to allow a minimum of 3 feet of soil cover between the top of the pipe or concrete coating and the final land surface after backfilling. The trench will be approximately 15 feet wide at the top and approximately 3-5 feet wide at the bottom. FGT does not propose any blasting.

1.3.1.3 Pipe Preparation and Lowering

The pipe segments will be temporarily placed or strung alongside the trench, typically on skids, where they will be bent as necessary, welded together, inspected, and the joints coated in preparation for lowering-in. Where required, concrete coating will be field-applied for buoyancy control. The prepared sections of pipe will be lifted off temporary supports and lowered into the trench by side-boom tractors.

1.3.1.4 Padding and Backfilling

After the pipe is lowered into the trench, the trench will be backfilled. Previously excavated materials will be placed back into the trench using bladed equipment or backhoes. Where the previously excavated material contains large rocks or other materials that could damage the pipe or coating, clean fill or a

20180613-5062 FERC PDF (Unofficial) 6/13/2018 12:15:55 PM

protective coating will be placed around the pipe prior to backfilling. Following backfilling, a small crown may be left over the ditch line to account for soil settling that may occur.

1.3.1.5 Trench Dewatering

Trench dewatering will be conducted as needed to maintain safe working conditions and facilitate construction of the pipeline (*e.g.*, tie-ins). Well-pointing, the installation of a series of shallow wells to draw down the immediate surficial water table in a localized area, may be used at certain locations. All dewatering activities will be in accordance with the Plan and Procedures and applicable permits. Best management practices (BMPs) such as filter bags, silt fence and energy dissipation devices will be used to control erosion and sedimentation at discharge points for dewatering effluent.

1.3.1.6 Hydrostatic Testing and Final Tie-ins

After backfilling the trench, FGT will hydrostatically test pipeline facilities in accordance with Federal Department of Transportation requirements. FGT will also hydrostatically test prefabricated HDD pipe sections prior to installation. The water in the pipe will be pressurized and held for a minimum of eight (8) hours (four (4) hours for the prefabricated HDD pipe sections). Any loss of pressure that cannot be attributed to factors unrelated to integrity, such as temperature changes, will be investigated. Any leaks will be repaired and the segment retested. Upon completion of the test, the water will be discharged in compliance with permit conditions. Test water is typically discharged over-ground through an energy dissipating and filtration device. Test water will contact only new pipe and no chemicals will be added. Once a segment of pipe has been successfully tested and dried, the test cap and manifold will be removed and the pipe will be connected to the remainder of the pipeline.

1.3.1.7 Cleanup and Restoration

All disturbed areas will be restored to pre-construction contours and all debris will be properly disposed of in accordance with applicable regulations. Temporary erosion controls will remain in place until replaced by permanent devices or disturbed areas are stabilized through revegetation in accordance with the FERC Plan and Procedures, permit conditions, and landowner requirements.

1.3.1.8 Fugitive Dust Control

FGT will implement measures to minimize the effects of fugitive dust as required. Typical practices to minimize fugitive dust include watering exposed soil surfaces, applying temporary mulch and expediting restoration and revegetation activities.

1.3.1.9 Residential Construction

Residences within 50 feet of the proposed construction ROW are discussed in Resource Report No. 8. Site-specific residential construction plans are included in **Appendix 1-C.**

For residences within 50 feet of the proposed workspace, FGT will adhere to the residential construction requirements in the FERC Plan. These requirements include:

- 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

20180613-5062 FERC PDF (Unofficial) 6/13/2018 12:15:55 PM

- Restore all lawn areas and landscaping immediately following cleanup operations, as specified in landowner agreements. If seasonal or weather conditions prevent compliance with these time frames, FGT will maintain and monitor temporary erosion controls until conditions allow completion of restoration.

1.3.1.10 Road Crossings

FGT will use trenchless construction methods such as conventional bores or horizontal directional drills (HDD) for road crossings in accordance with State, County and local permits. A conventional bore is performed by excavating a pit for the auger/bore machine on one side of the road being crossed and a receiving pit on the other side of the road. The bore machine jacks the pipe along the alignment while simultaneously excavating the soil with a rotating cutting head or auger. The installed bored segment is then tied into the remainder of the pipeline.

1.3.1.11 Horizontal Directional Drills

FGT will use HDDs for areas where existing surface structures or natural features make open cut methods prohibitive. This trenchless method of pipeline installation involves setting up a drilling rig on the construction ROW and drilling a pilot hole along the pipeline installation trajectory. Once the pilot hole is completed, successively larger reamers are pulled back through the pilot hole until the drilled opening is large enough to accommodate the proposed pipeline section being installed. The pipe pullback section is assembled (i.e., welded, NDE inspected, coated, hydrostatically tested) and pulled back through the HDD hole for installation. Drilling mud, a mixture of non-toxic bentonite clay and water, is circulated through the bore hole to remove cuttings and facilitate the drilling process. FGT will filter and recycle the drilling mud to the extent practical. FGT will dispose of spent drilling fluid in accordance with applicable regulations. Proposed HDD locations are shown in **Table 1.3-1**. Site-specific plans for each HDD are included in **Appendix 1-C.**

TABLE 1.3-1
Proposed HDD Locations

Facility / HDD No.	Milepost [a] Begin	Milepost [a] End	Length (feet)	Feature/Reason for HDD
Existing Facilities Reconnections				
Lake Forest HDD 1	0.00	0.20	1050	Congested Area
Lake Forest HDD 2	0.20	0.35	770	Congested Area
North Miami HDD 1	0.00	0.08	400	Palmetto Expressway
North Miami HDD 2	0.08	0.29	1100	Florida Turnpike
Opa Locka HDD	0.00	0.08	400	Palmetto Expressway
Subtotal Reconnections Pipeline Installed Via HDD			**3720**	
24-inch Mainline Installation				
HDD 01	883.0	883.5	2826	Congested area, canal and Griffin Road crossing.

20180613-5062 FERC PDF (Unofficial) 6/13/2018 12:15:55 PM

TABLE 1.3-1
Proposed HDD Locations

Facility / HDD No.	Milepost [a] Begin	Milepost [a] End	Length (feet)	Feature/Reason for HDD
HDD 02	883.6	884.1R	2262	Commercial parking lot, power poles and guy wires.
HDD 03	884.2R	884.5R	1873	Florida's Turnpike (SR91)
HDD 04	884.7R	885.0R	1795	Wilson Road, Aires Road, canal crossing, and commercial nursery
HDD 05	885.4R	885.8R	2200	SW 70th Ave, two canal crossings, commercial nursery
HDD 06	885.9R	886.3R	1922	Wolf Lake, canal, and road crossings
HDD 07	886.4R	886.7R	1511	Power substation and University Dr.
HDD 08	886.7R	886.9R	1458	Congested area, commercial properties
HDD 09	887.1R	887.4R	1636	Stirling Rd and commercial properties
HDD 10	887.7R	887.8R	892	Monterra Blvd., minimize impacts to residential properties
HDD 11	888.5R	888.8R	1481	Pine Island Road, NW 23rd St, and limit impacts to residential properties
HDD 12	889.1R	889.4R	1303	Taft St and canal crossing
HDD 13	889.7R	890.0R	1380	Johnson St. and limit impacts to residential properties
HDD 14	890.3R	890.8R	2701	N Palm Ave, Pines Blvd, canal, shopping mall entrance and parking lot
HDD 15	891.2R	891.7R	2965	Boat and RV storage facility, and Pembroke Rd.
HDD 16	892.1R	892.4R	1657	Miramar Blvd and congested area
HDD 17	892.4R	893.1R	3877	Red Road and Miramar Pkwy
HDD 18	893.3R	894.1R	4544	Homestead Extension of Florida's Turnpike, Flamingo Road, 2 canals, and an apartment complex.
HDD 19	894.2R	894.8R	3015	Apartment complex, ponds, Somerset Blvd, Honey Hill Dr., N Augusta Dr., and a canal
HDD 20	895.5R	895.9R	2395	Miami Gardens Dr., parking lot, and a power substation.
HDD 21	896.6R	896.9R	1170	Drill crosses NW 173rd and NW 169th Streets, and a canal, power poles, existing utilities
HDD 22	896.9R	897.2R	1822	Palmetto Expressway and canal

20180613-5062 FERC PDF (Unofficial) 6/13/2018 12:15:55 PM

TABLE 1.3-1
Proposed HDD Locations

Facility / HDD No.	Milepost [a] Begin	Milepost [a] End	Length (feet)	Feature/Reason for HDD
HDD 23	897.7R	898.4R/902.2	3539	Multiple buildings, power poles and 2 ponds.
Subtotal 24-inch Mainline Installation Via HDD			**50224**	
Total Project Pipeline Installed Via HDD			**53944**	

[a] Begin and End MP values for the Existing Facilities Reconnections are for respective laterals. MP 0.0 is the take-off point from the existing 24-inch mainline for each new interconnect.

1.3.1.12 Wetland Construction

FGT will install the proposed pipeline across wetlands using open cut or HDD methods as indicated in **Table 1.3-2** and on the attached photo-alignment sheets. Detailed wetland information is included in Resource Report 2 – Water Use and Quality.

TABLE 1.3-2
Wetlands Crossed by the Project

Facility/Wetland No.	Milepost Begin	Milepost End	Crossing Length [a] (feet)	Crossing Method
18-inch Mainline Abandonment				
None			0	
Subtotal Wetland Crossing Length for Abandonment			**0**	
Existing Facilities Reconnections				
None			0	
Subtotal Wetland Crossing Length for Reconnections			**0**	
24-inch Mainline Installation				
BR-WL-014	890.49R	890.49R	21	HDD
BR-WL-016	890.51R	890.53R	95	HDD
BR-WL-017	890.58R	890.64R	338	HDD
BR-WL-018	890.66R	890.66R	21	HDD
BR-WL-022	890.75R	891.06R	1580	Open Cut and HDD
BR-WL-023	891.06R	891.17R	248	Open Cut and HDD
BR-WL-007	892.52R	892.83R	1631	HDD
BR-WL-013	893.12R	893.16R	227	Open Cut and HDD
BR-WL-011	893.47R	893.49R	137	HDD
BR-WL-026	893.73R	893.74R	26	HDD
Subtotal Wetland Crossing Length for 24-inch Mainline Installation			**4,324**	
Total Wetland Crossing Length for Project			**4,324**	

20180613-5062 FERC PDF (Unofficial) 6/13/2018 12:15:55 PM

TABLE 1.3-2
Wetlands Crossed by the Project

Facility/Wetland No.	Milepost Begin	Milepost End	Crossing Length [a] (feet)	Crossing Method

[a] Wetland crossing lengths are for centerline crossings only. Wetland intersects of workspace and acreage impacts are discussed in Resource Report 2.

For open cut crossings, FGT will adhere to the requirements of the FERC Procedures. Specifically, FGT will clear vegetation to ground level, leaving roots intact, and limit stump removal and grading to the area directly over the trench line unless required to create a safe and level working surface. In non-saturated wetlands, FGT will segregate and store the top 12 inches of wetland topsoil away from subsoil from trenching activities. FGT will limit equipment operating within the wetland to that which is necessary for installation of the pipeline. FGT will utilize low ground weight equipment or operate standard equipment off of timber equipment mats to prevent mixing of wetland topsoil with subsoil. FGT will remove construction debris and cleared vegetative material from wetland areas for proper disposal. Once the pipeline is successfully installed, FGT will restore segregated topsoil during backfilling and restore grade to preconstruction. Temporary and permanent erosion and sedimentation control measures will be installed and maintained as required by permit conditions until revegetation and stabilization of each wetland crossing is complete.

1.3.1.13 Waterbody Construction

Milepost locations and specific crossing methods for each waterbody are indicated in **Table 1.3-3**. Detailed information regarding waterbodies is included in Resource Report 2.

TABLE 1.3-3
Waterbodies Crossed by the Project

Facility/ Waterbody ID	Milepost Enter	Milepost Exit	Pipeline Crossing Length (feet)	Crossing Method
18-inch Mainline Abandonment				
Stormwater Canal (west of SR91)	889.69	889.70	40	Aerial Span Removal
Subtotal Waterbody Crossing Length for Abandonment			**40**	
Existing Facilities Reconnections				
None			0	
Subtotal Waterbody Crossing Length for Reconnections			**0**	
24-inch Mainline Installation				
South New River Canal	883.45	883.46	74	HDD
Stormwater Pond	883.98	884.04	308	HDD
Unnamed Canal	884.14R	884.14R	42	HDD
Unnamed Canal	884.20R	884.21R	21	HDD

20180613-5062 FERC PDF (Unofficial) 6/13/2018 12:15:55 PM

TABLE 1.3-3

Waterbodies Crossed by the Project

Facility/ Waterbody ID	Milepost Enter	Milepost Exit	Pipeline Crossing Length (feet)	Crossing Method
Unnamed Canal	884.72R	884.73R	37	HDD
Unnamed Pond	885.10R	885.11R	53	Open Cut
Unnamed Canal	885.48R	885.49R	53	HDD
Unnamed Canal	885.74R	885.74R	16	HDD
Wolf Lake	886.09R	886.16R	370	HDD
Unnamed Canal	886.23R	886.23R	32	HDD
Unnamed Pond	886.64R	886.67R	180	HDD
Unnamed Canal	889.23R	889.24R	48	HDD
Unnamed Canal	890.35R	890.37R	95	HDD
Stormwater Pond	891.42R	891.43R	58	HDD
Stormwater Pond	892.90R	892.92R	116	HDD
Canal	893.94R	893.96R	106	HDD
C-9 Canal	894.04R	894.06R	111	HDD
Stormwater Pond	894.15R	894.15R	46	Offline
Snake Creek Canal	894.60R	894.61R	69	HDD
Snake Creek Canal?	896.72R	896.74R	90	HDD
C-8 Canal	897.15R	897.16R	90	HDD
Stormwater Pond	897.70R	897.72R	74	HDD
Unnamed Pond	898.03R	898.07R	211	HDD
Canal	898.30R	898.31R	58	HDD
Subtotal Waterbody Crossing Length for 24-inch Mainline Installation			**2358**	
Total Waterbody Crossing Length for Project			**2398**	

1.3.2 Aboveground Appurtenances

FGT will construct aboveground facilities in upland areas within the proposed 50-foot-wide permanent ROW. FGT will fabricate valve assemblies and lower them into the trench and weld into the pipeline prior to hydrostatically testing the pipeline. FGT will install and maintain a gravel pad and chain-link-fence enclosure around each valve and install permanent access roads.

1.4 Operation and Maintenance

FGT will operate and maintain the pipeline facilities in compliance with DOT regulations, as outlined in 49 CFR 192, and maintenance provisions of the FERC Plan and FERC Procedures. Operational activity on the pipeline will be primarily limited to necessary vegetation maintenance of the permanent ROW and inspection, repair, and cleaning of the pipeline itself. Vegetation on the permanent ROW will be maintained by mowing, cutting, and trimming as necessary and in accordance with the FERC Plan and Procedures and relevant landowner/other lease holder agreements. Periodic aerial and ground inspections by pipeline personnel will be conducted to identify soil erosion that may expose the pipe, dead or stressed vegetation that may indicate a leak in the line, conditions of the vegetative cover and erosion control measures, unauthorized encroachment on the ROW, and other conditions that could present a potential safety hazard or require preventative maintenance or repairs. The pipeline cathodic protection system and AC mitigation system will be monitored and inspected for proper and adequate corrosion protection. Actions in response to conditions observed during inspection will be taken as necessary.

20180613-5062 FERC PDF (Unofficial) 6/13/2018 12:15:55 PM

The pipeline facilities will be clearly marked at line-of-sight intervals, at crossings of roads and other key points. The markers will clearly indicate the presence of the pipeline and provide a telephone number and address where a company representative can be reached in the event of an emergency or prior to any excavation in the area of the pipeline by a third party. FGT participates in all "One-Call" systems.

1.5 Future Plans and Abandonment

FGT has no foreseeable plans for modification of the facilities described in this Environmental Report. At the end of the useful life of the pipeline, FGT will obtain the necessary permissions to abandon its facilities in accordance with FGT's easement or permit requirements.

1.6 Permits and Approvals

FGT has identified the applicable Federal, Federal Delegated State, State, and County environmental permits, clearances, and licenses required for the Project. These are identified in **Table 1.6-1**.

TABLE 1.6-1

Environmental Permits, Approvals, and Consultations

Agency	Permit/Approval/Consultation	Submittal Date (Anticipated)	Approval Date (Anticipated)
Federal Authority			
Federal Energy Regulatory Commission	Certificate of Public Convenience and Necessity under Sections 7(b) & 7(c) of the NGA	3rd Quarter 2018	3rd Quarter 2019
U.S. Army Corps of Engineers	Section 404 Clean Water Act, Joint Application for Environmental Resource Permit / Authorization to Use Sovereign Submerged Lands / Federal Dredge and Fill Permit	2nd Quarter 2019	3rd Quarter 2019
U.S. Army Corps of Engineers	Request to Alter or Temporarily or Permanently Occupy or Use US Army Corp of Engineers Federally Authorized Civil Works Projects Pursuant to 33 USC Section 408	4th Quarter 2018	3rd Quarter 2019
U.S. Fish and Wildlife Service	Consultation under Section 7 of the Endangered Species Act, the Migratory Bird Treaty Act, and the Fish and Wildlife Coordination Act	2nd Quarter 2019	3rd Quarter 2019
National Marine Fisheries Service	Consultations under the Magnuson-Stevens Act, Endangered Species Act, and the Marine Mammal Protection Act	No Effect to Essential Fish Habitat	No Effect to Essential Fish Habitat
Federal Delegated State Authority			

20180613-5062 FERC PDF (Unofficial) 6/13/2018 12:15:55 PM

TABLE 1.6-1

Environmental Permits, Approvals, and Consultations

Agency	Permit/Approval/Consultation	Submittal Date (Anticipated)	Approval Date (Anticipated)
Florida Department of Environmental Protection, State Clearing House	Section 403.061(42) of the Florida Administrative Code and Coastal Zone Consistency Determination – Included with Joint Application for Environmental Resource Permit / Authorization to Use Sovereign Submerged Lands / Federal Dredge and Fill Permit	2nd Quarter 2019	3rd Quarter 2019
Florida Division of Historical Resources	Consultation for cultural resources under Section 106 of the National Historic Preservation Act or state law	2nd Quarter 2019	3rd Quarter 2019
Florida Department of Environmental Protection	Section 401 Clean Water Act, Joint Application for Environmental Resource Permit / Authorization to Use Sovereign Submerged Lands / Federal Dredge and Fill Permit	2nd Quarter 2019	3rd Quarter 2019
Florida Department of Environmental Protection, Wastewater Program	Hydrostatic Test Discharge permit - National Pollutant Discharge Elimination System – Verification of Exemption or Individual Permit	60 days prior to discharge	30 days prior to discharge
State Authority			
Florida Fish and Wildlife Conservation Commission	Consultations under Chapter 379.2291 of Florida Statutes: Endangered and Threatened Species Act	2nd Quarter 2019	3rd Quarter 2019
Florida Fish and Wildlife Conservation Commission	Temporary Exclusion or Conservation Permit for Relocation of Gopher Tortoises	2nd Quarter 2019	3rd Quarter 2019
South Florida Water Management District	Master Dewatering Permit for short term construction dewatering	2nd Quarter 2019	3rd Quarter 2019
County Authority			
Broward County, FL Division of Environmental Protection and Growth Management (BCEPGM)	Environmental Resource License for Aquatic and Wetland Resources	3rd Quarter 2019	3rd Quarter 2019

20180613-5062 FERC PDF (Unofficial) 6/13/2018 12:15:55 PM

TABLE 1.6-1

Environmental Permits, Approvals, and Consultations

Agency	Permit/Approval/Consultation	Submittal Date (Anticipated)	Approval Date (Anticipated)
	Development and Environmental Review Approval - Dewatering	3rd Quarter 2019	3rd Quarter 2019
Miami-Dade County, FL Department of Regulatory and Economic Resources, Department of Environmental Resources Management (DERM)	Class IV Permit – Work in Freshwater Wetlands	3rd Quarter 2019	3rd Quarter 2019
	Class V Permit – Temporary Dewatering	3rd Quarter 2019	3rd Quarter 2019

1.7 Affected Landowners, Governments and Agencies

FGT will comply with 18 CFR Section 157.6(d) regarding notification to landowners, local governments and regulatory agencies pursuant to Orders 609 and 609-A with the required landowner notification. A list of landowners' names and addresses along with agency contact names and addresses is included under separate cover as privileged and confidential information with this application (**Appendix 1-D**).

1.8 Non-Jurisdictional Facilities

No non-jurisdictional facilities are associated with the proposed Project.

1.9 Cumulative Effects

Pending analysis and consultation

20180613-5062 FERC PDF (Unofficial) 6/13/2018 12:15:55 PM

PUBLIC

Florida Gas Transmission Company

An Energy Transfer/Kinder Morgan Affiliate

TURNPIKE-PALMETTO ROAD RELOCATION PROJECT
DOCKET NO. PF18-5-000

PRE-FILING SUPPLEMENTAL INFORMATION

18 CFR §157.21(f)(5)

DRAFT RESOURCE REPORT NO. 10

20180613-5062 FERC PDF (Unofficial) 6/13/2018 12:15:55 PM

FLORIDA GAS TRANSMISSION COMPANY, LLC

Turnpike-Palmetto Road Relocation Project

DRAFT

RESOURCE REPORT NO. 10

Alternatives

June 7, 2018

Florida Gas Transmission Company
An Energy Transfer/Kinder Morgan Affiliate

20180613-5062 FERC PDF (Unofficial) 6/13/2018 12:15:55 PM

MINIMUM FILING REQUIREMENTS	
INFORMATION	**Location in Environmental Report**
1. Address the "no action" alternative – Title 18 Code of Federal Regulations (CFR) part (§) 380.12(1)(1)	Section 10.1
2. For large projects, address the effect of energy conservation or energy alternatives to the project - 18 CFR § 380.12(1)(1)	Section 10.2 Section 10.3
3. Identify system alternatives considered during the identification of the project and provide the rationale for rejecting each alternative - 18 CFR § 380.12(1)(1)	Section 10.4
4. Identify major and minor route alternatives considered to avoid impact on sensitive environmental areas (e.g., wetlands, parks, or residences) and provide sufficient comparative data to justify the selection of the proposed route – 18 CFR § 380.12(1)(2)(ii)	Section 10.4
5. Identify alternative sites considered for the location of major new aboveground facilities and provide sufficient comparative data to justify the selection of the proposed site – 18 CFR § 380.12(1)(2)(ii)	Not Applicable No major new aboveground facilities

20180613-5062 FERC PDF (Unofficial) 6/13/2018 12:15:55 PM

RESOURCE REPORT NO. 10
ALTERNATIVES

TABLE OF CONTENTS

LIST OF TABLES

20180613-5062 FERC PDF (Unofficial) 6/13/2018 12:15:55 PM

LIST OF ENVIRONMENTAL REPORT APPENDICES

20180613-5062 FERC PDF (Unofficial) 6/13/2018 12:15:55 PM

ABBREVIATIONS AND ACRONYMS

FDOT	Florida Department of Transportation
FERC	Federal Energy Regulatory Commission
FGT	Florida Gas Transmission Company, LLC
FTE	Florida Turnpike Enterprise
mi	Mile or Miles
MP	Milepost
MSE	Mechanically Stabilized Earth
NWI	National Wetlands Inventory
Project	FGT Turnpike-Palmetto Road Relocation Project
ROW	Right-of-way

20180613-5062 FERC PDF (Unofficial) 6/13/2018 12:15:55 PM

10.0 General Project Description

See Project Description in Resource Report No. 1 for more details on the Project.

Resource Report No. 10 addresses the viable alternatives analyses undertaken for the Project. Alternatives to the proposed Project can be classified into five major categories: the no-action alternative, energy conservation, energy alternatives, system alternatives, and route alternatives. This report discusses the potential for each alternative to meet Project needs taking into account FDOT/FTE requirements for road projects, landowner(s), the environment, technical feasibility, schedule, and cost.

10.1 No-Action Alternative

Affected portions of FGT's existing 18-inch pipeline are in direct conflict with FDOT's/FTE's planned improvements to the Florida's Turnpike (SR91) and the Palmetto Expressway (SR826). If FGT does not relocate its affected facilities, portions of its existing 18-inch mainline facilities and associated appurtenances would be under pavement and entombed within MSE walls making operation and maintenance of the pipeline facilities infeasible.

10.2 Energy Conservation

Energy conservation would not provide viable alternatives to the proposed Project.

10.3 Energy Alternatives

There are no viable energy alternatives applicable to the proposed Project.

10.4 System Alternatives

There are no viable system alternatives to the proposed Project. FGT has conducted extensive system hydraulic modeling based on the current volume and pressure requirements to deliver gas to the area south of Compressor Station 21.5 and has determined that an 18-inch pipe replacement that separates a new 18-inch pipe away from the existing 24-inch pipe will not maintain adequate system reliability. The proposed route reduces the existing 18-inch pipeline length by approximately 3.7 miles, which significantly reduces the line pack needed to meet the existing firm transportation requirements. In addition, separating the 18-inch and 24-inch mainlines at different locations prevents the transfer of gas from one mainline to the other mainline through associated crossover piping at both mainline valve settings as well as at City Gate Stations. Crossover piping allows transfer of gas from one pipeline to the other that provides the ability to remove/repair sections of pipeline for maintenance without reducing large amounts of throughput. Separating the 18-inch and 24-inch mainlines without the crossover capability will significantly reduce the system capacity during an outage. Based on an outage of the existing 24-inch mainline, modeling determined that an 18-inch mainline relocation would not meet the contracted volume and pressure requirements for the south Florida market area. In order to maintain the existing volume and pressure requirements of a nonparallel pipeline design the 18-inch mainline would require replacement with 24-inch pipe. The replacement 24-inch mainline will not increase overall system capacity but would allow the flow, line pack and pressure requirements to be met as they currently exist.

10.5 Route Alternatives

FGT evaluated three potential route alternatives for relocating abandoned facilities that would address the direct conflicts generated by the planned road widening / expansion plans for both the FDOT and the FTE.

20180613-5062 FERC PDF (Unofficial) 6/13/2018 12:15:55 PM

Relocating the affected facilities out of FDOT/FTE ROW to avoid future conflicts with road expansions and improvements was a primary consideration during FGT's evaluation of potential pipeline routes. Other key factors for consideration included:

- Relocating pipeline facilities into areas that would avoid future conflicts with FDOT and FTE road improvements;
- Maintaining current connections to customer supply points on the existing 18-inch mainline;
- Adequate open unencumbered space to construct and operate the proposed pipeline facilities;
- Minimizing potential impacts to new landowners and existing structures;
- Minimizing potential impacts to environmental resources;
- Cost of new ROW, and
- Cost of construction.

Summaries of primary factors are shown in **Table 10.5-1**. Each alternative is described below and shown on overview maps and imagery in **Appendix 10-A**.

TABLE 10.5-1

Alternatives Environmental Analysis Factors

Alternative	Length (mi)	Collocated with Existing Utilities / Rights-of-Way (%)	Number of Structures Directly Impacted [a]	Wetland / Waterbody Crossings (feet) [b]	Potential T&E Species [c]	Potential Cultural Resources Within APE [d]	Known Contaminated Sites Within 0.25 mile [e]
1	27.7	100	1	35,438	15	16	44
2	15.4	100	0	5,142	15	15	20
3	19.6	100	252	2,423	15	317	219

[a] Analysis for the number of structures directly impacted by Alternative 3 is based on centerline intersect with existing structures only. Addition of workspace required to construct Alternative 3 (construction ROW and ATWS) would impact significantly more structures.
[b] Wetland and waterbody crossing footages for Alternative 1 and Alternative 3 are based on desktop analysis of NWI data and aerial interpretation. Wetland and waterbody crossing footage for Alterative 2 (Preferred Alternative) is based on field survey data.
[c] Threatened and Endangered species with the potential to occur in the Project area obtained from public databases maintained by U.S. Fish and Wildlife Service and Florida Fish and Wildlife Conservation Commission.
[d] Potential cultural resources determined via desktop analyses of Florida Division of Historical Resources' Florida Master Site File.
[e] Known contaminated sites within 0.25-mile of centerline for each Alternative based on publicly available information from federal, state and county agency databases.

10.5.1 Alternative One

Based on limited availability of potential new ROW, Alternative One and Alternative Two follow the same route for the first approximately 11.1 miles along an existing utility corridor, diverging at MP 894.1R.

Alternative One begins at MP 883.0 north of Griffin Road in Broward County, Florida and parallels the east side of SR91, within FTE ROW, southward to MP 884.2. At MP 884.2, Alternative One crosses SR91 to the west, leaving FTE ROW, and follows an existing utility corridor west for approximately 2.5 miles to

20180613-5062 FERC PDF (Unofficial) 6/13/2018 12:15:55 PM

MP 886.7R. At MP 886.7R, Alternative One turns south, in the western edge of the existing utility corridor, for approximately 0.7 miles to MP 887.4R. At MP 887.4R, Alternative One follows the existing utility corridor to the south side of the C-9 canal at MP 894.1 and then turns west and parallels the canal for approximately 1.3 miles until Alternative One crosses the Homestead Extension of Florida's Turnpike (SR 821). From that point, Alternative One follows the west side of SR 821 southwest and south for approximately 7.2 miles before crossing back across SR 821 and proceeding south along the east side of SR 821 for approximately 0.6 miles. From there, Alternative One then turns east at NW 106th St. and follows on the north side for approximately 1.0 mile before turning south along an existing utility corridor for approximately 2.9 miles. Alternative One then turns east along an existing utility corridor for approximately 3.5 miles before crossing NW 72nd Ave. After crossing NW 72nd Ave, Alternative One turns north along the powerline for approximately 0.1 mile to the terminus at FGT's existing Compressor Station 22 in Miami-Dade County, FL.

10.5.2 Alternative Two (Preferred Alternative)

Alternative Two begins at MP 883.0 north of Griffin Road in Broward County, Florida and parallels the east side of SR91, within FTE ROW, southward to MP 884.2. At MP 884.2, Alternative Two crosses SR91 to the west, leaving FTE ROW, and follows an existing utility corridor west for approximately 2.5 miles to MP 886.7R. At MP 886.7R, Alternative Two turns south, in the western edge of an existing utility corridor, for approximately 0.7 miles to MP 887.4R. At MP 887.4R, Alternative Two follows an existing utility corridor to the southwest for approximately 9.4 miles to 896.8R. At MP 896.8R, Alternative Two follows an existing utility corridor and turns south and crosses the SR826 and rejoins FGT's existing 18-inch mainline ROW at MP 897R. Alternative Two parallels the east side of SR826, within an existing utility corridor to the terminus at MP 898.4R (MP 902.2 on the 18-inch mainline abandonment) in Miami-Dade County, Florida.

10.5.3 Alternative Three

Alternative Three consists of constructing the replacement facilities adjacent to their current location along SR91 and SR826. FDOT would be required to obtain a new ROW just outside of existing FDOT/FTE ROW. Alternative Three begins at MP 883.0 north of Griffin Road in Broward County, Florida on the east side of Florida's Turnpike (SR91). Alternative Three parallels SR91southward for approximately 5.3 miles to MP 888.3. At MP 888.3, Alternative Three crosses SR91 and parallels the west side for approximately 5.4 miles to the intersection of SR91 and the Palmetto Expressway (SR826) at MP 893.7. At MP 893.7, Alternative Three turns west and parallels the south side of SR826 for approximately 7.1 miles to MP 901. At MP 901, the Alternative Three turns south, and parallels the east side of SR826 for approximately 1.2 miles to the end of the proposed replacement at MP 902.2 in Miami-Dade County, Florida.

10.6 Conclusions

FGT coordinated with FDOT and FTE to analyze conflicts with planned road improvements and to develop new potential pipeline routes. Based on the factors shown in **Table 10.5-1**, FGT has selected Alternative Two as the preferred alternative.

Alternative Two (Preferred Alternative) provides the most viable option for relocation of FGT's facilities as it is the shortest potential route and minimizes potential impacts to landowners and environmental resources. Alternative Two is co-located with and/or within existing ROWs for the entire length of the relocation. These existing rights-of-way provide space for construction and operation of FGT's proposed new pipeline facilities and minimize the impact on existing residential or commercial structures.

20180613-5062 FERC PDF (Unofficial) 6/13/2018 12:15:55 PM

Alternative One is approximately 12.3 miles longer than Alternative Two, has approximately 6.1 miles more of wetland/waterbody crossing length and has more than twice as many known contaminated sites within 0.25 miles of the route. Alternative Three would impact over 250 existing residential and commercial structures, has approximately 317 known and potential cultural resources within the route's APE, and 199 more known contaminated sites within 0.25 miles of the route.

20180613-5062 FERC PDF (Unofficial) 6/13/2018 12:15:55 PM

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