3.0 ALTERNATIVES

In accordance with NEPA and Commission policy, we identified and evaluated alternatives to the Cypress Pipeline Project and FGT Expansion Project to determine whether they would be reasonable and environmentally preferable to the proposed actions. These alternatives include the no action or postponed action alternatives, system alternatives, major route alternatives, route variations, and aboveground facility site alternatives. In general, these alternatives are analyzed separately for the Cypress Pipeline and FGT Expansion Projects in the following subsections, except where the findings of the analysis are common to both projects (i.e., no action alternative).

The evaluation criteria for selecting potentially reasonable and environmentally preferable alternatives include whether they:

- are technically and economically feasible, reasonable, and practical;
- offer significant environmental advantage over the proposed project; and
- meet the project objectives of adding pipeline infrastructure in south Georgia and north Florida to support the increased utilization of imported LNG from Elba Island as a source of gas supply in the Southeast.

The evaluation of the no action or postponed action alternatives primarily addresses the effects and actions that may result if the proposed Southern and FGT project facilities are not approved or a decision regarding their approval is delayed.

System alternatives are evaluated in this EIS to determine if either project could make use of other existing, modified, or proposed pipeline systems to meet the stated project objectives. The purpose of identifying and evaluating system alternatives is to determine whether potential environmental impacts associated with the construction and operation of the proposed facilities could be avoided or reduced while still meeting the stated objectives of the project. A system alternative would make it unnecessary to construct all or part of a proposed project, although some modifications or additions to other existing systems may be required to increase capacity, or another entirely new system may need to be constructed. Such modifications or additions could result in environmental impacts; however, the impacts could be less than, similar to, or greater than those associated with construction of the proposed projects.

Route alternatives are identified to determine if impacts could be avoided or reduced on environmentally sensitive resources, such as population areas, scenic areas, and wildlife and natural habitat management areas that would be crossed by the proposed pipeline. While the origin and delivery points of route alternatives are generally the same as the corresponding segment of a proposed pipeline, the route alternatives could follow significantly different alignments. Route alternatives would not modify or make use of an existing or modified pipeline system as would a system alternative.

Route variations differ from system alternatives and route alternatives, and are similar to aboveground facility site alternatives, in that they are identified to reduce impact on specific localized resources or issues, including residences, commercial/industrial development areas, wetland mitigation areas, and protected species habitat.

The development and analysis of alternatives were shaped by the public and agency interactions that occurred during the scoping portion of the FERC's Pre-Filing process. The analysis of alternatives is based on information provided by Southern and FGT, aerial photographs, U.S. Geological Survey (USGS) topographic maps, National Wetlands Inventory (NWI) maps, and other publicly available

information, pipeline system maps, and agency consultations. The results of the alternatives analyses and our recommendations regarding environmentally preferable alternatives are provided in the following sections.

3.1 NO ACTION OR POSTPONED ACTION ALTERNATIVE

The FERC has three alternative courses of action in processing an application for a Certificate: (1) grant the Certificate with or without conditions; (2) deny the Certificate; or (3) postpone action pending further study.

If the FERC denies or postpones the proposed action, the environmental impacts identified in this EIS would not occur. In addition, should the FERC select the no action alternative, the stated objectives of the Southern and FGT proposals would not be met. The new supply source of natural gas from the Elba Island LNG Terminal would not be made available and the proposed service areas would not have access to the natural gas supplies. Under these scenarios, the existing natural gas transportation systems in Georgia and Florida would continue to provide natural gas service to this region and the project customers would likely seek natural gas from other sources. To increase capacity or to provide a new source of natural gas, additional and/or new gas pipeline facilities may need to be constructed in other locations (system alternatives) to transport natural gas supplies. If other new natural gas pipeline facilities are approved and constructed, each project would result in specific environmental impacts that could be less than, similar to, or greater than the current proposals. We have included an analysis of system alternatives in section 3.2.

Denying or postponing a decision on Southern's and FGT's applications could limit access to new supplies of natural gas in the future, which could in turn contribute to higher natural gas prices. Higher prices could potentially result in customers conserving or reducing the use of natural gas.

Conservation

During the public scoping for the Cypress Pipeline Project, one commentor asked that we compare the cost of the project, including costs for easements and mitigation, to the benefits that could be realized if a similar level of investment were put into energy conservation and efficiency improvements. It is reasonable to assume that reductions in demand for gas supplies could occur through greater conservation efforts and increased efficiencies in the equipment that utilizes gas supplies. Moreover, there is little doubt that increased efficiency will have an important role to play in the future energy needs of the southeast region.

A 2003 report by the American Council for an Energy Efficient Economy (ACEEE) analyzed projected energy demands in the lower 48 states. The ACEEE reviewed the national and regional relationship between Natural Gas Price Effects of Energy Efficiency and Renewable Energy Practices and Policies (ACEEE, 2003). The report concluded that energy efficiency and renewable energy measures (discussed further below) could reduce natural gas consumption. However, the study also recognized that energy efficiency and renewable energy are not the only policy solutions required to address the future natural gas needs of the United States and that additional sources of natural gas will be required either from domestic sources or through the importation of gas in the form of LNG. Furthermore, the capital investment required for these efforts has not been offered by the project sponsors and it is not reasonable to assume that they would provide such investments or that other private or public entities would provide such investments at a level that would eliminate the demand for this gas in the timeframe proposed by these projects. Therefore, we eliminated energy conservation alternatives from further consideration.

Other Sources of Energy

Denying or postponing a decision on Southern's and FGT's applications could also force potential customers of the natural gas provided by the projects to seek regulatory approval to use other forms of energy. These other forms might include renewable sources of energy, nuclear power, or other fossil fuels.

Renewable energy sources, including wind, hydropower, municipal solid wastes, wood and other biomass, and solar, are projected to have some role in meeting the country's future energy needs. The U.S. Department of Energy (DOE), EIA estimates that in 2005 energy consumption in the South Atlantic[1] from renewable sources such as hydroelectric, geothermal, wood and wood waste, municipal solid waste, other biomass, wind, ethanol, photovoltaic, and solar thermal sources will account for about 5 percent of the region's total energy consumption as compared to estimates of 13 percent from natural gas, 41 percent from petroleum, 28 percent from coal, and 13 percent from nuclear power. The DOE/EIA also predicts that consumption of renewable energy will increase by 1.4 percent a year between 2003 and 2025. The DOE/EIA predicts that natural gas consumption will increase over the same period by 2.1 percent per year, that consumption of petroleum and coal will increase by 1.7 and 1.1 percent per year, respectively, and that there will be a 0.3 percent increase in consumption of energy from nuclear power (EIA 2005). In addition, each of these alternative forms of energy involves significant environmental issues such as disposal of toxic materials, alterations to hydrological/biological systems, and/or visual impacts.

The use of renewable energy sources as an alternative to the proposed projects could help reduce natural gas use but solar, wind, hydroelectric, and other energy sources such as geothermal or fuel cells are either not physically or commercially available in the market region or have not been developed to the point where they would be viable substitutes for natural gas. The DOE/EIA study, which considers renewable energy as well as other energy sources, supports this conclusion and suggests that renewable energies such as hydroelectric, wind, or solar, while important to the overall mix of available energy sources, will not replace the demand for natural gas over the next 20 years (EIA, 2005). The additional natural gas infrastructure provided by the proposed projects together with increased availability of imported natural gas in the form of LNG could also delay the projected incremental increases of renewable energies.

Denying or postponing the applications could force potential customers of the natural gas to seek regulatory approval to use alternative fuels and/or, as necessary, construct new facilities or modify existing facilities to accommodate alternative fuels. Alternative energy sources such as coal, oil, or nuclear power could be used to meet increasing energy needs in the service areas. The use of coal and oil as alternative energy sources would result in higher emissions of air pollutants, including nitrogen oxides (NO_x) and sulfur dioxide (SO_2). Compared to other fossil fuels, natural gas is relatively clean and efficient fuel with minimal emissions of air pollutants. Nuclear power results in the generation of radioactive waste products that have long-term disposal issues. If alternative energy sources were used in place of natural gas, it would result in other specific environmental impacts that could be less than, similar to, or greater than those associated with the current proposals.

It is difficult to determine the impact of the proposed project on greenhouse gas (GHG) emissions; however, credible estimates of GHG impacts can be developed based upon reasonable assumptions regarding the use of the natural gas delivered by the pipeline and what energy resources would likely be used if the gas from the pipeline was not available. The Cypress Pipeline Project and FGT Expansion Project would provide 500 MMcfd of new firm capacity to generating plants and other end users in Georgia and Florida. Burning this volume of natural gas would produce about 2.5 million

[1] The South Atlantic region includes the states of Florida, Georgia, South Carolina, North Carolina, Virginia, West Virginia, Maryland, and Delaware.

metric tons (MMT) of carbon per year and 9.17 MMT of carbon dioxide per year. If the proposed 500 MMcfd were replaced with other fossil fuels, GHG emissions could potentially increase 45 to 90 percent, depending on the assumptions made in the analysis, to between 3.63 and 4.75 MMT of carbon per year, and to between 13.29 and 17.42 MMT of carbon dioxide per year for fuel oil and coal, respectively. Conversely, if renewable or nuclear energy sources are used instead of some portion of the proposed volumes of natural gas, then the GHG emissions and associated levels of carbon would likely be less than 9.17 MMT and 2.5 MMT, respectively. This analysis only evaluates the potential change in GHG emissions for the ultimate end user of the natural gas volumes associated with this project. GHG emissions are also related to the production, processing, transmission, and distribution of natural gas as well as for the alternative fossil fuels.

3.2 SYSTEM ALTERNATIVES

For the purpose of analyzing system alternatives, we evaluated potential impacts associated with using other gas suppliers to transport an equivalent volume of gas from the Elba Island LNG Terminal facility to the Cypress/FGT Interconnect in Clay County, Florida for the Cypress Pipeline Project, and from the Cypress/FGT Interconnect to the Progress Energy facility in Polk County, Florida, for the FGT Expansion Project. The existing interstate pipeline systems in the vicinity of the southeastern U.S. generally transport natural gas from the Gulf of Mexico to markets throughout the eastern United States and Florida. Southern's existing pipeline system extends generally from Louisiana to South Carolina, and has numerous laterals that move gas from the Gulf northward and eastward to Mississippi, Alabama, Tennessee, Georgia, and South Carolina. Southern also receives imported gas at the Elba Island LNG Terminal and transports it generally northward. Other existing natural gas systems include those operated by FGT, Atlanta Gas, and South Georgia. FGT has a large pipeline system that runs from Louisiana to Florida and is currently the principal provider of natural gas to Florida. South Georgia and Atlanta Gas have pipeline laterals that receive gas from Southern's pipeline system. The South Georgia system interconnects with two 12-inch-diameter pipelines in Lee County, Alabama, and delivers gas into southwestern Georgia and northern Florida. The Atlanta Gas Pipeline interconnects with a 12-inch-diameter pipeline in Jones County, Georgia, and delivers gas to the Brunswick, Georgia area. The general locations of these pipeline systems are shown on figure 3.2.1-1.

None of the existing facilities have the capacity to deliver the large volumes of gas (i.e., 200-500 MMcfd) that would be delivered by the proposed project through the Elba Island LNG terminal. Additionally, no other new pipeline systems are planned that could also potentially meet the objectives of the Cypress Pipeline Project. A system alternative involving looping and increased compression of the existing pipeline systems would not provide a direct and efficient route for transporting the large volumes of gas (i.e., 200-500 MMcfd) from the Elba Island LNG Terminal to the service areas in southeastern Georgia and Florida. Instead, the gas would need to be transported a significantly greater distance. Additionally, such a system alternative would require construction of substantial new pipeline facilities, which would result in greater land disturbance, environmental impacts, and construction costs than the proposed project.

Southern currently operates two parallel 13.3-mile-long, 30-inch-diameter pipelines (called the Twin 30s pipeline system) that extend from the Elba Island LNG Terminal to the proposed loop interconnection at the Port Wentworth Meter Station in Port Wentworth, Georgia. Southern would make use of the Twin 30s and its existing Wrens-Savannah pipeline system to move gas from the Elba Island LNG Terminal to the Rincon Gate Meter Station in Effingham County, Georgia. The proposed 9.8 mile loop would also move the gas from the Port Wentworth Meter Station to the Rincon Gate Meter Station by following Southern's existing Wrens-Savannah pipeline system. The proposed pipeline facilities and the proposed use of both the Wrens-Savannah and Twin 30s systems would provide Southern's shippers a direct seamless connection to the Elba Island LNG Terminal, without the construction of duplicative facilities between Elba Island and Port Wentworth.

Non-Internet Public

FINAL ENVIRONMENTAL IMPACT STATEMENT FOR THE
PROPOSED CYPRESS PIPELINE PROJECT and
PHASE VII EXPANSION PROJECT
Docket Nos. CP05-388-000 and CP06-001-000

Figure 3.2.1-1 Cypress Pipeline Project – Pipeline System Alternatives

Public access for the above information is available only through the Public Reference Room, or by e-mail at public.referenceroom@ferc.gov.

Expansion of other pipeline systems by construction of a new pipeline between the Elba Island LNG Terminal facility and the Cypress/FGT Interconnect in Clay County, Florida would follow approximately the same corridor route as Southern and would probably have slightly greater impacts than the proposed project. This is because the approximately 23 miles of existing pipeline system and right-of-way Southern proposes to use between the Elba Island LNG Terminal facility and Southern's Rincon Gate Meter Station in Effingham County, Georgia would not be available to another company. Additionally, since the segment of Southern's existing pipeline passes through congested urban areas and crosses significant environmental features including the Savannah River and Savannah National Wildlife Refuge, other pipeline systems would have to construct new facilities through these areas. Therefore, we do not consider the use of other pipelines systems to be viable alternative to the Cypress Pipeline Project.

In the vicinity of the proposed FGT Expansion Project, there are no alternative pipeline systems that could move the gas between the Cypress/FGT Interconnect in Clay County, Florida, and the Progress Energy facility in Polk County, Florida. The proposed looping and compression appears to maximize use of FGT's existing facilities and would minimize construction of new facilities. For example, if FGT were not to include its proposed increases in compression, about 51.6 miles of additional pipeline would need to be constructed to meet the project needs. FGT could also increase the total amount of additional compression to 29,900 hp to reduce the amount of new pipeline to about 11.0 miles, but this would reduce system reliability due to downtime for maintenance and repairs, and could result in increased noise and emissions. Finally, if FGT were to install larger diameter pipe, only a minor reduction in the total length (about 2 miles) would be realized, and greater construction right-of-way would be required. Therefore, no system alternatives to FGT's proposed project are considered preferable.

During public scoping, one commentor suggested that a new LNG facility could be constructed in the Jacksonville area to eliminate the need for a new pipeline through southeastern Georgia. However, a new LNG facility would require a pipeline, including a pipeline in southern Georgia, to transport the vaporized gas to the proposed service areas. In addition, the timeframe for designing, permitting, and constructing a new LNG facility would be much longer than the proposed Cypress Pipeline Project. Suitable LNG facility sites near Jacksonville have not been identified nor have there been proposals for new LNG facilities in Jacksonville that could be in-service on a timeframe that would meet the in-service requirements of this project. Three projects are currently under review by the Commission that could potentially bring LNG gas from the Bahamas into FGT's system, including the AES-Ocean Express Pipeline, Tractebel Calypso Pipeline, and El Paso's Seafarer Pipeline Projects. However, none of these projects are currently under construction and would be a minimum of three to five years from potential in-service (if approved). Similar to a new LNG facility near Jacksonville, these projects could not be in-service on a timeframe that would meet the in-service requirements of Southern's proposed project. In addition, constructing a LNG facility and associated pipeline in the Jacksonville area would also be much more costly than using an existing LNG facility. A new LNG facility would also likely result in considerable environmental impacts that would be greater than those associated with the current proposal. Therefore, construction of a new LNG facility in Jacksonville is not considered a viable alternative to the proposed Cypress Pipeline Project.

3.3 CYPRESS PIPELINE PROJECT ROUTE AND FACILITY SITE ALTERNATIVES

3.3.1 Route Alternatives

We analyzed two major route alternatives to the project that are substantially different from the proposed route and each other. One is located onshore and primarily follows the abandoned Seaboard Coastline Railroad corridor. The other is located offshore in the Atlantic Ocean. The locations of these alternatives are shown on figure 3.3.1-1 and a comparison of environmental factors evaluated for each major route alternative is provided in table 3.3.1-1.

Non-Internet Public

FINAL ENVIRONMENTAL IMPACT STATEMENT FOR THE
PROPOSED CYPRESS PIPELINE PROJECT and
PHASE VII EXPANSION PROJECT
Docket Nos. CP05-388-000 and CP06-001-000

Figure 3.3.1-1 Cypress Pipeline Project – Route Alternatives

Public access for the above information is available only through the Public Reference Room, or by e-mail at public.referenceroom@ferc.gov.

TABLE 3.3.1-1

Environmental Comparison of Major Route Alternatives to the Proposed Route

Environmental Factor	Unit	Proposed Route (includes loop and lateral) [a]	Seaboard Coastline Alternative [b]	Offshore Alternative [b]
Total Length	Miles	176.5	155.1	194.9
Percentage parallel to or within existing rights-of-way	Percent	95	80	11.9
Major waterbody crossings	Number	7	7	3
Minor waterbody crossings	Number	99	92	30
Riverine/Open Water/Other	Miles	0.8	2.5	143.6 [c]
Freshwater Wetlands	Miles	68.4	47.7	22.4
Estuarine Wetlands	Miles	0.0	3.5	7.2
Public lands crossed [d]	Miles	10.9	8.4	128.3 [e]
Municipalities crossed	Number	1	9	0
	(Miles)	(4.5)	(18.0)	
Residential areas crossed [f]	Miles	0.1	7.4	3.8

[a] Includes impacts quantified through field surveys conducted August 2000 through January 2001 and January-March 2005 implementing Global Positioning Systems (GPS) data with 3 meter resolution.

[b] Impacts quantified through Geographic Information Systems (GIS) analysis of National Wetland Inventory Maps, Land Cover Classification of Georgia by County 1988-1990, and Florida Landuse-Land Cover-1995-Saint Johns River Water Management District.

[c] Open water numbers for the Offshore Alternative include the portion within the Atlantic Ocean.

[d] Includes federal, state, and county lands.

[e] Includes federal waters under the ownership of the Minerals Management Service.

[f] High and low density urban areas.

Seaboard Coastline Alternative

We evaluated the Seaboard Coastline route as a potential alternative that primarily follows existing corridors between Savannah and Jacksonville, similar to the proposed route. The Seaboard Coastline Alternative is more direct and would be about 21.4 miles shorter in length than the proposed route. The Seaboard Coastline route would begin at the Port Wentworth Meter Station site where the Phase III pipeline segment (9.8-mile-long loop) for the proposed project begins, and would be generally located slightly east of the proposed route, closer to the coastline and mostly between Interstate 95 and the proposed mainline route.

The primary advantage of the Seaboard Coastline Alternative is that it is shorter, and thus would disturb less land and result in less clearing of forested land than the proposed route, which could potentially minimize environmental impacts. This alternative crosses slightly fewer minor waterbodies and freshwater wetlands, and slightly less public lands. The Seaboard Coastline Alternative is adjacent to or within existing railroad or electric transmission line rights-of-way for about 124 miles or 80 percent of its length, but this percentage is less than the proposed route, which follows existing corridors for about 95 percent of its length.

In other respects, the Seaboard Coastline Alternative also appears inferior to the proposed route. Although the Seaboard Coastline route crosses the same major waterbodies as the proposed route, the crossing locations are closer to the coastline and thus the crossing widths would generally be greater, which would increase the difficulty of construction. This factor generally offsets any environmental

advantage the alternative may have with respect to fewer minor waterbody crossings. In addition, the alternative crosses approximately 3.5 miles of estuarine wetlands that would be avoided by the proposed route. These estuarine habitats are generally considered higher value, and more sensitive habitats than the freshwater wetlands that would be crossed and receive special protection under the Coastal Marshlands Protection Act. We believe avoidance of construction through these estuarine wetland areas would be preferable even if it means that more freshwater wetland crossings would be required by the proposed route**.** Further, due to the location of the stream crossings being closer to the coast, as well as the number of estuarine wetlands that would be crossed by the Seaboard Coastline Alternative, we believe this alternative would adversely impact more essential fish habitat (EFH) and potentially marine mammals than the proposed route. This is because EFH is often associated with estuarine habitats, and the potential occurrence of marine mammals increases with proximity to saline waters.

The Seaboard Coastline Alternative also crosses more developed and congested land than the proposed route. The first several miles of the alternative route in Chatham County would require new right-of-way through a highly congested and populated area that has several potential conflicts including the Savannah Airport Authority's expansion plans, a subdivision, and a golf course. In addition, as the alternative route continues south along the Seaboard Coastline Railroad, it would pass through numerous towns including a total of nine incorporated municipalities (Port Wentworth, Savannah, Pooler, Georgetown, Richmond Hill, Midway, Riceboro, Woodbine, and Kingsland) compared to one for the proposed route (Port Wentworth). As a result, it is likely that a greater number of landowners could be impacted, and that the pipeline route would have a greater impact on local towns due to the difficulty of constructing in urban areas with limited workspace. The Seaboard Coastline route would cross approximately 7.4 miles of residential areas in the Savannah area and in the small communities along the railroad corridor compared to 0.1 mile of residential impact along the proposed route that is within Southern's existing permanent pipeline right-of-way.

We view the Seaboard Coastline route as a reasonable alternative due to its shorter length and significant amount of collocation adjacent to existing corridors, but do not consider it environmentally preferable to the proposed route. This is because the Seaboard Coastline route would involve a greater number of congested areas and potential conflicts with coastal communities resulting in engineering and construction difficulties. Moreover, although the proposed route would impact more freshwater wetlands and cross more minor waterbodies than the alternative, it would also avoid estuarine habitats, which have greater value, and would reduce the crossing width at major waterbodies. The proposed route also follows existing corridors for a greater percentage of its length than the alternative.

Offshore Alternative

An offshore alternative was evaluated to avoid the terrestrial impacts (e.g., land disturbance, residential impacts, etc.) associated with the proposed route and Seaboard Coastline Alternative. Due to the close proximity of the proposed natural gas supply point (i.e., Elba Island LNG Terminal) and final delivery point (i.e., FGT meter station) to the Atlantic Ocean, we evaluated an offshore route as a potential alternative to the proposed project. This alternative would minimize impacts on terrestrial resources but would have effects on sensitive marine environments within the Atlantic Ocean.

The Offshore Alternative begins at the Elba Island LNG Terminal and crosses the Savannah River to South Carolina. The route proceeds in an easterly direction to the coastline where it would go offshore north of Tybee Spit. Approximately 3 miles offshore, at the boundary between state and federal waters, the Offshore Alternative route turns and proceeds in a southwesterly direction, generally parallel to the Georgia and Florida coasts, for the majority of its length. The alternative route comes back on shore in Florida between Mickler Landing and South Ponte Vedra Beach. Once on shore, the alternative

proceeds in a westerly direction around the southern portion of Jacksonville, Florida and generally follows an existing transmission line corridor to the FGT Meter Station site, where it ends.

The Offshore Alternative reduces the length of onshore pipeline and would minimize land disturbance and the crossing of freshwater wetlands and streams. The overall length of the Offshore Alternative route, however, is about 18.4 miles longer than the proposed route. The alternative also crosses about 144 miles of the Atlantic Ocean. Because the water depths are less than 200 feet deep, the pipe along the entire Offshore Alternative pipeline would need to be buried beneath the sea floor. Trenching and installation of the pipe in the sea floor would result in impacts on the marine environment, including live-bottom areas[2] and an area referred to as the Georgia Embayment, which has been designated critical habitat for two federally endangered species; the West Indian Manatee and the Right Whale (Brooks, 2000). The Offshore Alternative route is also a common migration route for other species of whales (FMRI, 2000a). In addition, several federally endangered and threatened species of sea turtles are known to nest along the beaches in the area where the pipe would come to shore in Florida (FMRI, 2000b). Finally, approximately 7.2 miles of estuarine wetland habitat would be crossed by the alternative, which would be avoided by the proposed route.

The Offshore alternative route would have a primary delivery point near Jacksonville. However, because other areas in northern Florida and southern Georgia, including the Brunswick area, are to be served by this project, additional onshore pipeline laterals would need to be constructed to deliver gas to the same service areas as the proposed route. This system of laterals would result in additional environmental impacts.

For these reasons, we deemed the Offshore Alternative less environmentally preferable than the proposed route and eliminated it from further consideration.

3.3.2 Route Variations

During the routing analysis of the Cypress Pipeline Project, we evaluated several route variations including: a variation that follows the proposed route but would involve a greater amount of collocation[3] within, rather than adjacent to, existing powerline corridors; route variations in the northern portion of the proposed route, which is an area experiencing rapid growth and is the most developed portion of the project area; a variation near Fort Stewart Military Reservation (Fort Stewart); three variations recommended by the FWS; and one variation near the southern terminus of the pipeline. In addition, numerous minor reroutes of the proposed route were identified during initial planning efforts by Southern and have been incorporated into the proposed action by Southern in an effort to minimize impacts to landowners and existing resources that were identified along the proposed route. These route variations and minor reroutes are discussed in the following subsections.

3.3.2.1 Collocation Variation

To minimize environmental and landowner impacts, most of the proposed pipeline route (95 percent) along Southern's proposed route would be located adjacent to existing utility corridors between Port Wentworth, Georgia and the project terminus in Clay County, Florida. Southern's proposed construction rights-of-way overlap the existing rights-of-way by as much as 35 feet. This overlap would significantly reduce the impact on the environment and landowners. The EPA suggested in its comments

[2] Live bottom includes those areas which contain biological assemblages consisting of such sessile invertebrates as sea fans, sea whips, hydroids, anemones, ascidians, sponges, bryozoans, or corals living upon or attached to naturally occurring hard or rocky formations with rough, broken, or smooth topography; or areas whose lithotope favors the accumulation of turtles, fishes, and other fauna.

[3] For the purpose of this discussion, "collocation" refers to the amount that Southern's permanent or temporary right-of-way is either adjacent to, or overlaps, another utility easement.

on the draft EIS that we include a description of the criteria used to recommend collocation. When evaluating pipeline routes, we often evaluate the potential for the pipelines to be collocated to some extent within existing utility corridors. An overlap of permanent rights-of-way can reduce the amount of undeveloped land that the new pipeline would permanently occupy and potentially restrict. In addition, locating temporary workspaces on previously disturbed corridors can reduce the amount of forested land cleared. When evaluating possible collocation situations, the staff considers both construction and operational restrictions and safety issues that could arise from a new pipeline being constructed and operated within another utility easement, and also the future restrictions on the use of that right-of-way easement by the existing utility. In the case of collocation within an electric power line corridor, we evaluate the available width within the corridor that is currently not occupied, and how much workspace would be required to safely construct the pipeline and maintain the existing transmission lines and other infrastructure (e.g., water lines, fiber optic lines) that may be located within a right-of-way. If we determine that sufficient space is available to locate some portion of the pipeline permanent right-of-way within the existing corridor, the width and length of collocation is determined and the environmental affect of doing so is evaluated and compared to the proposed action to determine if a net reduction in environmental impact would result.

The proposed Phase I 166.9-mile-long mainline would begin near the existing Rincon Gate Meter Station at MP 0.0 and follows the Georgia Power Company (GPC)/Savannah Electric Power Company (SEPCO) electric transmission corridor in a south-southeasterly direction through Effingham County before entering Chatham County just south of I-16. The proposed route then follows I-95 for about 5.3 miles before it again intersects with the GPC electrical transmission corridor at MP R27.3. From this intersection, the proposed route follows the GPC transmission corridor south though Bryan, Liberty, Long, McIntosh, Glynn, Camden, and Charlton Counties, Georgia. The proposed route continues along the transmission lines (owned by FPL and JEA) into Florida through Nassau and Duval Counties, before interconnecting with FGT in Clay County.

We received 15 comments during the draft EIS scoping period asking that Southern make greater use of the existing corridors in order to minimize impacts on adjacent lands. Of those 15 comments, eight were from landowners in Effingham County. The concerns expressed that widening the existing corridors and establishment of additional new permanent right-of-way would negatively impact future land development, planned subdivisions, residences, forested land, and recreational activities. To address these concerns we asked Southern to evaluate increasing the amount it could collocate with other utility corridors for its proposed new permanent and temporary construction rights-of-way. In response, Southern provided a detailed analysis of how and where its proposed loop and mainline would be collocated with other utility easements, and evaluated the existing physical constraints and other limitations that would affect their ability to increase collocation.

Based on Southern's information, we determined that the permanent right-of-way for Southern's proposed 9.8-mile-long loop is collocated entirely within Southern's existing Wrens-Savannah pipeline right-of-way and that additional collocation would not be possible along its loop. Although temporary construction right-of-way would be required outside Southern's existing easement to construct the loop, Southern has provided site-specific residential construction plans for residences within 25 feet of construction work areas, and would negotiate with landowners to minimize or mitigate unavoidable damages during construction (see discussion in section 4.8.3).

About 9.1 miles, or about 5 percent of Southern's proposed 166.9-mile-long mainline route would not be adjacent to existing utility corridors or easements and, therefore, could not be collocated. In addition, we determined that about 31.2 miles, or about 19 percent, of Southern's mainline would be located directly adjacent to road rights-of-way, which are generally not suitable for overlap due to safety issues associated with construction, operation, and maintenance of the road and pipeline facilities.

Therefore, we determined the proposed alignments collocated adjacent to road rights-of-way could not be collocated further.

The remaining 126.6 miles or about 76 percent of the mainline route is primarily adjacent to existing powerline corridors where no road rights-of-way prevent additional collocation.[4] The powerline corridors are principally maintained by GPC or SEPCO for the portions of the mainline in Georgia, and by FPL in Florida. In some locations, the proposed mainline is adjacent to other pipeline or fiber optic facilities that are within or adjacent to powerline corridors. In evaluating the feasibility of increasing the collocation of its mainline with these powerline easements, Southern provided information about the location of existing and planned future powerline corridor facilities, and about safety issues relevant to the construction and operation of its proposed mainline. This information and the issues Southern identified include:

- GPC and SEPCO stated they would only consider third party placement of facilities (such as fiber optic facilities or Southern's proposed pipeline) within the outer five feet of their easements.

- FPL did not reply to inquiries by Southern about collocating within its easement, and Southern is currently evaluating whether it could adjust its alignment to overlap the TECO (Peoples Gas) pipeline easement, which is a 50-foot-wide permanent easement directly adjacent to the FPL easement between MPs 152.7 and 154.2, in Duval County, Florida. In addition, Southern is proposing to be offset about 20 feet from an existing South Georgia pipeline for about 3,500 feet near MP 144.0 in Duval County, Florida. The South Georgia pipeline is within a right-of-way collocated adjacent to FPLs existing corridor.

- SEPCO has future plans to install a 115 Kilovolt (kV) transmission line and 13.8 kV feeder lines where the proposed pipeline is adjacent to the SEPCO right-of-way in Effingham and Chatham counties, Georgia. SEPCO also has given preliminary approval to the City of Savannah to install about 11 miles of water line along the west side of the SEPCO right-of-way between MPs 9.5 and R19.6. The water line would be located within the outer 5 feet of the SEPCO corridor easement and is tentatively scheduled to be installed by the spring of 2006.

- Fiber optic cables exist within the outer limits of GPC's existing corridor between MPs 109.9 and 115.4 in Charlton County, Georgia. Although Southern did not know the exact location of the fiber optic cables within GPC's existing corridor, it is reasonable to assume they would be located within the outer five feet of the GPC corridor based on GPC's third party collocation policy, above.

- Powerline companies generally do not allow third parties to install facilities or operate construction equipment within 25 feet of existing powerline structures, including towers, poles, and guy wire anchors. Guy wires are typically placed within 1 foot from the edge of the powerline easement and enter the ground at a 45 degree angle. Guy wires are used on power poles immediately adjacent to the proposed route between MPs 22.1 and 36.1 in Bryan County, Georgia.

[4] There are two site-specific locations along the proposed mainline where Southern is proposing to collocate its pipeline inside the powerline corridor to minimize impact on a residence and a pond for a total of about 0.2 mile.

- The OSHA required exclusion zone between the metal parts of equipment and 500 kV powerline conductors is 25 feet. Construction equipment, including ditch excavating backhoes, is not allowed to place metal parts within this exclusion zone.

- GPC grounds at least two legs of each tower with a 260 foot length of copper wire. The wire is buried in their easement, typically 10 feet inside their easement edge. In poor soil conditions, additional support tower legs may be grounded or ground rods installed in the easement. Because of these grounding features, GPC insists that the pipeline cannot cross perpendicular to the GPC easement within 275 feet of grounded structures and must avoid excavations which could interfere with grounding 10 feet or more inside of the existing easement at structures.

- The minimum allowed height of 500 kV conductors (which SEPCO, GPC, and FPL operate) is 33 feet. While conductors may be higher than this at times and in the vicinity of support towers, under heavy load (current flow through the lines) and high ambient conditions, 500 kV conductor sag would result in the 33 foot minimum height. The height of conductors can be a significant safety factor in pipeline construction and maintenance operations.

Southern identified safety during construction, particularly safety associated with high voltage powerline conductors, as a significant concern. We agree. Installation of the pipeline would require ditching by backhoe and the extended length of a standard backhoe bucket is approximately 40 feet. In order for Southern to operate backhoes without restriction in compliance with the above OSHA standard (25 foot exclusion zone), the centerline of the ditch would need to be no closer to the centerline of the powerline support structures than about 84 to 90 feet, depending on powerline conductor overhang. The existing distance between the centerline of the powerline support structures and the edge of the powerline right-of-way is variable, but is typically 75 feet for most of the route (82.5 feet is typical in Florida). As a result, Southern has proposed to locate its pipe at least 10 feet outside the powerline easement so that the equipment can operate in an unrestricted way in most locations. Where the conductors overhang outside the centerline of the powerline structures, which can typically be up to 34 feet on the large steel towers, then restricted operation of equipment would be required by Southern in order to meet OSHA safety setback requirements. Restricted equipment operation would also be required when making perpendicular crossings of the powerline easement.

Construction safety is also of concern due to voltage that can be induced from the high voltage powerlines to exposed pipe and equipment operating nearby. To address this concern, Southern would ground pipe and equipment during construction.

During operation of the pipeline, the risk of catastrophic failure is very small for high voltage powerlines and natural gas pipelines. However, Southern noted that the proximity of pipelines to high voltage conductors can increase the requirements for mitigation to protect against the impact on pipeline cathodic protection systems due to induced voltage. In addition, during operation of heavy equipment for pipeline or powerline maintenance, the risk of one facility impacting the other's facilities would increase where they are in close proximity. Such an event for either facility could seriously impact the other and presents a potential risk to the regional energy infrastructure.

Aside from the construction and operation safety issues outlined above, we believe there are several environmental benefits to having Southern increase its proposed collocation with utility corridors and potentially operate its proposed new pipeline within the powerline corridors. In general, these benefits include that the width of the existing cleared and maintained powerline corridor would not need to be substantially increased, and less clearing of adjacent forested areas would be required for

construction and operation of the new pipeline. In addition, impacts to adjacent existing and anticipated future land uses would be minimized.

Southern asserted and we concur that greater collocation of temporary or permanent rights-of-way is not feasible for Southern along power line rights-of-way where there are power structures with guy wires or fiber optic cable facilities in the outer five feet of the existing corridors (about 13.7 and 5.5 miles of the route, respectively). Excluding those segments and the other segments identified above (e.g., along the loop, road rights-of-way, and new corridor areas) where no additional collocation could occur, we analyzed eight segments of the proposed pipeline route in the draft EIS, totaling approximately 136.2 miles, where greater collocation of the temporary and permanent rights-of-way could potentially be subject to the safety-related offset constraints that are identified above. Our analysis of these segments assumed that the pipeline could only be collocated up to five feet within an adjacent powerline corridor, rather than Southern's proposed alignment at least 10 feet outside the powerline easement. The length and milepost locations of these segments are summarized in table 3.3.2-1.

Segment 1 is about 20.3 miles long and corresponds to the SEPCO right-of-way in Effingham and Chatham Counties, Georgia. It includes the locations where SEPCO is planning to construct additional powerline facilities and also includes the segment where preliminary approval has been provided for placement of a waterline within the outer five feet of its right-of-way. Segments 2 through 6 are adjacent to GPC right-of-way and are distinguished from each other by intervening road rights-of-way and locations where guy wires and fiber optic facilities exist. Segments 7 and 8 are adjacent to FPL right-of-way.

In evaluating the potential environmental benefits of greater collocation in comparison to the proposed route, the information in table 3.3.2-1 compares the difference in the wetland and upland forest habitat acreages that would be impacted assuming the proposed mainline is collocated five feet inside the powerline right-of-way (versus 10 feet outside the powerline right-of-way in each of the eight segments).[5] In the collocated analysis, the mainline was assumed to be located five feet inside the existing corridor within a 50-foot-wide new permanent right-of-way that overlaps the existing corridor by 15 feet and extends outside the existing corridor by 35 feet. Under this scenario, the temporary construction right-of-way would still typically extend 15 feet further beyond the proposed new permanent right-of-way (further away from the existing powerline corridor). The additional collocation of this variation would avoid 15 feet of disturbance outside the utility corridor along the proposed construction and permanent right-of-way.

As shown in table 3.3.2-1, the collocated route, compared to the proposed route, could reduce construction-related impacts on forested uplands up to 122 acres, or about 18 percent, and impacts on forested wetlands could be reduced up to 47 acres, or about 19 percent, because 15 feet of proposed construction right-of-way outside the existing powerline easement may not be used. These reductions are significant because of the time it can take for forested areas to return to preconstruction conditions in areas that would be temporarily disturbed by construction. Additionally, although the collocated route would increase construction-related impacts on emergent wetlands by about 60 acres or about 51 percent, we do not consider this effect as significant when compared to the reduction in forested wetland impacts because emergent wetlands can generally be restored to preconstruction conditions within 1 or 2 years after construction. In addition, these impacts would occur on emergent wetlands in the existing powerline corridors that have been previously disturbed. Conversely, forested wetland impacts can take 20 years or longer to be restored to preconstruction conditions.

[5] While the collocation alternative could potentially minimize impact on other environmental resources (i.e., residences, wildlife, etc), our analysis in table 3.3.2-1 is limited to wetland and upland forest impacts because additional collocation along the mainline could significantly minimize disturbance on these particular resources.

TABLE 3.3.2-1

Impact Summary of Proposed and Collocated Routes During Construction

Segment Number	Length (miles)[a]	Begin MP	End MP	Route	Wetlands (acres) Hydric Pine	PFO	PSS	PEM	Total	Upland Forest (acres)
1	20.3	0.0	R19.6	Proposed	0.0	68.6	7.7	15.1	91.4	93.8
				Collocated	0.0	63.4	7.7	19.9	91.0	84.8
2	2.7	R19.6	R22.3	Proposed	0.0	1.6	0.0	3.4	5.0	13.2
				Collocated	0.0	1.2	0.0	3.8	5.0	10.0
3	0.5	32.9	33.5[b]	Proposed	0.0	0.0	2.6	0.0	2.6	2.2
				Collocated	0.0	0.0	2.5	0.0	2.5	2.1
4	37.6	36.3	73.9	Proposed	14.0	72.5	11.4	31.3	129.2	176.1
				Collocated	10.1	55.5	13.3	49.8	128.7	138.1
5	29.3	75.6	104.8	Proposed	5.3	69.9	4.7	29.6	109.5	176.0
				Collocated	4.0	55.5	3.4	46.5	109.4	150.9
6	4.1	105.9	110.0	Proposed	1.7	6.7	0.2	3.0	11.6	24.1
				Collocated	1.2	4.9	0.3	4.9	11.3	19.1
7	34.2	115.4	149.6	Proposed	15.5	30.4	0.8	31.4	78.1	142.3
				Collocated	11.3	22.1	0.6	47.8	81.8	109.7
8	7.5	151.0	158.3	Proposed	3.2	0.3	1.5	4.0	9.0	54.0
				Collocated	2.7	0.2	0.8	5.1	8.8	44.6
Total	136.2			Total Proposed	39.7	250.0	28.9	117.8	436.4	681.7
				Total Collocated	29.3	202.8	28.6	177.8	438.5	559.3
				Total Difference	10.4	47.2	0.3	(60.0)	(2.1)	122.4

[a] Length reflects the effect of milepost equations.

[b] This segment is located within an area where the available right-of-way is constrained by guy wires.

PFO = Palustrine Forested, PSS = Palustrine Scrub-Shrub, PEM = Palustrine Emergent

Within Segment 1, we do not believe Southern can increase the amount of collocation between MPs 9.5 and R19.6 where SEPCO has given preliminary approval to the City of Savannah to install about 11 miles of water line within the outer 5 feet of the powerline corridor. However, between MPs 0.0 and 9.5, where SEPCO has future plans to install a 115 kV transmission line and 13.8 kV feeder lines, there are generally no existing facilities within the northern side of the existing powerline corridor. In this area, the distance between the existing (northern) right-of-way limit to the center of the nearest tower is about 145 feet. We believe Southern could further reduce construction-related impacts outside the proposed new permanent right-of-way by changing its construction configuration. Under this alternative configuration, the working (equipment operation) side of the construction right-of-way would occur on the powerline corridor side of the proposed mainline, and the nonworking (spoil) side of the construction right-of-way would shift to side the proposed mainline further away from the powerline. This, combined with locating the mainline five feet inside the edge of the powerline easement, could limit vegetative clearing and maintenance outside the existing right-of-way edge between these MPs (0.0 to 9.5) to no more than 35 feet outside the existing powerline corridor where SEPCO has cleared trees on its entire easement.

During operation, as part of routine maintenance, Southern would be allowed to remove forested vegetation within the entire permanent right-of-way in uplands and within 15 feet of the pipeline in

wetlands. The remaining portions of the permanent right-of-way within wetlands would not be maintained. In non-collocated areas, Southern's proposed pipeline would be generally offset 10 feet outside the existing cleared and maintained powerline corridors, and the new 50-foot-wide proposed permanent right-of-way would abut the existing powerline corridors. Southern's proposed route and maintenance practices would effectively widen the existing corridors by 50 feet in uplands and 25 feet in wetlands. If, however, Southern were to collocate the proposed pipeline 5 feet within the existing powerline corridors, the permanent widening of the existing corridor would be reduced by 15 feet, which means that increased collocation would result in 30 percent less widening in uplands and 60 percent less widening in wetlands than the proposed route. We believe these reductions are substantial and would significantly minimize associated impacts to adjacent land use, forested land, and visual aesthetics.

Southern would need to manage increased safety risks if its proposed mainline were collocated within existing powerline corridors by restricting equipment movements and the length that backhoes could reach, and would need to coordinate with existing easement holders to conduct maintenance activities. For segments 2 through 8, where the centerline of the powerline is typically 75 feet from the edge of the corridor, Southern has already agreed to construct its pipeline as close to powerline structures as is recommended by OSHA. We believe that the safety risks, along with the extended construction time this variation would require due to equipment restrictions, outweigh any environmental benefit. Therefore, we do not recommend any further collocation in segments 2 through 8 at this time because the risks associated with constructing and operating a high-pressure pipeline in close proximity to the high voltage transmission lines is too great. Southern's proposed alignment and collocation of the existing utility corridors minimizes wetland and forested upland impacts to the maximum extent practicable.

Where space is available for Southern to construct its pipeline safely, we believe that collocation of pipelines within powerline rights-of-way is relatively common, and is a preferred because it can minimize impacts associated with forest clearing and land disturbance. In the draft EIS, we recommended that Southern realign the centerline and construction right-of-way so that the resulting mainline pipeline centerline is generally 5 feet inside the existing power line corridor between mileposts 0.0 to 9.5. In addition, we recommended that Southern reverse its construction configuration and lay direction so that the working side of the construction right-of-way would be located on the powerline corridor side of the proposed mainline and that neither its construction right-of-way nor its permanent right-of-way should be located more than 35 feet outside of the powerline right-of-way in this milepost segment. In its comments on the draft EIS, Southern agreed to the collocation variation and incorporated it into its proposed route configuration.

By collocating the pipeline in this area, tree clearing would be reduced by about 15 feet and would move the construction and permanent rights-of-way further away from two residences that were within 60-feet of the proposed construction work area. Because of the distance between the edge of the existing corridor and the powerlines along this segment (a minimum of 110 feet), we believe that the safety risks can be effectively managed along this segment by training construction and operational personnel, by restricting equipment to prevent accidents, and by other safety measures that are typically employed when pipelines are installed or operated within powerline corridors (e.g., construction monitoring, safety flagging and fencing, etc.). We also do not believe that our recommendation to collocate the proposed pipeline within the powerline corridor along this segment would adversely impact SEPCO's planned expansion of its powerline facilities. Representatives of SEPCO and GPC indicated that if the pipeline were installed as recommended by the FERC, they could safely install the guy wires between the pipeline and the power poles (SEPCO, 2006).

Southern has agreed to reverse its construction configuration from MPs 12.75 to R19.7 so that the working side of the construction right-of-way is located on the powerline corridor. Because of an existing small powerline between MPs 7.8 and 12.75, there is insufficient room for Southern to reverse its

construction configuration along this segment. Reversing the construction configuration between MPs 12.75 and R19.7 would further limit the amount of clearing to 50 feet (rather than 65 feet) outside of the powerline right-of-way along this segment.

3.3.2.2 Northern Route Variations

In early 2001, Cypress Pipeline Company (a subsidiary of Southern at that time) submitted an application to construct a pipeline on a route very similar to the proposed route, except in the northern portions between Port Wentworth and the GPC corridor in Chatham County, Georgia. In that area, Southern originally proposed to construct a route that passed through areas with greater population densities, developed or developing land, and other urban features such as airports and shopping centers. The Chatham County portion of the 2001 route would have crossed the most developed portion of the Cypress Pipeline Project area and is an area that continues to experience rapid growth. The 2001 route received strong opposition by numerous landowners, the Savannah Economic Development Authority (SEDA), and others. One common theme of those comments was that a route should be selected that is collocated with existing corridors and should limit the amount of new right-of-way to minimize impacts to developed and developing areas. Therefore, at that time, we evaluated a number of route variations, including the proposed route through Effingham County, to avoid the developed areas of Chatham County and to address issues identified during scoping for the 2001 project.

In late 2001, Cypress Pipeline Company withdrew its application due to a sudden downturn in the economy and the energy industry. Because Cypress Pipeline Company withdrew its application, no decision was made identifying the preferred route. However, by that time, FERC staff had identified several route variations to recommend a preferred route with the best constructability and least environmental impact, that would avoid the developed areas of Chatham County, and would address the 2001 scoping comments. This included one variation similar to the proposed route in Effingham County and another located in Chatham County that followed existing roadways, railroads, and transmission corridors to the extent possible, and avoided or minimized impacts identified during the 2001 scoping.

When Southern submitted its application for the proposed route in 2005, which substantially avoids Chatham County and the issues identified in 2001, the other 2001 route variations remain as options to move the proposed gas volumes between the interconnect with Southern's existing natural gas pipeline system near Port Wentworth, Georgia and the point where the route would begin paralleling and abutting the GPC/SEPCO corridor in Chatham County near the Bryan County line. The Northern Route variations provide a more direct route between those points but would pass through more congested and populated areas compared to the proposed route. Table 3.3.3-2 provides a comparison of environmental factors for the Northern Route variations to the proposed route and figure 3.3.2-1 depicts their locations relative to each other and the proposed route. In addition, a brief summary of each variation is provided below.

TABLE 3.3.2-2

Environmental Comparison of Northern Route Variations for the Cypress Pipeline Project

Environmental Factor	Unit	Proposed Route	Chatham Variation	I-95 Variation
Total Length	Miles	23.6 [a]	14.2	14.8
New Permanent Pipeline Right-of-Way	Miles	13.8	14.2	14.8
Percentage Adjacent to or within Existing Rights-of-Way	Percent	100	37	22
Major Waterbody Crossings	Number	0	0	0
Minor Waterbody Crossings	Number	13	13	11
Forested Land Crossings	Miles	12.1 [b]	14.1	11.3
Wetlands/Open Water Crossed	Miles	3.8 [b]	4.4	5.3
Municipalities Crossed	Number	1	4	3
	(Miles) [c]	(4.5)	(11.0)	(7.3)
Existing / Future [d] Urban Areas Crossed	Miles	0.1 / 0.0	0.2 / 4.6	0.7 / 2.9

[a] Includes 9.8 miles that would be located within existing pipeline right-of-way.

[b] Includes only the length that would be impacted by new pipeline right-of-way.

[c] Mileage indicates length within incorporated limits of municipalities crossed.

[d] Future values represent the sum of existing urban areas plus identified planned developments (e.g., Crossroads Business Center).

Chatham Variation (2001 Proposed Route)

The Chatham Variation begins at the Port Wentworth Meter Station and proceeds west for about 0.2 mile on the south side of the Jimmy DeLoach Parkway. It then turns and proceeds south for about 0.2 mile following an existing SEPCO right-of-way that is adjacent to a future municipal sewer, fire, and police facility. At this point, the Chatham Variation deviates from the existing SEPCO right-of-way and proceeds in a southwesterly direction for about 1.4 miles along a greenfield route (new pipeline right-of-way) within the southern limits of the SEDA planned Crossroads Business Center. It then turns and proceeds in a westerly direction for about 1.0 mile, parallel to a service road on the northern edge of the Savannah International Airport (Savannah Airport Authority) property and within 1,500 feet of a proposed future runway. The variation then turns and proceeds in a northwesterly direction on a greenfield route for about 1.6 miles, crossing I-95 and planned future roadways (e.g., Benton Drive) before intersecting with the Jimmy DeLoach Parkway. At the parkway, the Chatham Variation turns and proceeds in a westerly direction adjacent to the parkway right-of-way for about 4.4 miles through the city limits of Pooler and Bloomingdale, Georgia. About 0.5 mile before crossing Highway 80, the Chatham Variation deviates west from the parkway and follows a primarily greenfield corridor west for about 0.5 mile and then south for several miles crossing Highway 80 and, further south, I-16 before reaching the GPC/SEPCO corridor in Chatham County.

Non-Internet Public

FINAL ENVIRONMENTAL IMPACT STATEMENT FOR THE
PROPOSED CYPRESS PIPELINE PROJECT and
PHASE VII EXPANSION PROJECT
Docket Nos. CP05-388-000 and CP06-001-000

Figure 3.3.2-1 Cypress Pipeline Project – Northern Route Variations and Richmond Hill Variation

Public access for the above information is available only through the Public Reference Room, or by e-mail at public.referenceroom@ferc.gov.

The Chatham Variation is substantially shorter in overall length than the proposed route but has a greater length of new permanent pipeline right-of-way and only about 37 percent of its total length is adjacent to existing utility rights-of-way, compared to 100 percent for the corresponding segment of the proposed route. As such, the Chatham Variation, although shorter in length, is not substantially collocated within or adjacent to existing rights-of way which can limit environmental effects by allowing opportunities to use previously disturbed areas and minimizing the establishment of new or wider permanent corridors.

The Chatham Variation would impact slightly more forested land and wetland/open water areas than the new pipeline right-of-way for the proposed route. The variation was also strongly opposed by landowners due to numerous residential disturbances and SEDA due to conflicts with the existing and proposed commercial development in Chatham County, Georgia. Whereas the proposed route traverses about 4.5 miles within the limits of Port Wentworth, Georgia, all of which would be associated with Southern's existing pipeline right-of-way, the Chatham Variation would traverse four municipalities, including Port Wentworth, Savannah, Pooler, and Bloomingdale, Georgia, for about 11.0 miles. Locating a pipeline within developed and developing areas can be problematic during construction due to issues associated with routing around other existing facilities, and can be problematic during operation because new developments cannot be located on top of the pipeline. SEDA expressed opposition to construction of a new gas transmission pipeline through Chatham County because of the limitations it may pose on their future developments, such as the Crossroads Business Center and areas west of I-95. The proposed route would avoid those impacts. Based on these factors, this variation is not considered preferable to the proposed route.

I-95 Variation

The I-95 Variation generally parallels the eastern side 1-95 and was selected as an alternative to follow another existing corridor (highway) to minimize creation of new right-of-way. The first 2.2 miles of the I-95 Variation follows the same alignment as the Chatham Variation through a portion of the SEDA-planned Crossroads Business Center. It diverges from the Chatham Variation before crossing I-95, at the point where the Chatham Variation begins to parallel the Savannah Airport Authority property. From there, the I-95 Variation continues in a southwesterly direction through the airport property for approximately 1.5 miles to its western edge. The route then proceeds southward across an industrial park and the eastern corporate limits of Pooler, Georgia. The variation joins and begins paralleling I-95 in a southwesterly direction to a point about one mile north of the Ogeechee River and one mile south of State Highway 204. This variation then crosses I-95 and proceeds to the GPC corridor, where it rejoins the proposed route.

The I-95 Variation would be shorter and cross slightly less forestland and fewer minor waterbodies than the proposed route. However, it would also disturb more open water and wetland habitats and create more greenfield right-of-way. In fact, only about 22 percent of the I-95 Variation would be adjacent to or within existing rights-of-way, compared to 100 percent for the corresponding segment of the proposed route. This is because the variation is never closer than about 1,500 feet to I-95 along its length. Collocation of this route directly adjacent to I-95 is infeasible due to the presence of numerous existing and on-going commercial developments or congested areas adjacent to the interstate corridor, particularly near each interchange and the town of Pooler, Georgia. In addition, the variation crosses a golf course and subdivision south of the airport. Conflicts may also exist with the planned expansion of Savannah International Airport facilities where this route crosses planned new runways. Overall, the I-95 Variation crosses more existing urban areas than the corresponding segment of the proposed route or the Chatham Variation. It also traverses 7.3 miles within the municipal areas of Port Wentworth, Savannah, and Pooler, Georgia. Because of potential conflicts with existing and planned

developments in this area, and since this variation appears to offer no significant environmental benefits when compared to the proposed route, we eliminated the I-95 Variation from further consideration.

3.3.2.3 Richmond Hill Variation

In order to avoid a crossing of Fort Stewart and increase the amount of route that would parallel existing powerline corridor, one route variation was evaluated in the vicinity of the Fort Stewart near the proposed crossing of the Ogeechee River on the border of Chatham and Bryan Counties. In that area, the proposed route is constrained by Fort Stewart to the west and the town of Richmond Hill, including commercial areas and large wetland areas, to the east. The Richmond Hill Variation would diverge from the proposed route about 0.5 mile north of the Ogeechee River and then follow the GPC corridor across I-95 in a southeasterly direction to a point northwest of the Gun Hill Cemetery. From this point, the Richmond Hill Variation continues to follow the GPC corridor at first in a southerly direction and then in a southwesterly direction until crossing the Ogeechee River near the Kings Ferry Bridge of Coastal Highway 25. Once across the river, the Richmond Hill Variation continues to follow the GPC corridor parallel to Coastal Highway 25 in a southwesterly direction for about 2.6 miles through the Town of Richmond Hill, Georgia and across Highway 144. After crossing Highway 144, the Richmond Hill Variation turns and proceeds in a westerly direction following the GPC corridor across I-95, south of the Ogeechee River, where it rejoins the proposed route. The location of this route variation relative to the proposed route is depicted in figure 3.3.2-1 and an environmental comparison of these routes is provided in table 3.3.2-3.

TABLE 3.3.2-3

Environmental Comparison of the Proposed Route and Richmond Hill Variation

Environmental Factor	Unit	Proposed Route	Richmond Hill Variation
Total Length	Miles	4.8	5.2
Percentage parallel to or within existing rights-of-way	Percent	75	100
Interstate crossings	Number	0	2
Major waterbody crossings	Number	1	1
Minor waterbody crossings	Number	4	7
Wetlands/open water crossed	Miles	1.6	2.8
Public lands crossed	Number	1	0
	(Miles)	(1.7)[a]	
Municipalities Crossed	Number	0	1
	(Miles)		(2.0)

[a] This number denotes the portion of the route within the boundaries of Fort Stewart.

The Richmond Hill Variation is 5.2 miles in length and is 100 percent collocated with existing rights-of-way, while the corresponding segment of the proposed route is 4.8 miles in length but only 75 percent collocated with existing rights-of-way. Although the variation is entirely adjacent to the GPC corridor, it would involve two crossings of I-95, three additional minor waterbody crossings, and about 1.2 miles of additional wetland/open water crossings that are avoided by the proposed route. The Richmond Hill Variation also crosses existing and congested land associated with the center of Richmond Hill, Georgia, which the proposed route avoids. However, the proposed route would cross public land associated with Fort Stewart on its eastern edge. Based on our analysis of this variation, we believe that the proposed route is the preferable route in this location because it is shorter in total length; avoids two crossings of I-95; reduces the length of wetlands crossed; and avoids developed urban land, which would

reduce impacts and engineering constraints associated with constructing within existing commercial areas in Richmond Hill. Therefore, we eliminated this variation from further consideration.

3.3.2.4 Duval County Variation

At the very south end of the proposed Cypress Pipeline Project, we evaluated one route variation that would follow more existing right-of-way. The proposed route deviates from the existing FPL corridor where the pipeline exits Duval County, Florida, while the Duval County Variation follows the existing FPL corridor (see figure 3.3.2-2). The Duval County Variation would follow the FPL corridor until it reaches the proposed FGT interconnect in Clay County, Florida. This route is about 700 feet shorter than the proposed route and is located adjacent to existing right-of-way for 100 percent of its length, and thus would reduce land disturbance and avoid creating a new greenfield corridor. The Duval County Variation would also avoid placement of the pipeline in close proximity to several residences located north of Long Branch Road that are not currently affected by utility corridors. However, the Duval County Variation also crosses four forested wetlands totaling about 1,900 feet of wetland and three minor waterbodies. In addition, the Duval County Variation would widen the existing utility corridor and have a cumulative impact on two landowners that expressed strong concerns in 2001 about the effect of existing utilities and the effect of the pipeline on their lands. In comparison, the proposed route deviates from the existing FPL corridor for about 1 mile to the southeast and bypasses the two property owners currently affected by the existing FPL corridor. Moreover, the proposed route only requires one minor waterbody crossing and two crossings of forested wetlands totaling about 400 feet of wetland.

Although the proposed route would establish a new utility right-of-way, the Duval County Variation would impact a greater amount of forested wetlands and waterbodies, and would impact two landowners that expressed concerns about the effect of the existing utility corridors on their properties and the cumulative impact that would result if another pipeline was constructed in the same area. For these reasons, we believe the proposed route is preferable to the Duval County Variation.

Non-Internet Public

FINAL ENVIRONMENTAL IMPACT STATEMENT FOR THE
PROPOSED CYPRESS PIPELINE PROJECT and
PHASE VII EXPANSION PROJECT
Docket Nos. CP05-388-000 and CP06-001-000

Figure 3.3.2-2 Cypress Pipeline Project – Duval County Variation

Public access for the above information is available only through the Public Reference Room, or by e-mail at public.referenceroom@ferc.gov.

3.3.2.5 Miscellaneous Minor Route Variations

During project planning, Southern identified and adopted several minor variations to the originally proposed route, in addition to those we evaluated for the proposed route above. These variations would avoid or minimize potential negative impacts to existing features including powerline structures, residential structures, or sensitive species or habitats. Their locations are listed by MP in table 3.3.2-4 with a brief description of each feature or issue that is addressed by the minor variations. Our review of these variations confirmed they would minimize impacts to landowners and existing resources and no significant additional environmental impact would occur. We have reviewed these minor variations as part of the proposed project analyzed in section 4.0. We agree that adoption of these variations as part of the proposed route would reduce the overall environmental impact of the project.

TABLE 3.3.2-4

Miscellaneous Minor Route Variations Adopted by Southern

Milepost Range	County, State	Reason for Route Variation
1.4 - 1.7	Effingham, GA	Southern moved the route to collocate within powerline right-of-way in order to avoid a house and septic system crossed by the proposed centerline.
9.5 - 9.9	Effingham, GA	Southern moved the route between the two major powerlines north of Highway 80 to avoid insufficient space on the west side, as well as a house, a pond, and a landowner who refuses access to his property.
R18.5 - R19.0	Chatham, GA	Southern extended an HDD to avoid a landowner's pond and adjoining forest land, and to extend workspaces for the HDD out of a wetland.
R22.3 - R22.9	Chatham and Bryan, GA	Southern moved the route to avoid a grave site near the right-of-way, plus a billboard and revetments built to protect I-95 from water erosion damage. This would also help maintain a tree buffer between I-95 and the new pipeline corridor.
R25.8	Bryan, GA	Southern moved Mainline Valve No. 4 to the east and closer to Longwood Road and I-95 to be located outside of the gate to Fort Stewart for safety, security, and access reasons.
26.7 - 27.3	Liberty, GA	Southern moved the route east of the GPC corridor in order to avoid a residence and a barn.
32.9 - 36.2	Liberty, GA	Southern moved the route to the east side of the GPC corridor in order to avoid numerous crossings of the corridor that would have resulted from remaining on the west side. Also avoids impacting the property of a landowner and a borrow pit.
38.6 - 38.9	Liberty, GA	Southern moved the route to the east side of the GPC corridor to avoid a mobile home located within 30 feet of the proposed centerline on the west side.
105.1 - 105.9	Charlton, GA	Southern moved the route to avoid an extensive wetland south of the Satilla River. The HDD would be extended to beyond the powerline corridor to a field road, and then follow the road until it intersects the original route at MP 105.9.
109.9 -110.8	Charlton, GA	Southern moved the route away from the powerline corridor to avoid Red Cockaded Woodpecker habitat.
112.5 - 115.7	Charlton, GA and Nassau, FL	Southern moved the route to east side of the powerline corridor in order to avoid a landowner's house that would be too close to the proposed centerline.
118.3 - 121.0	Nassau, FL	Southern moved the route to the east side of the powerline corridor to avoid a home, pool, double-wide trailer, and mature timber located on the west side.
144.4 - 157.1	Nassau and Duval, FL	Southern moved the route to the east side of the powerline corridor in order to avoid wetlands, houses, a chicken farm, a proposed JEA Brady Branch Power Plant Meter Station, and an existing FPL substation. In addition, less clearing would take place on the east side and existing roads could be utilized during construction.
149.5 - 151.5	Duval, FL	Southern moved the route to the west of the powerline corridor to avoid new powerlines that were recently installed at the location of the proposed centerline.

In addition to the minor route variations identified and adopted by Southern (table 3.3.2-4), the FWS identified three locations along the proposed mainline at MPs R26.5 and 68.0, and between MPs 74.0 and 75.5, where minor deviations in the route appeared possible to minimize forest clearing and fragmentation. Of these three locations, we concur that variations are possible for the locations associated with MP R26.5 and between MPs 74.0 and 75.5. At MP 68.0, it appears there are existing powerline

associated features (e.g., towers) that would prevent Southern from safely routing its pipeline to minimize tree clearing and fragmentation. We have concluded that a route variation at MP 68.0, as identified by the FWS, is not practical and have eliminated it from further consideration.

Fort Stewart Route Variation

At about MP R26.5, Southern's proposed mainline follows a service road on the border of Fort Stewart and at about MP R26.6, departs the Fort Stewart property and passes through a forested area to begin paralleling I-95. The FWS noted that the GADNR Natural Heritage Section identified this as an area of concern due to impacts on natural longleaf pine forest habitat.

In the draft EIS, we recommended that Southern adopt the Fort Stewart Variation. The Fort Stewart Variation would pass through an existing open field near MP R26.5 before rejoining the proposed route at MP R26.8 to avoid the clearing of longleaf pine (see figure 3.3.2-3). Based on the results of site-specific field surveys, the forested tract that would be avoided by the Fort Stewart Variation contains loblolly pine, and not longleaf pine as previously indicated in correspondence from the GADNR. Since the proposed route would not impact longleaf pines we no longer recommend that Southern incorporate the Fort Stewart Route Variation into its proposed route. In addition, Southern has consulted with the landowner who opposes this variation and indicated that the variation would interfere with the plans for this property.

Paulk's Pasture Route Variation

At about MP 74.0, Southern's proposed mainline departs from an existing powerline corridor and passes through a forested area associated with the Paulk's Pasture Wildlife Management Area. This route would avoid a Georgia Power switching station, adjacent wetlands, and two crossings of Little Buffalo Creek. The route then rejoins the powerline corridor at about MP 75.5. Based on our overflight inspection of the proposed route at this location and review of aerial photo-based alignment sheets, we believe Southern could minimize forest clearing and fragmentation in this area by following two existing roads. It would follow parallel and adjacent to Southern's Access Road 73.8 and then Southern's Access Road 71.9 Extension (Glynn Avenue) until it rejoins the proposed route at about MP 75.2. Both of these roads are on a similar alignment and in close proximity to the proposed route (see figure 3.3.2-4). Because the variation would minimize forest clearing and fragmentation, we recommended in the draft EIS that Southern incorporate the Paulk's Pasture Route Variation into the proposed route. In its comments on the draft EIS, Southern agreed to the Paulk's Pasture Route Variation and incorporated it into its proposed route.

Non-Internet Public

FINAL ENVIRONMENTAL IMPACT STATEMENT FOR THE
PROPOSED CYPRESS PIPELINE PROJECT and
PHASE VII EXPANSION PROJECT
Docket Nos. CP05-388-000 and CP06-001-000

Figure 3.3.2-3 Cypress Pipeline Project – MP R26.5 Route Variation

Public access for the above information is available only through the Public Reference Room, or by e-mail at public.referenceroom@ferc.gov.

Non-Internet Public

FINAL ENVIRONMENTAL IMPACT STATEMENT FOR THE
PROPOSED CYPRESS PIPELINE PROJECT and
PHASE VII EXPANSION PROJECT
Docket Nos. CP05-388-000 and CP06-001-000

Figure 3.3.2-4 Cypress Pipeline Project – MPs 74.0 to 75.5
Route Variation

Public access for the above information is available only through the Public Reference Room, or by e-mail at public.referenceroom@ferc.gov.

3.3.3 Aboveground Facility Alternatives

The Cypress Pipeline Project would require the construction of several new aboveground facilities, including three compressor stations, four meter stations, 16 mainline valves, and four pig launcher/receivers (see section 2.1). Compressor station locations were generally selected to optimize gas flow hydraulics and road access. Southern has proposed to locate its compressor stations at the approximate midpoint, and quarterpoints, of the proposed mainline in order to move the proposed volumes of gas with the least amount of horsepower. In assessing the impact associated with developing the new compressor station sites, we considered alternatives when specific problems were identified at the proposed site. Factors considered generally include land use compatibility, proximity to noise-sensitive areas (NSAs), wetland disturbance, presence of critical habitat or endangered or threatened species, and the presence of NRHP-eligible cultural resources. An analysis of alternatives for each compressor station site is provided in the subsections 3.3.3.1 through 3.3.3.3, below.

The meter station, mainline valve, and pig launcher/receiver locations were generally selected based on where other pipeline facilities are located, on regulatory requirements, or on other factors such as where good access exists. Therefore, the consideration of alternatives for those facilities was limited, and we generally only considered alternatives where specific environmental problems were identified, as described below.

3.3.3.1 Compressor Station 1

The proposed site for Compressor Station 1 would be northwest of where the proposed pipeline intersects with U.S. 119 at about MP 40.5 in Liberty County, Georgia (see figure 3.3.3-1). This site is within a relatively remote, upland location with good existing access and no existing residential issues. The current surrounding land use consists of silviculture. The site has been previously cleared and has been replanted into pine plantation.

As part of this site selection, we evaluated potential sites that are adjacent to the proposed pipeline right-of-way and U.S. Highway 119 in the northeast, southeast, and southwest quadrants of the proposed pipeline and highway intersection. These other three quadrants contain forested wetlands that are characterized by native plants and standing water. Therefore, the proposed site is preferred over other potential sites in the vicinity of the U.S. Highway 119 crossing. We also evaluated two other potentially suitable sites, including where the proposed pipeline crosses at U.S. Highway 84 (MP 36.0) and at Screven Fork Road (MP 38.8). Southern has indicated that both of these sites would provide suitable hydraulics and access. However, the presence of nearby residences, potential NSAs, and a large number of landowners makes the U.S. Highway 84 site less desirable than the proposed site. The Screven Fork Road site has an existing residence in the northwest quadrant and has native forested wetlands in the other three quadrants. Therefore, the Screven Fork Road site is also less desirable from an environmental perspective.

Because no alternative sites were identified that offer an environmental advantage to the proposed site for Compressor Station 1, and because no problems were identified for the proposed site, we found that the proposed site for Compressor Station 1 is environmentally acceptable.

Non-Internet Public

FINAL ENVIRONMENTAL IMPACT STATEMENT FOR THE
PROPOSED CYPRESS PIPELINE PROJECT and
PHASE VII EXPANSION PROJECT
Docket Nos. CP05-388-000 and CP06-001-000

Figure 3.3.3-1 Cypress Pipeline Project – Proposed and Alternate Compressor Station 1 Locations

Public access for the above information is available only through the Public Reference Room, or by e-mail at public.referenceroom@ferc.gov.

3.3.3.2 Compressor Station 2

The proposed site for Compressor Station 2 would be within the northeast quadrant of the proposed pipeline intersection with U.S. Highway 82 at about MP 81.1 in Glynn County, Georgia (see figure 3.3.3-2). This location is considered by Southern to have suitable hydraulics, is readily accessible, and has electrical power available in close proximity that could provide Southern the option of using electric-driven, rather than gas-driven, compressor engines. Although the site would temporarily impact about 14.4 acres of forested wetland during construction and permanently impact about 5.6 acres of forested wetland during operation, the wetland that would be impacted consists primarily of low-quality pine plantation. In addition, higher quality, non pine plantation, forested wetlands are present in each of the other three quadrants where the proposed pipeline would intersect U.S. Highway 82. Therefore, the northeast quadrant is preferred location for a site adjacent to U.S. Highway 82.

To comply with NEPA and the 404(b)(1) Guidelines that require the analysis of practical alternatives that would eliminate or minimize the discharge of dredged or fill material into wetlands or other waters of the U.S. (40 CFR 230.10), we investigated the possibility that the Compressor Station 2 facility location could be moved or modified to avoid the disturbance of the wetlands without sacrificing the hydraulic and access advantages that the proposed site would provide.

North of the proposed site, at about MP 75.9, the proposed pipeline crosses U.S. Highway 32 which is a well maintained road that would provide adequate access. However, land on the northern side of this road is currently within the Paulks Pasture Wildlife Management Area, and the south side of the road contains wetlands and nearby residences. We do not believe locating the site within a publicly owned wildlife management area or near residences would be preferable to a location that would not have NSA impacts and would be primarily within a privately owned pine plantation. As a result, U.S. Highway 32 did not provide any advantage to the proposed site and was removed from further consideration.

We identified another alternative site south of the proposed site where the proposed pipeline would intersect Old Tram Road at about MP 81.8. This site also contains forested pine-plantation wetlands on each side of the road, similar to the proposed site. However, access to this site is less suitable along a winding dirt road, and about one mile of new powerline would need to be constructed to service the site should Southern decide to use electric-driven compressor engines. Because this site offered no environmental advantage to the proposed site, we removed it from further consideration. As a result, we found no alternative compressor station sites that offer any environmental advantage over the proposed site. We believe that Southern's proposed Compressor Station 2 site minimizes wetland impacts to the maximum extent practicable. In order to mitigate for the wetland loss at this site, Southern has proposed to obtain wetland bank mitigation credits as part of its COE authorization.

Non-Internet Public

FINAL ENVIRONMENTAL IMPACT STATEMENT FOR THE
PROPOSED CYPRESS PIPELINE PROJECT and
PHASE VII EXPANSION PROJECT
Docket Nos. CP05-388-000 and CP06-001-000

Figure 3.3.3-2 Cypress Pipeline Project – Proposed and Alternate Compressor Station 2 Locations

Public access for the above information is available only through the Public Reference Room, or by e-mail at public.referenceroom@ferc.gov.

3.3.3.3 Compressor Station 3

The proposed site for Compressor Station 3 is within the southwestern quadrant where the proposed pipeline crosses U.S. Highway 108 at about MP 126.7 in Nassau County, Florida (see figure 3.3.3-3). All four quadrants at this location are uplands in pine plantation. The proposed site would have adequate access, hydraulics, and could obtain electrical power from Okefenoke REMC should Southern decide to utilize electric-driven compressor engines. In addition, there are not any residences or NSAs in the immediate vicinity of the site.

As part of the Compressor Station 3 site selection, Southern evaluated two alternative locations in Nassau County, Florida for the proposed compressor station. One would be located at about MP 131.7 where the proposed pipeline crosses U.S. Highway 108 for a second time. Although the U.S. Highway 108 alternative would be comparable to the proposed site in terms of having adequate access and hydraulics, several residences would be in close proximity to the site which would not be preferable. Another alternative site would be located at about MP 134.5 where the proposed pipeline would intersect with Crawford-Kent Road. The Crawford Kent Road alternative would be located adjacent to an unimproved sand road that would not provide dependable access without significant improvements. In addition, this alternative site would be in close proximity to a residence and contains forested wetlands and two ponds/reservoirs which make the site less desirable.

Therefore, we found the proposed site is environmentally acceptable and no alternatives were identified that would provide an environmental advantage.

3.3.3.4 Meter Stations

The meter station locations were generally selected based upon where the proposed pipeline intersects with the other interconnecting pipelines that would receive gas service by Southern. All of the new meter stations are proposed to be located in upland locations and would not impact sensitive environmental resources. Therefore, we did not evaluate alternatives for the proposed new meter stations. Of the proposed upgrades at three of Southern's existing meter stations, two of the sites, including the Port Wentworth and Marietta Meter Station sites, would not impact land outside the existing meter station sites. However, the proposed upgrade to the Rincon Gate Meter Station would involve construction of new facilities that would temporarily impact 3.6 acres of land. This would include about 3.0 acres outside the existing meter station site that consists of about 1.3 acres of wetlands, a 0.2 acre pond, 0.7 acre of forest land, and 0.8 acre of non-forested upland. The wetland and pond would be permanently filled for operation of the new facilities. With the exception of the Rincon Gate Meter Station Facilities, we did not identify any alternative sites for the other proposed upgraded meter station facilities.

Non-Internet Public

FINAL ENVIRONMENTAL IMPACT STATEMENT FOR THE
PROPOSED CYPRESS PIPELINE PROJECT and
PHASE VII EXPANSION PROJECT
Docket Nos. CP05-388-000 and CP06-001-000

Figure 3.3.3-3 Cypress Pipeline Project – Proposed and Alternate Compressor Station 3 Locations

Public access for the above information is available only through the Public Reference Room, or by e-mail at public.referenceroom@ferc.gov.

To comply with NEPA and the 404(b)(1) Guidelines, we investigated the possibility that the Rincon Gate Meter Station facility location could be moved or modified to avoid/minimize the disturbance of the wetlands. Southern currently has three existing pipelines that operate adjacent to the Rincon Gate Meter Station. There is also an existing wastewater and reuse line and a proposed 36-inch-diameter water main in this area, and the proposed loop would be installed between Southern's existing pipelines and the water main, all of which introduce constraints on the design and location of the new facilities. We asked Southern to evaluate alternatives that would avoid or minimize impact to the wetlands, including changing the location of the facilities to within the powerline corridor, further away from the powerline corridor, or into the north and east sides of the existing fenced facility site. In response, Southern refined its site plan to move the aboveground facilities closer to the existing meter station within a revised fence line configuration. However, this did not result in a reduction in the temporary or permanent impact areas or reduce or avoid impacts to the wetlands or the pond. In addition, Southern stated that this revised configuration would place the aboveground facilities on a 70-foot-wide strip of land that currently provides a landowner access to property. We believe the refined site plan does not offer any environmental advantage and, due to its potential to affect an existing landowner access point, we believe the refined site plan is unacceptable.

Southern also developed a preliminary secondary site plan that would locate the proposed new mainline pig launcher/receiver immediately southeast of the existing site, and would avoid the pond and forested land impacts, and minimize non-forested wetland impacts. However, the configuration would require deep excavation beneath Southern's existing pipelines, the wastewater and reuse pipelines, and the proposed new water main, which would be more complicated than the proposed facilities to install, and there may not be enough room for safe operation of the facilities. Southern also indicated it may be able to locate the proposed new loop and mainline pig launchers/receivers into the cleared area north and east of the proposed site onto land identified as the McIntosh Meter Station Property. However, this alternative would also involve the complications noted above and would require the loop to cross all of Southern's existing lines. Southern indicated it could adopt either of these two alternative site locations subject to a detailed design feasibility analysis.

Locating the proposed facilities within the powerline corridor was determined to not be feasible due to SEPCO's planned new transmission line and the potential for significant electrical interference and safety issues for aboveground piping placed under high voltage power lines. Locating the facilities further away from the powerline corridor is likely to impact other landowners and wetlands and does not appear to have any benefit compared to the proposed action or other alternatives. In the draft EIS, we recommended that Southern provide a detailed design to install the Rincon Gate Meter Station on the McIntosh Meter Station Property, either in the cleared area north and east of the site, or in the area southeast of the existing site. In its comments on the draft EIS, Southern provided a detailed design and indicated that it has modified its plans for the Rincon Gate Meter Station and would locate the proposed facilities within the cleared area north and east of the originally proposed site on Southern's existing McIntosh Meter Station Property. We have reviewed the modified Rincon Gate Meter Station design and find that it would no longer impact waterbodies or additional landowners. Therefore, we find the modified plan acceptable.

3.3.3.5 Mainline Valves

Mainline valve locations were selected based primarily on DOT safety regulations that specify spacing intervals, and also the need to be easily and readily accessible to maintenance crews. Therefore, they are typically located as close as possible to well-maintained roads. Mainline valves sites are typically small and generally occupy portions of the existing right-of-way or other pipeline facility sites. Of the 16 mainline valves proposed for the Cypress Pipeline Project, four would be collocated with or near the new compressor stations and six would be collocated with new or existing meter stations. The

other six mainline valves would be located in upland areas within or directly adjacent to the new permanent pipeline right-of-way in close proximity to roads. There appear to be no environmental issues or sensitive environmental resources that would be affected on or near the majority of proposed mainline valve sites; consequently there is generally no need to assess alternatives.

However, the two mainline valves that are proposed to be located near Compressor Station 2 and U.S. Highway 82 would be located within a wetland. Each valve would permanently impact about 0.02 acre of the wetland. Due to the extent of wetlands in the vicinity of these proposed mainline valve sites, we could not identify any practical alternatives that would avoid wetlands. Therefore, we believe the wetland impacts are unavoidable. In order to mitigate for this wetland loss, Southern has proposed to obtain wetland bank mitigation credits as part of its COE authorization.

The two valves associated with Southern's existing Rincon Gate Meter Station site would also affect wetlands as part of that construction and operation. We believe locating these facilities with the other proposed facilities would minimize environmental impacts. The analysis of practical alternatives for the Rincon Gate Meter Station site is described in the Meter Stations section above.

3.3.3.6 Launcher/Receivers

The proposed pig launchers/receivers would be located at compressor station, meter station, or mainline valve locations. This includes a launcher/receiver facility that would be located in wetlands as part of the Rincon Gate Meter Station site. We believe locating these facilities with the other proposed facilities would minimize environmental impacts. The analysis of practical alternatives for the Rincon Gate Meter Station site is described section 3.3.3.4 above. With the exception of the Rincon Gate Meter Station, there are no environmental issues or sensitive environmental resources that could be affected on or near the proposed launcher/receivers; consequently, there is no need to assess alternative sites.

3.4 FGT EXPANSION PROJECT ROUTE AND FACILITY SITE ALTERNATIVES

3.4.1 Route Alternatives

No practical route alternatives were identified for FGT or are considered necessary because the proposed FGT Expansion Project would follow FGT's existing pipeline system and would be collocated adjacent to existing pipeline facilities. Therefore, we did not evaluate route alternatives further.

3.4.2 Brookridge/Waterline Route Variation

During FGT's open house, residents from the Brookridge Community located on the east side of the FPL corridor between MPs 111.6 and 113.4 of Loop G in Hernando County expressed concern about the proposed loop being constructed too close to existing and planned residential developments. FGT originally planned to construct Loop G on the east side of the FPL corridor in this area (Original Route). The Brookridge Community asked FGT to place the new pipeline adjacent to FGT's existing pipeline located on the west side of the FPL corridor, rather than in a new pipeline right-of-way on the east side of the FPL corridor which would be closer to their community. In addressing this concern, FGT identified that an existing waterline and Hernando County water supply wells are also located on the east side of the FPL corridor between MPs 115.1 and 116.3, and are associated with a water collection and supply plant located east of MP 115.6.

FGT has agreed to implement the Brookridge/Waterline Variation to minimize impacts to residents of the Brookridge Community as well as concerns of crossing a known water line. This variation is about 0.1 mile longer than the Original Route and follows FGT's existing 30-inch-diameter

pipeline on the west side of the FPL corridor from about 0.2 mile south of Scrub Oak lane (about MP 110.8) to the southern end of Loop G about 0.6 mile south of Elgin Boulevard (about MP 117.0). No wetlands or waterbodies are crossed by either route. FGT's proposed Brookridge/Waterline Variation would address the Brookridge Community concerns and be located within 50 feet of 41 fewer residences and 8 fewer public water supply wells than the Original Route. The new route would be within 50 feet of 23 residences that would not have been affected by the Original Route. However, there is an existing FGT pipeline between the residences on the west side and the proposed line.

For these reasons, we concur with FGT that the Brookridge/Waterline Variation is the preferred route. We have reviewed this variation as part of the proposed project analyzed in section 4.0. We have concluded that there are currently no unresolved environmental issues associated with FGT's proposed loops that warrant any further route variation analysis.

3.4.3 Aboveground Facility Alternatives

With the exception of FGT's proposed blowdown valves and the Cypress/FGT Interconnect and Long Branch Regulator Station, all aboveground facilities associated with the FGT Expansion Project would be located within or adjacent to existing aboveground facility sites. As a result, no alternatives were evaluated for the proposed improvements at existing aboveground facility sites or appear necessary.

FGT's proposed Cypress/FGT Interconnect and Long Branch Regulatory Station would be collocated adjacent to Southern's proposed FGT Meter Station and no alternative locations have been evaluated or appear necessary. Of FGT's proposed blowdown valves, all would require new permanent right-of-way outside the proposed pipeline right-of-way, and the locations are typically adjacent to isolating block valves. Three of the blowdown valves would be located in open upland and no alternative locations have been evaluated or appear necessary for those blowdown valve locations. One blowdown valve along Loop K would permanently impact about 0.8 acre of forested wetland. We asked FGT to identify an alternative for that blowdown valve location that would avoid or minimize the forested wetland impact. Two alternative sites were evaluated.

Alternative Site 1 is located slightly east of the proposed site and would be reduced slightly in size (see figure 3.4.3-1). Although temporary extra workspace requirements would not change in the area between the blowdown valve site and proposed pipeline loop, the site access road and the western edge of the proposed permanent facility site would be shifted about 30 feet to the east to avoid permanently impacting the forested wetland in that area. Shifting the access road alignment would result in a new permanent access road that would permanently affect about 0.9 acre of forested upland vegetation. On the northern and eastern edges of blowdown valve site, the temporary workspace and permanent facility dimensions would also be reduced by about 13 feet on each side which would reduce the footprint of temporary wetland impacts by about 0.4 acre, and would eliminate permanent impact to wetlands due to the blowdown valve site footprint. Although the Alternative Site 1 would require construction of a new permanent access road, the reduction in temporary and permanent forested wetland impacts is preferable to the proposed action.

Non-Internet Public

FINAL ENVIRONMENTAL IMPACT STATEMENT FOR THE
PROPOSED CYPRESS PIPELINE PROJECT and
PHASE VII EXPANSION PROJECT
Docket Nos. CP05-388-000 and CP06-001-000

Figure 3.4.3-1 FGT Expansion Project – Alternative Blowdown Valve Sites, MP 53.7

Public access for the above information is available only through the Public Reference Room, or by e-mail at public.referenceroom@ferc.gov.

Alternative Site 2 would be located about 250 feet east of the proposed site in an area that would not impact wetlands. This alternative would require about 250 feet of additional pipeline to reach the site and would also require a new permanent access road. The new permanent access road would use about 300 additional feet of an existing dirt road compared to the proposed action, and about 270 additional feet compared to Alternative 1. However, the amount of new permanent access road that would need to be constructed from the existing dirt road to the Alternative Site 2 location, would permanently impact only about 0.6 acre of forested land, which is about 0.3 acre less than that which would be impacted by Alternative Site 1.

In the draft EIS, we recommended that FGT complete a detailed design and consult with the landowner to determine if it could install the blowdown valve facilities at Alternative Site 2. In its comments on the draft EIS, FGT indicated that, based on consultations with the landowner, Alternative Site 1 would be preferable to Alternative Site 2 because it would be sited closer to the existing pipelines and property line and would minimize impacts on the landowner's property. In addition, FGT completed a detailed design and reduced the footprint of the Alternative Site 1 to avoid permanently impacting wetlands. FGT indicated that it would agree to Alternative Site 1 as the location for its remote blowdown valve along Loop K. Based on the updated information provided by FGT, we agree that Alternative Site 1 should be incorporated into FGT's proposed facilities.