FLORIDA SOUTHEAST CONNECTION PROJECT

RESOURCE REPORT 2

Water Use and Quality

FERC Docket No. PF14-2-000

Pre-Filing Draft

June 2014

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Filing Requirement	**Location in Environmental Report**
☒ Identify all perennial surface waterbodies crossed by the Project and their water quality classification. (§380.12(d)(1)). ♦ Identify by milepost ♦ Indicate if potable water intakes are within 3 miles downstream of the crossing.	Section 2.3.3 and Table 2.3-1
☒ Identify all waterbody crossings that may have contaminated waters or sediments. (§380.12(d)(1)). ♦ Identify by milepost ♦ Include offshore sediments.	Section 2.3.5 and Table 2.3-2
☒ Identify watershed areas, designated surface water protection areas, and sensitive waterbodies crossed by the Project. (§380.12(d)(1)). ♦ Identify by milepost	Section 2.3.1, 2.3.4 and 2.3-2
☒ Provide a table (based on NWI maps if delineations have not been done) identifying all wetlands, by MP and length, crossed by the proposed project (including abandoned pipeline), and the total acreage and acreage of each wetland type that would be affected by construction. (§380.12(d)(1 & 4)).	Section 2.4.2 and Table 2.4-1
☒ Discuss construction and restoration methods proposed for crossing wetlands, and compare them to staff's Wetland and Waterbody Construction and Mitigation Procedures. (§380.12(d)(2)).	Section 2.4.4 and Section 2.4.5
☒ Describe the proposed waterbody construction, impact mitigation, and restoration methods to be used to cross surface waters and compare to the staff's Wetland and Waterbody Construction and Mitigation Procedures. (§380.12(d)(2)). ♦ Although the Procedures do not apply offshore, the first part of this requirement does apply. Be sure to include effects of sedimentation, etc. This information is needed on a mile-by-mile basis and will require completion of geophysical and other surveys before filing. (See also Resource Report 3)	Sections 2.3.6 and 2.3.7
☒ Provide original National Wetlands Inventory (NWI) maps or the appropriate state wetland maps, if NWI maps are not available, that show all proposed facilities and include milepost locations for proposed pipeline routes. (§ 380.12(d)(4)).	Appendix 1A, Resource Report 1
☒ Identify all U.S. Environmental Protection Agency (USEPA) or state-designated aquifers crossed. (§ 380.12(d)(9)). ♦ Identify the location of known public and private groundwater supply wells or springs within 150 feet of construction.	Section 2.2.2 and Table 2.2-1

ACRONYMS AND ABBREVIATIONS

ATWS	Additional temporary workspace
BMPs	Best management practices
CWA	Clean Water Act
EDB	Ethylene dibromide
EFH	Essential Fish Habitat
EI	Environmental Inspector
ERC	Environmental Regulation Commission
FAC	Florida Administrative Code
FDEP	Florida Department of Environmental Protection
FDOH	Florida Department of Health
FERC	Federal Energy Regulatory Commission
FPL	Florida Power and Light Company
FSC	Florida Southeast Connection, LLC
GIS	Geographic Information System
gpd	Gallons per day
HDD	Horizontal directional drill
HUC	Hydrologic Unit Code
mg/l	Milligrams per liter
MP	Milepost
NRI	National Rivers Inventory
NWI	National Wetland Inventory
OFW	Outstanding Florida Waters
OHWM	Ordinary High Water Mark
PEM	Palustrine emergent
PFO	Palustrine forested
Project	Project
PSS	Palustrine scrub-shrub
PWS	Public Water Supply
Sabal Trail	Sabal Trail Transmission Pipeline Project
SDWA	Safe Drinking Water Act
SPC Plan	Spill Prevention and Control Plan
SSA	Sole source aquifer
SWAPP	Source Water Assessment and Protection Program
T&E	Threatened and endangered
TAR	Temporary access road
TMDL	Total Maximum Daily Load
U.S.	United States
USACE	U.S. Army Corps of Engineers
USDOT	U.S. Department of Transportation
USEPA	U.S. Environmental Protection Agency
USGS	U.S. Geological Survey

2.0 RESOURCE REPORT 2 - WATER USE AND QUALITY

2.1 Introduction

Florida Southeast Connection, LLC ("FSC"), a subsidiary of NextEra Energy, Inc., is seeking a certificate of public convenience and necessity ("Certificate") from the Federal Energy Regulatory Commission ("FERC") pursuant to Section 7(c) of the Natural Gas Act authorizing the construction and operation of an approximately 127 mile natural gas pipeline known as the Florida Southeast Connection Project ("FSC Project"). The FSC Project is designed to meet the growing demand for natural gas by the electric generation, distribution and end use markets in Florida. It will also provide additional source diversity through a connection to a new interconnection hub in central Florida ("Central Florida Hub") to be constructed as part of the Sabal Trail Transmission Pipeline Project ("Sabal Trail"). Sabal Trail is the subject of a separate, but related, certificate filing to the FERC.

The FSC Project will increase natural gas transportation capacity and availability to southern Florida by adding a new third pipeline in central and southern Florida. Upon the anticipated in-service date of May 2017, the FSC Project will be capable of providing approximately 640 million cubic feet per day of natural gas to an existing gas yard at Florida Power & Light Company's ("FPL") Martin Clean Energy Center.

The FSC Project involves the construction and operation of approximately 127 miles of up to 36-inch-diameter pipeline and the construction and operation of one meter station (known as the Martin Meter Station). The FSC Project pipeline will start in Osceola County, Florida at the interconnection with Sabal Trail within the Central Florida Hub and will traverse Polk, Osceola, Okeechobee, St. Lucie, and Martin counties, terminating at the Martin Clean Energy Center in Martin County, Florida. The Martin Meter Station will be located at the terminus of the FSC Project at the Martin Clean Energy Center in Martin County, Florida. Other associated facilities will include access roads, pig launcher/receiver facilities, contractor yards, staging areas, and Additional Temporary Work Spaces ("ATWS"). A complete summary of the FSC Project facilities is provided in Table 1.2-1 of Resource Report 1 and a location map of the FSC Project facilities is provided as Figure 1.2-1 in Resource Report 1.

This Resource Report 2 describes the existing water resources and water quality in the FSC Project area, evaluates the potential impacts of construction and operation of the proposed FSC Project on those resources, and identifies proposed mitigation measures to avoid or minimize potential impacts on groundwater, surface waterbodies, and wetland resources. The following information was obtained from field surveys, review of available technical literature, and consultation with various federal, state, and local regulatory agencies. A checklist showing the status of the FERC filing requirements for this Resource Report 2 is included in the table of contents.

2.2 Groundwater Resources

2.2.1 Regional Aquifers Crossed by the FSC Project

The FSC Project facilities overlie two principal aquifer systems: the Floridan aquifer system and the surficial aquifer system (Miller, 1990). These aquifer systems are described in further detail below.

2.2.1.1 Floridan Aquifer System

The entire FSC Project area is underlain by the Floridan aquifer system, which serves as the primary source of groundwater in Florida (FDEP, 2007). Miller (1990) provides a comprehensive description of the Floridan aquifer system in the *Groundwater Atlas of the United States –*

Alabama, Georgia, South Carolina and Florida ("Groundwater Atlas"), which is summarized below.

The Floridan aquifer system underlies an area of approximately 100,000 square miles in the southeastern United States and includes all of Florida. A thick sequence of carbonate rocks (limestone and dolomite) of tertiary age comprises the Floridan aquifer system. The Avon Park Formation and the Ocala limestone are the thickest and most productive hydrogeologic units within the Floridan aquifer system.

The system is characterized by rocks that vary in permeability. In most places, the Floridan aquifer system is divided into the upper and lower Floridan aquifers, which are separated by a less-permeable confining unit. The altitude and rock type of this confining unit varies throughout the Floridan aquifer system. The confining unit restricts the movement of groundwater between the upper and lower Floridan aquifers.

The carbonate rocks of the Floridan aquifer system are readily dissolved where they are exposed at the land surface (unconfined) or are overlain by only a thin layer of confining material, which results in the development of sinkholes and karst topography in some areas. The large-scale porosity that develops as a result of dissolution of the carbonate rocks in the Floridan aquifer system creates large conduits in some places that store and transmit ground water. These conduits, which include caves, solution channels, and sinkholes allow tremendous volumes of water to pass quickly through the aquifer with little resistance to flow. Consequently, transmissivity, which is the capacity of an aquifer to transmit water, can be relatively high in the Floridan aquifer system.

The upper Floridan aquifer is highly permeable in most places and yields sufficient water supplies for most purposes. Transmissivity within the upper Floridan aquifer varies widely and is a function of the porosity of the rock. The approximate transmissivity rates in the FSC Project area range from less than 10,000 square-feet/day up to 250,000 square-feet/day (Miller, 1990).

Less is known about the lower Floridan aquifer, since it is found at greater depths; consequently, there is less data available. Similar to the upper Floridan aquifer, transmissivity rates vary widely depending on location and few actual estimates exist (O'Reilly and Spechler, 2002). However, transmissivity values developed from one model developed for a portion of the lower Floridan aquifer ranged from 5,000 to 700,000 ft^2/day (Sepulveda, 2002).

The ability of the Floridan aquifer system to transmit vast quantities of water have made it the primary water source for almost 10 million people and one of the most productive aquifers in the world (Marella and Berndt, 2005; Miller, 1990). The Floridan aquifer system provides water for several large cities, including Orlando, and St. Petersburg, Florida. In addition, the Floridan aquifer system provides water for hundreds of thousands of people in smaller communities and rural areas. In the southern portion of the state, where it is deeper and contains brackish water, the aquifer has been used for the injection of sewage and industrial waste (FDEP, 2007). The Floridan aquifer system is also pumped intensively for industrial and irrigation supplies. In 1985, an average of about 3 billion gallons per day ("gpd") of freshwater was withdrawn from the Floridan aquifer system for all purposes, with agriculture (44%) and industry (28%) constituting the majority of withdrawals. Lesser volumes were withdrawn for public water supply (21%) and domestic and commercial supplies (7%). Since that time, water withdrawals have increased steadily. The most recent available water withdrawal data for 2005 for Florida counties traversed by the FSC Project were reported as follows: Polk, 207 million gpd; Osceola, 135 million gpd; Okeechobee, 37 million gpd; St. Lucie, 43 million gpd and Martin, nine million gpd (Marella, 2009).

2.2.1.2 Surficial Aquifer System

In addition to the Floridan aquifer system, the FSC Project area is underlain by the surficial aquifer system, which overlies the Floridan aquifer system. In the southeastern United States, the surficial aquifer system includes any otherwise undefined aquifers that are present at the land surface (Miller 1990). The Groundwater Atlas (Miller, 1990) was the primary source of information used to summarize the characteristics of the surficial aquifer in this section.

The surficial aquifer system consists mostly of beds of unconsolidated sand, shelly sand, and shell. Typical aquifer depth is less than 50 feet; however, in Martin and St. Lucie Counties, depths can range from 200 to 400 feet thick. In places, clay beds are sufficiently thick and continuous to divide the system into two or three aquifers; in most areas, however, the surficial aquifer system is undivided. Precipitation enters the surficial aquifer system and generally flows from higher elevations to lower elevations. The groundwater within the surficial aquifer system exits as baseflow to streams, discharge to coastal waters and as downward recharge to deeper aquifers (FDEP, 2007). The transmissivity of the surficial aquifer system is extremely variable but rates have been reported to range from 1,000 to 10,000 square-feet/day (Miller, 1990). Some higher rates ranging from 25,000 to 50,000 square-feet/day have been reported in areas that overlie limestone or shell (Miller, 1990).

In general, the surficial aquifer yields less groundwater than the Floridan aquifer system. However, the surficial aquifer system is still used by a large number of people, principally for domestic, commercial, or small municipal supplies. In 1985, approximately 361 million gpd were withdrawn from the surficial aquifer system for public water supply, domestic and commercial uses (Miller, 1990). By 2005, this withdrawal volume increased to approximately 532 million gpd (Marella, 2009). The surficial aquifer system accounted for 10% of the public water supply groundwater withdrawal and 4% of the commercial-industrial self-supplied groundwater withdrawal in Florida in 2005 (Marella, 2009). The following water withdrawal levels from the surficial aquifer by county were reported in 2005: Polk, 0.1 million gpd; Osceola, 3.3 million gpd; Okeechobee, 9.6 million gpd; St. Lucie, 28.0 million gpd; and Martin, 29.1 million gpd (Marella, 2009).

2.2.2 Sensitive Groundwater Resources

Sensitive groundwater resources include sole source aquifers (“SSAs”), state-designated aquifers that are afforded special protection in each state, public and private water supply wells, springs, and wellhead and aquifer protection areas. Each of these sensitive groundwater resources as they relate to the FSC Project is discussed further below.

2.2.2.1 Sole Source Aquifers

SSA designations were defined by the U.S. Environmental Protection Agency (“USEPA”), pursuant to Section 1424(e) of the Safe Drinking Water Act (“SDWA”) of 1974, for an aquifer that provides a sole or principal source (greater than 50 percent) of drinking water for an area, where contamination of the aquifer could create a significant hazard to public health, and where there are no alternative water sources that could reasonably be expected to replace the water supplied by the aquifer (USEPA, 2012).

Although the FSC Project does not overlie a SSA, it is located within the streamflow and recharge source zone of the Biscayne aquifer (USEPA, 2014).

The Biscayne SSA is a surficial aquifer that encompasses approximately 4,000 square miles in southeastern Florida in Monroe, Dade, Broward, and Palm Beach counties (USEPA 2014a). The Biscayne aquifer supplies all municipal water supply systems from south Palm Beach County southward, including the system for the Florida Keys, which is supplied chiefly by pipeline from the mainland. It is a highly permeable wedge-shaped unconfined aquifer that is more than 200 feet thick in coastal Broward County and narrows in depth 35 to 40 miles inland in the Everglades.

2.2.2.2 State-Designated Aquifers

In addition to the USEPA designated SSA program, individual states may enact regulations protecting significant aquifer recharge areas used for public water supplies. The characteristics of state-designated aquifers underlying the proposed FSC Project facilities are described below.

Florida classifies groundwater into five categories (Classes G-1, F-1, G-II, G-III, G-IV) under Chapter 62-520 of the Florida Administrative Code ("FAC"). Classifications are based first on whether the water is potable (drinkable) or non-potable, then on the total of dissolved solids the water contains, and finally on whether the water is located in a confined or unconfined aquifer as defined by FAC 62-520.410(1). Classifications include the following:

1. Class G-I water is potable groundwater in a single source aquifer (where *single source* means that the aquifer is the only reasonably available source of potable water to a significant segment of the population). Class G-I water has a total dissolved solids content of less than 3,000 milligrams per liter ("mg/l") and is specifically reclassified as Class G-I by the Environmental Regulation Commission ("ERC").
2. Class F-I water designation is the same as G-I, but only includes the surficial aquifers (i.e., shallow aquifers that are close to the surface) in northeast Flagler County as described by FAC 62-520.460(1).
3. Class G-II waters are still potable, but have a total dissolved solids content up to 10,000 mg/L.
4. Class G-III waters are non-potable, are located in unconfined aquifers, and either have a total dissolved solids content of 10,000 mg/L or greater or have been declared non-potable by ERC.
5. Class G-IV waters are non-potable, are located in confined aquifers only, and have a total dissolved solids content of 10,000 mg/L or greater. Class G-IV waters receive the least amount of protection.

The Florida Department of Environmental Protection ("FDEP") affords the highest protection to single source aquifers (G-1). Based on consultation with FDEP, the groundwater classification in a given area is typically determined on a project-specific basis during permit review and groundwater classification mapping is not available. FSC will consult with FDEP and the appropriate Water Management Districts as necessary to determine the groundwater classifications of aquifers crossed by the FSC Project and whether any single source aquifers (G-1) are crossed prior to construction.

2.2.2.3 Public and Private Water Supply Wells and Springs

To identify any public and private water supply wells and springs within 150 feet of the FSC Project, FSC reviewed the Florida Department of Health ("FDOH") well survey database from its well surveillance program (FDOH, 2013) and FDEP's 2011, *Spring Locations* Geographic Information Systems ("GIS") shapefile (FDEP, 2011). The FDOH dataset includes information on all privately and publicly owned potable wells investigated as part of the well surveillance program (FDOH, 2013).

All known public and private supply wells within 150 feet of the construction work areas for the FSC Project are listed in Table 2.2-1**.** Prior to construction, FSC will verify the existence of public and private water supply wells within the vicinity of the construction work areas. Based on a review of the GIS *Spring Locations* shapefile (FDEP, 2011) there are no springs within 150 feet of the construction work area of the FSC Project.

2.2.2.4 Wellhead and Aquifer Protection Areas

Under a 1986 amendment to the SDWA, each state is required to develop and implement a wellhead protection program in order to identify the land and recharge areas contributing to public supply wells and prevent the contamination of drinking water supplies (FDEP, 2013). The SDWA was later updated in 1996 to require the development of a broader-based source water assessment program, which includes the assessment of potential contamination to both groundwater and surface water through a watershed approach.

The Florida wellhead protection program is administered by the FDEP under the Wellhead Protection rule, Chapter 62-521, FAC, and the groundwater protection measures (FDEP, 2013). The Wellhead Protection Rule establishes a 500-foot radius circular wellhead protection area around all wells which serve community and non-transient, non-community public water systems (FDEP, 2013). The rule prohibits certain new installations from locating in wellhead protection areas, and specifies additional performance standards for other new installations and activities. FDEP regulatory programs also implement specific performance, permitting, and monitoring criteria designed to protect groundwater on a statewide basis.

FSC reviewed the Florida Source Water Assessment and Protection Program ("SWAPP") GIS data (FDEP, 2008) to determine whether the FSC Project crosses any designated assessment areas. As described by FDEP (2008), assessment areas were created for each public water supply ("PWS") well to identify potential contamination sources. PWS wells are divided into three categories: 1) noncommunity, 2) community serving populations less than 1,000 persons, and 3) community serving populations greater than or equal to 1,000 persons. Assessment areas for noncommunity wells consist of a 500 foot radius buffer of the well. Assessment areas for community wells serving populations <1,000 persons consist of a 1,000 foot radius buffer of the well. Assessment areas for community wells serving populations >=1,000 persons consist of a 1,000 foot radius buffer of the well, plus a five year groundwater travel time. Based on a review of the SWAPP dataset, the FSC Project facilities are within 150 feet of 20 SWAPP areas, which are presented in Table 2.2-1.

2.2.3 Sources of Potentially Contaminated Groundwater

FSC reviewed the FDEP *Groundwater Contamination Areas* GIS shapefile (FDEP, 2010) to determine whether any of the FSC Project facilities are located within areas with potentially contaminated groundwater. The *Groundwater Contamination Areas* shapefile is a statewide map showing the boundaries of delineated areas of known groundwater contamination. Thirty-eight Florida counties have been delineated primarily for the agricultural pesticide ethylene dibromide ("EDB"), and to a much lesser extent, volatile organic and petroleum contaminants. This GIS shapefile represents approximately 427,897 acres in 38 counties in Florida that have been delineated for groundwater contamination. However, it does not represent all known sources of groundwater contamination for the state. Based on a review of the *Groundwater Contamination Areas* shapefile, FSC facilities cross five groundwater contamination areas between MP 12 and MP 35 in Polk County. The mapped groundwater contamination areas are crossed by the pipeline, temporary easements, additional temporary workspaces, contractor yards and access roads. The pesticide EDB is the contaminant of concern in each of the five groundwater contamination areas.

2.2.4 Groundwater Impacts and Mitigation

The FSC Project is not expected to adversely impact groundwater quality or supply. Construction activities associated with the FSC Project that have the potential to impact groundwater include shallow excavations, Horizontal Directional Drills ("HDDs"), blasting impacts, hydrostatic test discharges, and potential spills or leaks of contaminants from the refueling of construction vehicles or storage of fuel, oil, and other fluids. FSC proposes to implement construction practices designed to reduce and/or mitigate potential impacts on groundwater during construction as detailed in FSC's Plan and Procedures and FSC's Spill Prevention and Control Plan ("SPC Plan") (See Appendix 7C in Resource Report 7). FSC's contractors will adhere to these general practices related to groundwater protection including:

- Enforcing restrictions on refueling locations and storage of contaminants;
- Installation of permanent trench plugs, where needed, to maintain existing groundwater flow patterns;
- Limited and controlled use of herbicides on the right-of-way only in appropriate circumstances (where other options are impractical or not available) and consistent with applicable laws, rules, and regulations, as well as any enforceable limitations and controls arising from agency consultations;
- Prohibiting use of herbicides in or within 100 feet of wetlands or waterbodies, except as allowed by the appropriate land management agency or state agency.

Additional information on groundwater impacts and mitigation associated with various aspects of construction is provided in the following sections.

2.2.4.1 Trench Excavation

Dewatering of the pipeline trench, the only activity requiring pumping of groundwater, may be necessary in areas where there is a high water table. However, pipeline construction activities within a particular location are typically completed within several days, and any lowering of localized groundwater is expected to be temporary. To recharge the aquifer and prevent silt laden waters from flowing into streams and wetlands, FSC proposes to discharge all water from trench dewatering activities into well-vegetated upland areas, or into straw bale structures if vegetation is insufficient.

Construction activities will be conducted in accordance with FSC's Plan and Procedures to minimize potential impacts on groundwater in the vicinity of the FSC Project. The use of dewatering structures at stream crossings will minimize groundwater impacts during dewatering operations.

FSC will make all reasonable efforts to discharge trench water in a manner that avoids damage to adjacent agricultural land, crops, and pasture. Damage includes, but is not limited to, the inundation of crops for more than 24 hours, deposition of sediment in ditches, and the deposition of gravel in fields or pastures.

2.2.4.2 Horizontal Directional Drill

The FSC Project proposes to use HDD in three crossing locations: the Kissimmee River at Milepost ("MP") 53, under the railroad adjacent to the C-23 Canal near MP 115, and State Road (SR) 710 and the CSX Railroad near MP 126. See Appendix 1A in Resource Report 1 for locations of HDD crossings and site-specific crossing plans. A contingency plan outlining procedures to be implemented in the case of drill failure or the inadvertent release of drilling fluid is provided in Appendix 2A.

2.2.4.3 Contaminant Spills

Potential spills or leaks of contaminants resulting from the refueling of construction vehicles or storage of fuel, oil, and other fluids during construction, has the potential to affect groundwater.

FSC's SPC Plan for construction addresses preventative measures to be used to minimize the potential impacts of a contaminant spill on groundwater resources (see Appendix 7D of Resource Report 7). Spill reporting will be conducted in accordance with all federal, state, and local regulations.

Any potential contaminants, chemicals, lubricating oils, solvents, or fuels used during construction will be stored in upland areas at least 100 feet from wetlands and waterbodies. All such materials and spills (if any) will be handled in accordance with the SPC Plan. Except where absolutely necessary, or required to otherwise minimize overall impacts on the environment, there will be no refueling or lubricating of vehicles or equipment within 100 feet of a waterbody. Under no circumstances will refuse be discarded in waterbodies, trenches, or along the construction corridor. In accordance with the SPC Plan, FSC will conduct routine inspections of tanks and storage areas to help reduce the potential for spills of contaminants.

2.3 Surface Water Resources

Surface water resources, potential impacts on surface waters as a result of the FSC Project and mitigation measures that FSC will take to minimize or avoid potential impacts are discussed in the following sections. Surface water resources in the FSC Project area were initially identified using desktop sources such as United States Geological Survey ("USGS") topographic maps and GIS hydrology data layers. Surface water boundaries were verified and surveyed during wetland field delineations conducted in 2013 and 2014.

2.3.1 Watersheds

The FSC Project facilities are located within four different Cataloguing Unit watersheds (i.e., 8-digit Hydrologic Unit Code ("HUC") as defined by the USGS. A hydrologic unit can accept surface water directly from upstream drainage areas, and indirectly from associated surface areas such as remnant, non-contributing, and diversions to form a drainage area with single or multiple outlet points (NRCS, 2007). The four watersheds crossed by the FSC facilities include the Kissimmee River, Upper Saint Johns River, Vero Beach, and the Southeast Florida Coast watersheds, which are described briefly below.

2.3.1.1 Kissimmee River Watershed

The FSC pipeline traverses the Kissimmee River watershed (HUC 03090101) from MP 0 to MP 70. The Kissimmee River watershed covers approximately 2,940 square miles in the Central Florida Peninsula and extends approximately 105 miles from Orlando to Lake Okeechobee.

The watershed is predominantly rural with the majority of the population, and more densely developed areas, situated along the watershed's northern boundary. This urbanized section of the watershed includes a small portion of the city of Orlando and the cities of Kissimmee and St. Cloud. Agricultural lands, wetlands, and upland forests are the dominant land cover in the remainder of the watershed. Citrus and cattle farming are the primary agricultural commodities in the region. Stormwater runoff from urbanized areas, hydrologic modifications, and pollution from agricultural operations may contribute to elevated nutrient concentrations in surface and groundwater within the watershed (FDEP, 2007a).

The Kissimmee River watershed lies at the northern end of the Everglades ecosystem. Historically, water from the Kissimmee River slowly meandered into Lake Okeechobee and exited unimpeded from the lake southward into the Everglades through small tributaries and broad sheetflow during the rainy season. The river was reconfigured in the 1960s into a 56-mile-long canal (C-38) for flood control. Construction of the C-38 altered the hydrology, water quality, and wetlands in the Kissimmee River watershed (FDEP, 2007a).

2.3.1.2 Upper St. Johns River Watershed

The FSC pipeline traverses the Upper St. Johns River watershed (HUC 03080101) from MP 70 to MP 92. The watershed extends approximately 110 river miles from the headwaters of Fort Drum Creek to its confluence with the Econlockhatchee River (SJRWMD, 2007). The St. Johns River is a low gradient river with an extensive floodplain. Marsh communities within the floodplain provide flood storage capacity within the watershed. The watershed includes 46 blackwater streams and a number of shallow lakes (SJRWMD, 2007).

The St. Johns River watershed has been altered extensively over the last 50 years. By the early 1970's, 62 percent of the 100-year floodplain, and 42 percent of the annual floodplain had been diked, drained, and converted to agricultural production (SJRWMD, 2007). In 1983, only 35 percent of the original floodplain remained, and hydrology within the watershed had been severely altered (SJRWMD, 2007). Much of the watershed today is utilized for agriculture, which includes the production of row crops, citrus and cattle.

Despite the impacts associated with development within the watershed, the Upper St. Johns River remains an ecosystem of state-wide and national significance. The upper watershed contains the largest freshwater marsh in the region, which is also one of the largest freshwater marshes in the state (SJRWMD, 2007).

2.3.1.3 Vero Beach Watershed

The FSC pipeline traverses a small portion of the Vero Beach watershed (HUC 03080203) from MP 92 to MP 97. The Vero Beach watershed in the vicinity of the FSC pipeline is primarily agricultural land and wetland based on a review of the Florida state land use/land cover data (Florida Watershed Management Districts, 2011). Soils are predominately medium fine sand and silt based on a review of environmental geology data (FDEP, 2001).

2.3.1.4 Southeast Florida Coast Watershed

The FSC pipeline traverses the Southeast Florida Coast watershed (HUC 03090206) from MP 97 to MP 126. Subwatersheds crossed by the FSC pipeline within the larger Southeast Florida Coast watershed include Cow Creek, Cypress Creek, and the St. Lucie canal. The Southeast Florida Coast watershed in vicinity of the FSC pipeline is primarily agricultural land and wetland based on a review of the Florida state land use/land cover data (Florida Watershed Management Districts, 2011). Many of the agricultural lands are former wetlands that were previously drained. Soils within the watershed include a mix of medium fine sand and silt and shelly sand and clay (FDEP, 2001).

2.3.2 Water Quality Classification

The FDEP defines water use classifications based on the most beneficial present and future uses of a waterbody under FAC Chapter 62-302. Water quality classifications are arranged in order of the degree of protection required, with Class I waters having the most stringent water quality protection and Class V the least. All surface waters of Florida have been classified according to the following designated uses:

- Class I: Potable Water Supplies;
- Class II: Shellfish Propagation or Harvesting;
- Class III: Fish Consumption; Recreation; Propagation and Maintenance of a Healthy, Well-Balanced Population of Fish and Wildlife;

- Class III-Limited: Fish Consumption; Recreation; Propagation and Maintenance of a Limited Population of Fish and Wildlife;
- Class IV: Agricultural Water Supplies; and
- Class V: Navigation, Utility and Industrial Use.

All surface waters in the State of Florida are designated as Class III, to support recreation and fish and wildlife, unless they are specifically listed in FAC 62-302.400(16) or they meet the criteria for Class IV. All waterbodies crossed by the Project are Class III waters, which is more protective than the Class IV designation. See Table 2.3-1 for the water quality classification of waterbodies crossed by the FSC Project facilities.

2.3.3 Waterbodies Crossed by the Project

Surface waterbodies documented along the FSC Project include major rivers, streams, canals and associated tributaries. A waterbody, as defined by the FERC, is "any natural or artificial stream, river, or drainage with perceptible flow at the time of crossing, and other permanent waterbodies such as ponds and lakes." The U.S. Army Corps of Engineers ("USACE") has jurisdiction over "waters of the U.S., including wetlands", pursuant to Section 404 of the federal CWA. Waterbodies include streams with perennial, intermittent, or ephemeral flow. Perennial streams flow year-round. Typically, intermittent streams will flow continuously during wet seasons, but may be dry for a portion of the year. Ephemeral streams flow only for a short period following major rainfall events. Intermittent and ephemeral streams may be dry at the time of construction, depending on the time of year and rainfall conditions.

The boundary of non-tidal surface waters potentially subject to USACE jurisdiction is defined by the Ordinary High Water Mark ("OHWM"), except where wetlands are present. The OHWM is the line on the shore established by the presence and/or fluctuations of water, and which is indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas. Intermittent and ephemeral streams with an OHWM, and other surface waters that are dry at the time of crossing, may be jurisdictional as "waters of the U.S." The FERC defines waterbodies as being minor if they are less than or equal to 10 feet wide at the crossing location, intermediate if they are greater than 10 feet wide but less than or equal to 100 feet wide, and major if they are greater than 100 feet wide at the crossing location.

The term "waterbody" as it is used in this Resource Report is inclusive of all "waters of the U.S.," other than wetlands, that are potentially jurisdictional to the USACE, and all waterbodies as defined by the FERC. A list and description of all waterbodies FSC delineated within the FSC Project area are provided in Table 2.3-1. The types of waterbodies identified and delineated include man-made ditches/swales, canals, cattle ponds, lakes, ponds/reservoirs, streams/sloughs, and the Kissimmee River. The majority of the waterbodies within the Project area are man-made ponds and ditches.

2.3.3.1 Pipeline Facilities

The FSC pipeline will cross a total of 41 waterbodies of varying widths and flow types (ephemeral, intermittent or perennial). Table 2.3-1 contains the list of the waterbodies crossed by the FSC pipeline, including MP, crossing width, state water quality classification, flow type and the proposed crossing method. Fisheries crossed by the Project are discussed in Section 3.2 of Resource Report 3. Waterbodies crossed by the pipeline in each county are described below.

Polk County

The FSC pipeline crosses 13 waterbodies in Polk County, which includes nine perennial streams/canals, one intermittent waterbody, and three ponds (see Table 2.3-1). The following named streams are crossed in Polk County: Snell Creek and Weohyakapka Creek. FSC has proposed to cross all of the waterbodies in Polk County using the open cut method.

Osceola County

The FSC pipeline crosses eight waterbodies in Osceola County, which includes seven perennial streams/canals and one ephemeral waterbody (see Table 2.3-1). The following named streams are crossed in Osceola County: the Kissimmee River, Blanket Bay Slough, Cow Log Branch, Cow Log Branch tributaries and Padgett Branch. The Kissimmee River crossing is the most significant crossing along the FSC pipeline with a crossing distance of approximately 277 feet. The Kissimmee River will be crossed using HDD construction methods while all other waterbodies in Osceola County will be crossed using open cut methods.

Okeechobee County

The FSC pipeline crosses eleven waterbodies in Okeechobee County, which includes eight perennial streams/canals, two intermittent waterbodies and one pond (see Table 2.3-1). The following named streams are crossed in Okeechobee County: Parker Slough, Sweetwater Branch, Boggy Branch, Fort Drum Creek, Fort Drum Creek tributary, and Cow Creek tributary. FSC has proposed to cross all of the waterbodies in Okeechobee County using the open cut method.

St. Lucie County

The FSC pipeline crosses six waterbodies in St. Lucie County, which includes three perennial streams/canals and three intermittent waterbodies (see Table 2.3-1). Cypress Creek is the single named waterbody crossings in St. Lucie County. An 18-foot canal crossing will be crossed via bore method at MP 106.4 and the 44-foot canal crossing at MP 115.5 will be crossed using HDD construction techniques. The three remaining waterbodies in St. Lucie County will be crossed using open-cut techniques.

Martin County

The FSC pipeline crosses three waterbodies in Martin County, none of which are named (see Table 2.3-1). The 42-foot crossing of the canal at MP 126 will be crossed using via bore method, while the remaining two waterbodies will be crossed using open-cut techniques.

2.3.3.2 Access Roads, and Contractor Yards

Access roads associated with the FSC Project will cross four waterbodies and there are three waterbodies associated with FSC contractor yards (Table 2.3-1).

2.3.4 Sensitive Surface Waters

Sensitive surface waters include all waterbodies that do not meet state water quality standards or have been designated for intensive water quality management, waterbodies containing federally or state-listed threatened or endangered species or critical habitat, waterbodies that support fisheries of special concern, waterbodies that are crossed near a surface water intake, and any waterbodies afforded national or state status for exceptional quality, and waterbodies listed on the National Rivers Inventory (“NRI”). Other factors that can provide a basis for sensitivity include the location of a waterbody within a protected watershed, steep banks and other characteristics that might contribute to high risk of erosion impacts, and important riparian areas. Table 2.3-2 identifies all sensitive waterbodies crossed by the FSC pipeline and indicates the basis for their sensitivity. Sensitive waterbodies include impaired surface waters and are described in further detail in the sections below.

2.3.4.1 Impaired Surface Waters

As part of state water quality assessments, Section 303(d) of the federal CWA mandates that states must prepare a list of all waters that do not meet the water quality criteria for their designated uses and develop for each a Total Maximum Daily Load ("TMDL"), which establishes the maximum allowable discharge into a waterbody to better control for pollutant levels. Waters that do not meet these water quality criteria are considered impaired surface waters and can be impaired due to fecal coliform, dissolved oxygen levels and contaminated sediments. To determine whether any impaired waterbodies will be affected by the FSC Project, FSC reviewed the most recent comprehensive 303(d) list for Florida to identify any waterbodies crossed by the pipeline that are included in USEPA Categories 4 and 5. This list contains waterbody-parameter combinations that have been verified as impaired based on criteria and assessment methodologies in chapters 62-302 and 62-303, FAC, respectively. Category 4 includes waterbodies where TMDLs have been completed or cannot be completed due to the nature of the contamination, and Category 5 includes waterbodies where TMDLs need to be developed by the state.

Based on a review of the 303(d) list and a review of the online NEPAssist map, the FSC pipeline will cross one impaired waterbody, Fort Drum Creek, which is impaired for fecal coliform, at MP 88 (Table 2.3-2) (USEPA, 2014b).

2.3.4.2 Waters Containing Federally or State-listed Threatened or Endangered Species or Critical Habitat

None of the waterbodies affected by the FSC Project contain, or have the potential to contain, species managed by the National Marine Fisheries Service. In addition, they do not support essential fish habitat ("EFH") as defined under the Magnuson-Stevens Fishery Conservation and Management Act (Public Law 94-265 as amended through January 12, 2007). As the FSC Project occurs well inland of saltwater or tidal waters, there are no saltwater marine or estuarine fisheries habitats, and no anadromous or diadromous fish runs that occur within the FSC Project area. Furthermore, no state or federally-listed threatened or endangered ("T&E") or candidate species fish species occur within the FSC Project area. See Section 3.2 of Resource Report 3 for additional information on fisheries.

2.3.4.3 Waters that Support Fisheries of Special Concern

Waterbodies contain fisheries of special concern if they have fisheries of important recreational value, support natural coldwater fisheries, are included in special state fishery management regulations, or provide habitat for federally or state-listed threatened or endangered species, or candidate threatened or endangered fish species. Waterbodies that contain EFH, or have significant economic value because of fish stocking programs, commercial fisheries, or tribal harvest, are also considered sensitive because of fisheries of special concern.

As previously discussed, no listed T&E fish species (federal or state) or EFH are known to occur within any of the waters crossed by this project. No areas identified as significant fisheries habitat are present along the FSC Project with the exception of the Kissimmee River, which is a recreational fishery resource. The FSC Project will not have an adverse impact on Kissimmee River since the crossing of the lake will be by HDD (see Section 2.3.7.6). All other fishing lakes, rivers, or significant streams are avoided by the FSC Project and its construction methods. On small waterbodies where HDD is not used, impacts will be minimized and temporary. There will be no impacts on fisheries of special concern as a result of the FSC Project.

2.3.4.4 Waters Utilized as Surface Water Supplies and Potable Water Supply Intakes

The FDEP has the primary role of regulating public water systems in Florida. Authority derives from Chapter 403, Part IV, Florida Statutes and by delegation of the federal program from the USEPA. In Florida, assessment areas for community public water supply systems supplied by surface water are determined by using the 72-hour upstream flow, combined with the 100-year floodplain and a 200-foot buffer zone around the intake structures (FDEP, 2004). Based on an assessment of GIS data no surface water intakes or water supply watersheds have been identified near the FSC Project facilities to date (FDEP, 2014a).

2.3.4.5 National Rivers Inventory

The National Rivers Inventory ("NRI") designates over 3,400 free flowing river segments in the U.S. that possess outstandingly remarkable natural or cultural values, which are considered to be of national significance (NPS, 2007). The NRI is maintained by the National Park Service as a list of river segments that potentially qualify as national wild, scenic or recreational river areas. All federal agencies must seek to avoid or mitigate actions that would adversely affect one or more NRI segments. FSC reviewed the NRI list and determined that the FSC Project area does not include any river segments on the NRI list.

2.3.4.6 State Recognized Outstanding Quality Waters

In Florida, a waterbody can be designated as an Outstanding Florida Water ("OFW") if it is worthy of special protection because of its natural attributes. This special designation is intended to protect and maintain existing ambient quality. OFWs generally include the following surface waters:

- Waters in National Parks, Preserves, Memorials, Wildlife Refuges and Wilderness Areas;
- Waters in the State Park System and Wilderness Areas;
- Waters within areas acquired through donation, trade, or purchased under the Environmentally Endangered Lands Bond Program, Conservation and Recreation Lands Program, Land Acquisition Trust Fund Program, and Save Our Coast Program;
- Rivers designated under the Florida Scenic and Wild Rivers Program, Federal Wild and Scenic Rivers Act of 1968 as amended, and Myakka River Wild and Scenic Designation and Preservation Act;
- Waters within National Seashores, National Marine Sanctuaries, National Estuarine Research Reserves, and certain National Monuments;
- Waters in Aquatic Preserves;
- Waters within the Big Cypress National Preserve;
- Special Waters as listed in paragraph FAC 62-302.700(9)(i); and
- Certain Waters within the Boundaries of the National Forests (FAC 62-302.200 (26)).

Based on a review of the OFW GIS data layer (FDEP, 2006), the FSC Project does not cross any OFWs.

2.3.5 Waterbodies with Contaminated Sediments

The Section 303(d) impaired waterbodies described in Section 2.3.4.1 and Table 2.3-2 provided the basis for identifying waterbody crossings that may have the potential for encountering contaminated sediments. The FSC project will not cross any waterbodies with sediment contamination. The single impaired waterbody crossed (Fort Drum Creek) is impaired for fecal coliform, which is a concern for water quality and not sediment contamination.

2.3.5.1 Additional Temporary Workspace

In general, additional temporary workspace ("ATWS") is typically required on both sides of a waterbody crossing for spoil storage. These work areas will be located at least 50 feet away from the waterbody edge, topographic and other site specific conditions permitting. If conditions do not permit a 50-foot setback, FSC will request deviations from FERC's Wetland and Waterbody Construction and Mitigation Procedures ("FERC Procedures"). Table 2.3-3 identifies the locations where ATWS waterbody setback deviations are requested by the FSC pipeline.

2.3.6 Waterbody Construction Methods

The FSC pipeline segments will cross a total of 41 waterbodies. The waterbody construction procedures described below and the use of FSC's Procedures will minimize impacts.

2.3.6.1 General Procedures

Following surveying and staking, it is necessary to mobilize the required equipment at the waterbody crossing. To facilitate this process where HDD is not proposed, temporary bridges may be constructed across the waterbody during clearing and grading activities for construction equipment. Any temporary bridges will be removed during final restoration.

In general, construction equipment and vehicle refueling and lubricating takes place in upland areas located more than 100 feet from the edge of a waterbody (or wetland), where practicable. In addition, fuels, lubricating oils, petroleum products, and other hazardous materials are not stored within 100 feet of an aquatic resource. However, instances may arise where equipment refueling and lubrication near or in a waterbody are necessary. For example, stationary equipment, such as a hydrostatic test water pump or pumps needed to perform a dam and pump crossing, may need to operate continuously on the bank of a waterbody. The SPC Plan addresses the handling of fuel and other hazardous materials in or within 100 feet of a waterbody, which may be approved with conditions by the Environmental Inspector ("EI") assigned to the FSC Project.

If trench dewatering is necessary in or near a waterbody, the removed trench water will be discharged into an energy dissipation/sediment filtration device, such as a geotextile filter bag or straw bale structure located away from the water's edge to prevent heavily silt-laden water from flowing into the waterbody in accordance with the FSC Plan and Procedures and all applicable permits. Monitoring will be conducted to ensure that all flow from the structure is infiltrating into the underlying soil. See Section 1.7.1.2 of Resource Report 1 for additional waterbody construction-related information.

2.3.6.2 Clearing

Clearing involves the removal of all trees and brush from the construction workspace. Woody vegetation along the permanent easement is cleared to the edge of the waterbody. However, where available, a 50-foot wide herbaceous strip is left on the approach until immediately prior to construction to provide a natural sediment filter. This strip helps minimize the potential for erosion adjacent to the waterbody and sedimentation from cleared upland areas. With the exception of stream buffers and wetlands, stumps are typically removed over the width of the permanent right-of-way. During clearing, temporary erosion control devices (sediment barriers) will be installed and maintained adjacent to the waterbody and within the construction work area as needed to minimize the potential for sediment runoff.

2.3.6.3 Temporary Erosion and Sediment Control

Immediately following initial ground disturbance, sediment barriers will be installed along waterbody boundaries within the right-of-way and along limits of the right-of-way upslope of waterbodies. All sediment barriers will be maintained during construction and repaired as necessary until permanent erosion controls, or restoration of adjacent upland areas, is complete in accordance with FSC's Procedures.

2.3.6.4 Equipment Bridges Across Waterbodies

Where necessary, FSC will install temporary equipment bridges across waterbodies for access along the proposed right-of-way. Equipment bridges will generally be constructed of culverts (or flumes) and clean rock-fill or free-spanning bridges (See Figure 1.7-4 in Resource Report 1).

A culvert or flume bridge involves using flume pipes to convey the flow of water, with the number of flumes needed dependent on the potential flow of water at the time of construction.

Each bridge will typically be designed to accommodate the highest stream flow expected to occur. Bridges will be maintained to prevent soil from entering the waterbody and to prevent restriction of flow, bank erosion, and stream scour during the period of time that the bridge is in use. After the bridges are removed, disturbed areas will typically be restored to existing conditions. See Section 1.7.1.2 of Resource Report 1 for additional information on equipment bridges across waterbodies.

2.3.6.5 Standard Crossing Methods

FSC understands FDEP's turbidity limits in surface waters and will work to minimize turbidity through the use of the FSC's Procedures. Smaller waterbodies will be crossed by open-cut wet construction method or dry crossing method (flume, bore, or dam-and-pump), with the final determination made at the time of construction depending on the existing flow in the waterbody. Agricultural ditches will be crossed by open-cut wet construction method or dry crossing method (flume, bore, dam-and-pump, or canal crossing methods) as described below. Waterbody crossing plans showing typical cross-sections of the various methods that may be employed are provided in Figures 1.7-6, 1.7-7 and 1.7-8 in Resource Report 1. The proposed waterbody crossing method for each waterbody crossed by the proposed pipeline is provided in Table 2.3-1.

To minimize potential impacts, waterbodies, streams, and rivers will be crossed as quickly and as safely as possible. Adherence to the construction procedures will ensure stream flow will be maintained throughout construction. Most stream crossings will be completed using conventional backhoe-type equipment and dry-crossing techniques, which are described in further detail in the following section and in Section 1.7.1.2 of Resource Report 1.

Open-Cut Wet Construction Method

The open-cut wet construction method involves excavation of the pipeline trench across the waterbody, installation of a prefabricated segment of pipeline, and backfilling of the trench with native material, with no effort to isolate flow, if any, from construction activities. Figure 1.7-6 in Resource Report 1 illustrates a typical open-cut wet crossing.

Construction will typically be scheduled so that the trench is excavated immediately prior to pipe laying activities. Excavated materials will be surrounded by sediment control devices to prevent sediment from returning to the waterbody, and streambeds and banks will be restored to preconstruction contours as part of restoration activities.

Flume Method

Flumes will be installed with sufficient capacity to transport the maximum flows that could be generated seasonally within the waterbody. The flumes, typically 40 to 60 feet long, will be installed prior to trenching and aligned to prevent impounding of water upstream of the construction area or to cause bank erosion downstream. The flumes will remain in place during pipeline installation, backfilling, and stream bank restoration. See Figure 1.7-7 in Resource Report 1 for typical flume method crossing plan.

Extended reach backhoes or similar equipment working from one or both banks will excavate the trench across the waterbody and under the flume pipes. After the trench is excavated to the proper depth, a prefabricated section of pipe will be positioned and lowered into the trench. The trench then will be backfilled with the excavated material from the stream.

Once the pipeline installation work is complete, the bottom contours of the streambed and the stream banks will be restored to preconstruction contours.

Dam-and-Pump Method

The dam-and-pump method involves installing temporary dams upstream and downstream of the proposed waterbody crossing. After dam installation, appropriately sized pumps will be used to transport the stream flow around the construction work area. Figure 1.7-8 in Resource Report 1 illustrates a typical dam-and-pump waterbody crossing.

Once the water has been successfully diverted, the trench will be excavated, and the pipeline installed. Erosion controls such as silt fences will be used to contain spoil materials and prevent downstream sedimentation from upland areas. Following the installation of the pipeline, the trench will be backfilled, the dams will be removed, and the waterbody will be restored to its preconstruction contours.

Canal Crossing Method

A specialized canal crossing method will be utilized to cross the numerous canals along the FSC pipeline route. Temporary trench plugs will be installed upstream and downstream of the crossing location and the area of the canal between the trench plugs will be dewatered. The trench will be excavated using standard trenching techniques and the pipeline will be installed within the trench. After the trench is backfilled, the temporary trench plugs will be removed and water flow will be restored.

2.3.6.6 Horizontal Directional Drill

The FSC Project proposes to use HDD in three crossing locations: the Kissimmee River at MP 53, under the railroad adjacent to the C-23 Canal near MP 115, and State Road (SR) 710 and the CSX Railroad near MP 126. The latter two HDD crossings are proposed due to the complexity of manmade facilities the pipeline will cross. The Kissimmee River HDD is proposed to avoid water quality impacts and impacts on fishery resources in the Kissimmee River. See Appendix 1A in Resource Report 1 and Figure 1.7-9 for the HDD crossing plan for the Kissimmee River. Anticipated hydrostatic test water volumes for the HDD pull sections are provided in Table 2.3-4.

FSC is also considering an alternative Kissimmee River HDD crossing location north of SR 60 across Lake Kissimmee. FSC is currently investigating the feasibility of using this optional crossing location in order to further minimize wetland impacts (1.48 acres of temporary herbaceous wetland impacts associated with northern alternative versus 14.86 acres of temporary impact on herbaceous wetlands associated with the southern alternative). The northern crossing alternative will be chosen if results of the feasibility analysis, which will include a geotechnical investigation, show this route change is practicable. A contingency plan outlining procedures to be implemented in the case of drill failure or the inadvertent release of drilling fluid during use of HDD is provided in Appendix 2A.

2.3.7 Surface Water Impacts and Mitigation

All waterbody impacts are proposed to be temporary in nature and limited to the construction time frame. The FSC Project is not anticipated to result in permanent fill or excavation in any waterbodies. Each waterbody crossing will be restored to its preconstruction contours and stabilized to minimize erosion. There will be temporary impacts on a number of natural streams, manmade ditches, and lakes, with a combined total impact area of approximately 5.7 acres. The Kissimmee River crossing will be constructed using HDD, which will minimize any temporary impacts at this location. The other waterbody crossings will be done using open-cut methods as depicted in Figures 1.7-6, 1.7-7 and 1.7-8 in Resource Report 1.

Pipeline construction across rivers and streams, or adjacent to surface waters, can result in temporary and long-term adverse environmental impacts if best management practices ("BMPs") are not utilized. Project construction may result in removal of riparian and aquatic vegetation, streambed and bank modifications, and sedimentation of waterbodies (from adjacent landscape as well as in-stream disturbance). In-stream trenching may lead to temporary increases in turbidity levels within waters downstream of the crossing. These activities may impact water quality, aquatic habitats, and fishery resources of surface waters, both directly and indirectly in the short-term.

Long-term impacts on water quality can result from alteration of stream banks and removal of riparian vegetation. If not stabilized and re-vegetated properly, soil erosion associated with surface runoff and stream bank sloughing can result in the deposition of large quantities of sediment into the waterbody over the long-term. Prolonged periods of exposure to high levels of suspended solids have been linked to fish egg and fry mortality and degradation of spawning habitat from the infiltration of the sediments in the stream bed. Potential impacts on fisheries resources from sedimentation are discussed further in Section 3.2.8 of Resource Report 3.

Impacts on waterbodies were initially eliminated or reduced to the extent practicable by using the following standards:

- Conducting an alternatives analysis to identify a route that will meet the project objectives while avoiding and minimizing environmental impacts on the maximum extent practicable;
- Avoiding permanent loss of waterbodies, by locating all permanent aboveground facilities in uplands;
- Limiting the corridor and construction right-of-way to previously disturbed areas (e.g., electric transmission line corridors, other pipeline corridors, and road and railroad right-of-ways) as much as practicable;
- Minimizing the width of the construction right-of-way through wetlands and waterbodies to 75-foot-wide compared to the typical 100-foot-wide construction width through uplands, as much as practicable;
- Minimizing impacts on sensitive environmental features by using specialized construction techniques where appropriate;
- Locating additional temporary work space within existing utility/transportation corridors to the maximum extent practicable or in other upland areas;

- Locating ATWS 50 feet back from wetlands and open water, wherever possible; and
- Implementing BMPs and effective soil erosion control measures (e.g., silt fence, straw bales); including routine inspections during construction and until soil stabilization has occurred.

Short-term and long-term construction impacts on waterbodies will be further minimized by utilizing the appropriate waterbody crossing construction procedures and BMPs in the FSC Plan and Procedures. To minimize the potential for sedimentation of waterbodies caused by erosion from the adjacent landscape, trench spoil that is excavated from streambeds and banks will be placed in the ATWS at least 10 feet from the top of the waterbody bank. Erosion control devices, such as silt fences and straw bales, will be placed at the downslope edges of the spoil piles to prevent sediment from entering the waterbody. Dewatering operations will be closely monitored and water will be discharged to appropriate receiving structures. When dewatering near sensitive waterbodies, secondary containment structures will be utilized. Once the pipeline is placed in the trench, the temporarily stored spoil material will returned to the trench and the stream banks and streambed will be restored as close to their pre-construction contours as feasible. Stream banks and riparian areas will then be re-vegetated in accordance with the FSC Plan and Procedures and any applicable agency requirements.

2.3.7.1 Horizontal Directional Drill

FSC is proposing to use three HDD's to install specific segments of the pipeline, one of which will cross surface waters at the Kissimmee River. The use of HDD to cross the Kissimmee River greatly minimizes the likelihood that construction will lead to impacts on water quality since it avoids direct disturbance of the waterbody and the waterbody sediments. This technique significantly reduces the potential for turbidity within the water column and direct disturbance of aquatic plants and animals that utilize the river substrate for habitat. Nonetheless, HDD does have potential to cause other impacts not associated with typical open-cut crossing methods that are described below.

While the HDD method is a proven technology, there are certain impacts that could occur as a result of the drilling, such as the inadvertent release of drilling fluid. Drilling fluid is composed of a slurry of bentonite clay and water, which is classified as non-toxic to the aquatic environment and is a non-hazardous substance. During HDD operations, drilling fluids can be partially absorbed by fractures within the formation that the drill path penetrates. In the event of a vertical fracture, it is possible that the drilling fluids will follow the fracture to the surface, which would result in an inadvertent fluid release.

If there is an inadvertent release of drilling fluid, the discharged material would be localized to the release area, is non-toxic, and can often be cleaned up. The drilling fluid consists of bentonite clay slurry that is denser than water, which increases the opportunity to capture the material. The drilled spoil would settle in the immediate vicinity of the inadvertent release location. Drilling fluids released would tend to disperse near the bottom of the water column, but because of the fine particle size of the material, there may be temporary increases in turbidity. To address this potential impact, FSC has prepared a Horizontal Directional Drill Contingency Plan to monitor the HDD program for the FSC Project (see Appendix 2A).

2.3.7.2 Hydrostatic Test Discharges

FSC estimates that a maximum of approximately 33,290,000 gallons of water will be needed for hydrostatic testing of the proposed pipeline facilities. However, FSC has not yet completed its design of the hydrostatic testing program. As a result, the exact number of test sections and discharge locations is not known at this time. FSC is initially intending to use the Kissimmee

River at MP 53 and the C-23 Canal at MP 115 as the primary source and discharge location of hydrostatic test water. Additional sources and discharge locations of hydrostatic test water will be evaluated as the FSC Project advances. FSC will file the discharge locations with the FERC once complete.

Environmental impacts from the discharge of hydrostatic test water will be minimized by using the measures prescribed in FSC's Procedures. FSC will:

- Locate hydrostatic test manifolds outside of wetlands and riparian areas, to the extent practicable;
- Comply with all appropriate permit requirements;
- Not discharge directly into state-designated special waters, waterbodies that provide habitat for federally listed T&E species, or waterbodies designated as public water supplies, unless the relevant federal, state, and local permitting agencies grant written permission;
- Not discharge water directly into surface waters or wetlands. Discharge test water to a well-vegetated and stabilized area, if practical, and maintain at least a 50-foot vegetated buffer from adjacent waterbody/wetland areas. If an adequate buffer is not available, sediment barriers or similar erosion control measures will be installed;
- Regulate discharge rate, use energy dissipation device(s), and install sediment barriers, as necessary, to prevent sedimentation and streambed scour; and
- Obtain a NPDES permit from the FDEP if water is discharged to a water of the United States.

FSC does not anticipate using chemicals for testing or for drying the pipeline following hydrostatic testing. Pumps used for hydrostatic testing located within 100 feet of any surface water will be operated and refueled in accordance with the SPC Plan.

The FSC Project facilities to be hydrostatically tested consist of new, clean pipeline and, therefore, impacts on surface waters are not anticipated. Sampling of discharge water will be conducted in accordance with permit requirements and FSC's Procedures to document water quality at the time of discharge.

2.3.7.3 Contaminating Material Spills

Other potentially deleterious impacts include accidental hazardous material spills resulting from refueling and maintaining construction equipment, fuel storage, or equipment failure in or near a waterbody. These could have immediate effects on aquatic resources and contaminate the waterbody downstream of the release point.

Any hazardous materials, chemicals, lubricating oils, solvents, or fuels used during construction will be stored in upland areas at least 100 feet from wetlands and waterbodies as required by the FSC Plan and Procedures and the SPC Plan (See Appendix 7C and 7D in Resource Report 7). All such materials and spills (if any) will be handled in accordance with the SPC Plan. Except where absolutely necessary, or required to otherwise minimize overall impacts on the environment, there will be no refueling or lubricating of vehicles or equipment within 100 feet of a waterbody. Under no circumstances will refuse be discarded in waterbodies, trenches, or along the construction corridor. In accordance with the SPC Plan, FSC will conduct routine inspections of tanks and storage areas to help reduce the potential for spills of hazardous materials. Specific measures are discussed in the SPC Plan (Appendix 7D of Resource Report 7).

2.3.7.4 Temporary Access Roads

To minimize impacts at waterbody crossings during construction, FSC will implement procedures for access road crossings of waterbodies outlined in FSC's Procedures.

2.3.7.5 Restoration

Completed stream crossings will be stabilized within 24 hours of backfilling. Original stream bed and bank contours will be re-established, and appropriate slope stabilization methodologies will be used to encourage reestablishment of vegetation cover. Where the flume technique is used, stream banks will be stabilized before removing the flume pipes and returning flow to the temporarily isolated channel segment.

Seeding of disturbed right-of-way approaches to stream crossings will be completed immediately after final right-of-way grading in accordance with the FSC's Procedures, weather and soil conditions permitting. Where necessary, slope breakers (i.e., interceptor dikes), will be installed adjacent to stream banks to minimize the potential for erosion. Temporary sediment barriers, such as silt fences or straw bales, will be maintained across the right-of-way until a permanent vegetation cover is established. For certain waterbodies, site-specific restoration and habitat enhancement measures will be implemented.

Within the construction right-of-way, a 25-foot-wide riparian strip adjacent to waterbodies will be allowed to revegetate with native plant species. To facilitate periodic corrosion/leak surveys in forested wetlands, a corridor centered on the pipeline and up to 10 feet wide will be cleared at a frequency necessary to maintain the 10-foot corridor in an herbaceous state. In addition, in wetlands, trees within 15 feet of the pipeline with roots that could compromise the integrity of pipeline coating will be selectively cut and removed from the permanent right-of-way as needed.

2.3.7.6 Right-of-Way Maintenance

Minor long-term impacts associated with pipeline operations and maintenance will largely be restricted to periodic clearing of vegetation within the permanent right-of-way at waterbody crossings. These maintenance activities will be consistent with the FERC's Procedures, which have been fully integrated into the FSC's Procedures.

2.4 Wetlands

Wetlands are areas inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support a prevalence of vegetation typically adapted for life in saturated soil conditions. Typical wetlands include swamps, marshes, bogs, wet meadows, and similar areas. Wetlands along the FSC Project route are waters of the U.S. as defined in Section 404 of the federal CWA and are regulated by the USACE.

FSC delineated wetlands and waterbodies and completed a wetland functional assessment along the FSC Project. Wetlands and waterbodies were delineated and assessed within a 300-foot-wide survey corridor along the length of the 127-mile-long pipeline route, an approximately 120-foot-wide survey corridor centered over all potential access roads, and a number of contractor yards/station sites. The wetland delineation was performed using a combination of desktop review of existing data and maps as well as a field survey. National Wetlands Inventory ("NWI") maps for the Project area are provided in Appendix 1A in Resource Report 1.

2.4.1 Status of On-Site Field Surveys

After reviewing desktop sources, which included NWI maps and Natural Resource Conservation Service soil survey data, FSC conducted field wetland delineations for the linear corridor and additional work areas where survey access was granted by the landowner. The surveys were completed between July 22, 2013, and January 31, 2014, by qualified wetland scientists.

Potentially jurisdictional wetlands/waters were identified using the currently accepted methods for the state of Florida and United States (i.e., FDEP regulations; Sections 62-301 and 62-340, FAC, including the *Florida Wetlands Delineation Manual* [1995] and the Routine Onsite Determination Methods as described in the *USACE 1987 Wetlands Delineation Manual* (Environmental Laboratory, 1987), the *2010 Regional Supplement to the USACE Wetlands Delineation Manual: Atlantic and Gulf Coastal Plan Region* [Version 2.0], and the most current vegetative index, respectively). Both state and federal methodologies involve identifying three wetland criteria: a predominance of hydrophytic vegetation, the presence of hydric soil indicators, and evidence of wetland hydrology.

Approximately 142 acres, or nine percent, of the survey corridor area were assessed using a desktop evaluation rather than field survey. This was done for a combination of reasons including denied environmental survey access by the landowner or recent project additions or reroutes. In these locations, the baseline ecological characterization was performed using a combination of a desktop survey (i.e., review of maps and existing permits/literature/reports) and visual inspection from roadside, etc., where possible.

FDEP staff met with the FSC Project team to review the wetland delineation in the field during the week of January 7, 2014. The review covered areas that had been field-delineated and where survey permission/access was available. Minor changes were made to some of the wetland lines. The data presented in this Resource Report include the changes requested and made during the FDEP field review.

2.4.2 Wetlands Crossed by the FSC Project

Wetlands crossed by the FSC pipeline and aboveground facilities are presented in the Alignment Sheets included as Appendix 1A in Resource Report 1. A total of 1,155 wetland polygons[1] were delineated within the FSC survey corridor. Wetlands encompass approximately 1,071 acres and are distributed throughout the Project area. A variety of wetland types are present, as summarized in Table 2.4.1. The complete listing of wetland crossings, including crossing length and total impact on each wetland, is also provided in Table 2.4-1. Further discussion of special or significant wetland habitats is provided in Section 3.3 of Resource Report 3.

The majority of wetlands within the FSC Project area are non-forested, freshwater marshes. Other prevalent wetland types include shrub wetlands, mixed wetland hardwoods, mixed hardwood/conifer forested wetlands, and wet prairie. Freshwater marshes are associated with roadside and agricultural swales and conveyances, wet pastures, and transmission line rights-of-way, as well as natural marshes. Wet prairies have developed in wetter agricultural areas. Forested wetlands are associated with stream systems, hydric hammocks, cypress domes, gum swamps, and wet pine flatwoods.

The functional quality of wetlands along the FSC Project route varies significantly. Those wetlands in existing linear corridors (e.g., roadside, transmission line) and agricultural areas tend be lower quality with weedy and invasive species and affected hydrology. The higher quality wetlands are primarily those forested areas associated with stream systems such as Snell Creek, Weohyakapka Creek, Parker Slough, Sweetwater Branch, Fort Drum Creek, Cow Creek, and Cypress Creek.

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[1] Multiple wetland polygons may delineate various sections of the same contiguous wetland system depending on wetland orientation with the survey corridor.

Wetland types were classified based on the NWI classification system as described in Cowardin *et al*., 1979. This classification is a hierarchical system based primarily on the general classification into marine, estuarine, palustrine (freshwater wetland), riverine (stream), or lacustrine (lake) systems, and the dominant vegetation layer. Three different wetland types, all from the palustrine system, were delineated along the FSC Project route. NWI maps of the FSC Project facilities have been included in Appendix 1A in Resource Report 1.

Forested wetland cover types are dominated by trees and shrubs that have developed a tolerance to a seasonal high water table. In order to be characterized as forested, a wetland must be dominated by trees and shrubs that are at least six meters tall (Cowardin *et al*., 1979). Forested wetlands typically have a mature tree canopy, which depending upon the species and density, can have a broad range of understory and groundcover community components.

The scrub-shrub wetland cover type includes areas that are dominated by saplings and shrubs that typically form a low and compact structure less than 20 feet tall (Cowardin *et al*., 1979).The structure and composition of the vegetation within this cover type may be influenced by the water regime and, where located within existing right-of-ways, by utility maintenance practices. Most of these communities are seasonally flooded and often saturated to the surface. Many of the scrub-shrub wetlands along the pipeline route are often associated with emergent wetlands as part of large complexes.

The palustrine emergent wetland cover type is characterized by erect, rooted, herbaceous hydrophytes, excluding mosses and lichens (Cowardin *et al*., 1979). The freshwater emergent wetlands along the route include areas commonly referred to as marshes, wet meadows, and wet prairies. The emergent wetland type exists on its own as well as in conjunction with other wetland types, creating a more heterogeneous wetland system.

Given the number of wetland crossings (>1,000) associated with the FSC pipeline, individual descriptions of each wetland crossed have not been provided. Instead, a summary of the wetland plant communities that will be crossed by the pipeline has been provided below. The following wetland community descriptions are based on the *Florida Land Use, Cover and Forms Classification System Handbook* (FDOT, 1999).

<u>Palustrine Forested Wetlands (“PFO”)</u>

Bay Swamps

Dominant trees within bay swamps include loblolly bay (*Gordonia lasianthus*), sweetbay magnolia (*Magnolia virginiana)*, swamp bay (*Persea palustris*), with slash pine (*Pinus elliottii),* and loblolly pine (*Pinus taeda*) as an associated component. Large gallberry (*Ilex coriacea)*, fetterbush (*Lyonia lucida*), wax myrtle (*Morella cerifera*), and titi (*Cyrilla* sp.) occur in the understory vegetation.

Gum Swamps

The gum swamp forest community is composed of swamp tupelo (*Nyssa biflora*) or water tupelo (*Nyssa aquatica*), or Ogeechee tupelo (*Nyssa ogeche*) which is pure or predominant. Associated species may include bald cypress (*Taxodium distichum*) and a great variety of wet site tolerant hardwood species widely variant in composition.

Bottomland

This community, often referred to as bottomland or stream hardwoods, is usually found on but not restricted to river, creek and lake floodplain or overflow areas. Bottomlands include a wide variety of predominantly hardwood species. The more common components include red maple

(*Acer rubrum*), river birch (*Betula nigra*), water oak (*Quercus nigra*), sweetgum (*Liquidambar styraciflua*), willows (*Salix* sp.), tupelos (*Nyssa* sp.), water hickory (*Carya aquatica*), bays, water ash (*Fraxinus* sp.) and buttonbush (*Cephalanthus occidentalis*). Associated species include cypress (*Taxodium* sp.), slash pine, loblolly pine and spruce pine (*Pinus glabra*).

Mixed Wetland Hardwoods

This category is reserved for those wetland hardwood communities which are composed of a large variety of hardwood species tolerant of hydric conditions, yet exhibit an ill-defined mixture of species.

Willow and Elderberry

Willow occurs in pure stands or else is the dominant species in the willow-elderberry (*Sambucus* sp.) wetland.

Exotic Wetlands Hardwoods

The dominant species in this wetland community are exotic species such as Brazilian pepper (*Schinus terebinthifolius*), *Melaleuca* sp., or other exotic species.

Cypress Swamp

Cypress swamps are composed of pond cypress (*Taxodium ascendens*) or bald cypress which occurs either as a pure monoculture or is otherwise dominant. Common associates of pond cypress are swamp tupelo, slash pine and black titi. Common associates of bald cypress are water tupelo, swamp cottonwood (*Populus heterophylla)*, red maple, American elm (*Ulmus americana*) pumpkin ash (*Fraxinus profunda*), Carolina ash (*Fraxinus caroliniana)*, overcup oak (*Quercus lyrata*) and water hickory. Bald cypress may be associated with laurel oak (*Quercus laurifolia*), sweetgum and sweetbay on less moist sites.

Cypress-Pine-Cabbage Palm

This wetland community includes cypress, pine and/or cabbage palm (*Sabal palmetto*) in combinations in which no species is dominant. This community typically occurs along the edge of moist uplands and wetlands.

Wet Pinelands Hydric Pine

This is a forested wetland community with a sparse to moderate canopy of slash pine. The understory is comprised of grasses, wiregrass, forbs, and at times with sparse saw palmetto (*Serenoa repens)*.

Mixed Forested Wetland

Mixed wetland forest communities are forested wetlands in which neither hardwoods nor conifers achieve a 66 percent dominance of the crown canopy composition.

Palustrine Scrub-Shrub Wetlands (“PSS”)

Wetlands Shrub

Wetland shrub communities are associated with topographic depressions and poorly drained soil. Associated species include pond cypress, swamp tupelo, willows, and other low scrub with no dominate species.

Palustrine Emergent Wetland ("PEM")

Freshwater Marsh

Freshwater marshes are characterized by having one or more of the following herbaceous species comprise the majority of the community:

- Sawgrass (*Cladium jamaicensis*)
- Cattail (*Typha domingenis*, *Typha latifolia*, *Typha angustifolia*)
- Arrowhead (*Sagittaria* sp.)
- Maidencane (*Panicum hemitomon*)
- Buttonbush (*Cephalanthus occidentalis*)
- Cordgrass (*Spartina bakeri*)
- Giant Cutgrass (*Zizaniopsis miliacea*)
- Switchgrass (*Panicum virgatum*)
- Bulrush (*Scirpus americanus, Scirpus validus, Scirpus robustus*)
- Needlerush (*Juncus effusus*)
- Common Reed (*Phragmites communnis, Phragmites australis*)
- Arrowroot (*Thalia dealbata,Thalia geniuclata*)

There will be no permanent impacts on freshwater marsh as a result of the FSC Project because the marsh vegetation will return following restoration.

Wet Prairie

Wet prairie is characterized by a plant community comprised primarily of grassy vegetation on hydric soils. It is usually distinguished from freshwater marsh by having shallower water levels and shorter herbage.

One or more of the following species typically occur in these communities:

- Sawgrass (*Cladium jamaicensis*)
- Maidencane (*Panicum hemitomon*)
- Cordgrasses (*Spartina bakeri, Spartina patens*)
- Spike Rushes (*Eleocharis* sp.)
- Beach Rushes (*Rhynchospora* sp.)
- St. John's Wort (*Hypericum* sp.)
- Spiderlily (*Hymenocallis palmeri*)
- Swamplily (*Crinum Americanum*)
- Yellow-eyed Grass (*Xeric ambigua*)
- Whitetop Sedge (*Dichromena colorata*)

There will be no permanent impacts on wet prairie as a result of the FSC Project because the prairie vegetation will return following restoration.

Emergent Aquatic Vegetation

This category of wetland plant species includes both floating vegetation and vegetation which is found either partially or completely above the surface of water. Typical native species include water lily (*Nymphaeacea*) and spatterdock (*Nuphar* sp.), as well as nuisance/exotic species including water lettuce (*Pistia stratiotes*), water hyacinth (*Eichhornia* sp.), and duckweed (*Lemna* sp.).

There will be no permanent impacts on emergent aquatic vegetation as a result of the FSC Project because the emergent aquatic vegetation will return following restoration.

2.4.2.1 Pipeline Facilities

Wetland areas delineated along the FSC pipeline are depicted on the alignment sheets located in Appendix 1A of Resource Report 1. The FSC pipeline facilities will impact a total of 922 wetlands. This count includes wetlands crossed within the FSC pipeline right-of-way (405 wetlands), wetlands within the ATWS (147 wetlands), and wetlands within the temporary construction easement (370 wetlands). The construction of the FSC pipeline will result in a total of 220 acres[2] of wetland impacts, which includes 160 acres of temporary impacts on PEM and PSS wetlands and 60 acres of permanent impact on PFO wetlands. Since temporarily disturbed wetlands will be returned to pre-construction conditions, there will be no permanent loss of wetlands. The only permanent wetland impacts associated with the FSC Project will be a conversion of 60 acres of forested wetlands to emergent or scrub-shrub wetlands as a result of vegetation maintenance of the permanent cleared right-of-way.

2.4.2.2 Aboveground Facilities

The proposed aboveground facilities of the FSC Project involve the construction and operation of a meter station and pig receiver at the terminus of the FSC Project at the FPL Martin Clean Energy Center and a pig launcher at the start of the FSC Project. Proposed activities at the FSC Project aboveground facilities will not have any impact on wetlands.

2.4.2.3 Access Roads

The temporary access roads (“TARs”) required for the FSC Project will impact 78 wetlands, which include PEM, PSS and PFO wetlands. Project impacts from TARs will temporarily impact a total of 3 acres of wetlands, including 2.5 acres of impacts on PEM wetlands, 0.3 acres of impact on PSS wetlands, and 0.2 acres of impact on PFO wetlands. Since hydrologic conditions of wetlands temporarily disturbed as a result of construction will be returned to pre-construction conditions, there will be no permanent loss of wetlands. Accordingly, there will be no permanent impact on wetlands from the construction or operation of TARs.

2.4.2.4 Pipe Yards and Contractor Ware Yards

The FSC Project includes four currently identified pipe yards and contractor ware yards located near MP 72, MP 77, MP 125, and MP 127. Generally, yards consist of previously disturbed areas devoid of vegetation and covered in gravel. Approximately 15 acres of PEM wetland and 9 acres of PFO may be temporarily affected within these yards. Since hydrologic conditions and vegetation within wetlands temporarily disturbed as a result of construction will be returned to pre-construction conditions, there will be no permanent loss of wetlands.

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[2] Includes impacts from pipeline right-of-way and temporary easement in Table 2.4-1.

2.4.3 Additional Temporary Workspace

ATWS may be needed adjacent to specific wetlands to facilitate the pipeline crossing. The size of ATWS areas is determined on a site-specific basis. The ATWS area is restricted to the minimum size necessary to safely construct the pipeline with respect to the existing conditions anticipated at the time of construction. Approximately 21 acres of PEM, PSS and PFO wetland will be temporarily altered for ATWS.

In addition to the typical construction right-of-way, staging areas may also be used for the assembly and fabrication of the pipe section that will cross wetland areas. These work areas will be located at least 50 feet away from the wetland edge, topographic and other site specific conditions permitting. If conditions do not permit a 50-foot setback, FSC is requesting deviations from the FERC Procedures. Table 2.3-3 identifies the locations where ATWS wetland setback deviations are requested along the FSC pipeline.

2.4.4 Wetland Construction Methods

General wetland construction crossing methods are described in the following sections.

2.4.4.1 General Procedures

Construction across wetlands will be performed in accordance with FSC's Procedures, which have been adopted from the FERC Procedures. These Plan and Procedures will be used unless a variance is approved by the FERC. FSC will minimize the extent and time that construction equipment operates in wetland areas. Prior to ground disturbing activities, wetland boundaries and buffers will be clearly marked in the field and maintained until ground-disturbing activities are complete. A complete description of construction methods can be found in FSC's Procedures, which is included as Appendix 7C in Resource Report 7.

2.4.4.2 Clearing

Clearing involves the removal of all trees and brush from the construction workspace. Vegetation will be cut just above ground level, leaving existing root systems intact. Stumps will not be removed from the wetland with the exception of those that interfere with excavation of the trench. Treating stumps and root systems in this manner will help stabilize the soil and promote re-sprouting by some species. Debris will be removed from the wetland and stockpiled within an upland area of the right-of-way for disposal.

2.4.4.3 Temporary Erosion and Sediment Control

Sediment barriers will be installed along wetland boundaries within the right-of-way and along limits of the right-of-way upslope of wetlands immediately after initial ground disturbance. All sediment barriers will be maintained during construction and repaired as necessary until permanent erosion controls or restoration of adjacent upland areas is complete in accordance with the FSC Plan and Procedures.

2.4.4.4 Crossing Method

Construction across wetlands will be conducted in accordance with all of the measures set forth in FSC's Procedures. Wetlands will be crossed using the open-cut "dry" wetland crossing, saturated wetland crossing and flooded wetland crossing (push-pull) methods in compliance with the FERC Procedures. See Figures 1.7-4, 1.7-5 and 1.7-6 in Resource Report 1 for typical Wetland Crossing Plans and cross-sections of the various methods that may be employed in crossing these resources.

The FSC Project will have an approximately 100-foot wide construction right-of-way in upland areas and a 75-foot wide construction right-of-way in wetlands areas.

When wetland soils are inundated or saturated to the surface, the pipeline trench will be excavated across the wetland by equipment supported on wooden swamp mats to minimize the disturbance to wetland soils. In wetlands that have firm substrates, and are unsaturated, the top 12 inches of wetland soil over the trench line will be segregated. Trench spoil will be temporarily piled in a ridge along the pipeline trench. Gaps in the spoil pile will be left at appropriate intervals to provide for natural circulation or drainage of water. While the trench is excavated, the pipeline will be assembled in a staging area located in an upland area where practicable. If dry conditions exist within the wetland, the pipe fabrication will occur in the wetland. For inundated or saturated wetland conditions, pipe strings will be fabricated on one bank and either pulled across the excavated trench in the wetland, floated across the wetland, or carried into place and submerged into the trench.

2.4.4.5 Cleanup and Restoration

After the pipeline is lowered into the trench, wide track bulldozers or backhoes supported on swamp mats will be used for backfill, grading, and final cleanup. This method will minimize the amount of equipment and travel in wetland areas.

2.4.5 Wetland Impacts and Mitigation

The majority of the wetland impacts associated with the FSC Project will occur during construction. Construction activities that will impact wetlands include construction-related wetland crossings, and construction of TARs. Long-term right-of-way maintenance activities will have limited impacts on wetlands.

There will be no net loss of wetlands as a result of the FSC Project construction or operation as there are no permanent aboveground facilities proposed in wetlands. Although some permanent cover-type conversions will occur to some forested wetlands, there will be no permanent fill of wetlands during construction of the pipeline. The FSC Project will impact a total of 268 acres[3] of wetlands. The majority of these impacts will be temporary and will result from typical pipeline construction activities, such as vegetation clearing, temporary excavation of wetland soils, and ground disturbance from construction vehicles. Approximately 208 acres of PEM, PSS and PFO wetlands will be temporarily affected as a result of project construction (Table 2.4-1). The creation and maintenance of a new right-of-way will lead to the permanent conversion of 60 acres of PFO wetlands to a non-forested wetland community (PEM or PSS) (Table 2.4-1).

FSC has assumed that all impacts are considered temporary unless there will be a permanent change in wetland type as described above, (i.e. permanent conversion of forested wetland to non-forested wetland within the permanent corridor). The FSC Project is not anticipated to result in permanent fill or excavation in wetlands. Impacts on PEM and PSS wetland systems are considered temporary as they will be restored to preconstruction condition once the pipeline has been installed. Construction and restoration activities in wetlands and waterbodies will be conducted in compliance with FSC’s Procedures.

2.4.5.1 Temporary Construction Impacts and Mitigation

The FSC Project will temporarily impact 208 acres of wetlands. The majority of the impacts are to non-forested wetlands (approximately 158 acres). Most of the non-forested wetlands that will be temporarily affected are herbaceous freshwater marshes associated with roadside swales or cattle pastures. Approximately 50 acres of forested wetland will be temporarily affected during

[3] Includes pipeline right-of-way, temporary easement, ATWS, access roads, contractor yards and both temporary and permanent impacts

construction. The majority of these temporary wetland impacts are associated with mixed wetland hardwood systems or mixed forested wetlands.

Temporary wetland impacts associated with construction of the FSC Project facilities include the temporary removal of wetland vegetation, disturbance of wetland soils and temporary disturbance of wetland hydrology. Construction may lead to temporary changes in current wetland functions and values; however, FSC anticipates that affected wetlands will continue to provide numerous ecological functions such as sediment/toxicant retention; nutrient removal/transformation; flood attenuation; groundwater recharge/discharge; and wildlife habitat following construction and restoration.

Construction impacts on wetlands will be avoided or minimized by employing FSC's Procedures. Temporarily disturbed PEM, PSS and PFO wetlands will be allowed to revert to existing conditions once construction activities have been completed.

After construction is complete, the construction right-of-way will be restored to its preconstruction contours to avoid long-term impacts on wetland hydrology. In non-saturated wetland soils, the upper 12 inches of topsoil will be separated from the subsoil and replaced to the soil surface once the pipe is laid. This will minimize the loss of function provided by hydric soil characteristics such as organic matter accumulation and biogeochemical processes performed by wetland-specific microbial communities, as well as provide a seed source of existing wetland vegetation. The wetland vegetation will reestablish through natural succession once construction and restoration activities are complete. In emergent wetlands, the herbaceous vegetation is expected to regenerate quickly (typically within one growing season).

Wetland areas delineated along the FSC pipeline are depicted on the alignment sheets located in Appendix 1A of Resource Report 1.

2.4.5.2 Permanent Construction Impacts and Mitigation

The FSC Project will result in a permanent conversion of 60 acres of forested wetland to non-forested wetland, which will be maintained by means of mechanical cutting and mowing as part of pipeline operation. A 30 foot wide section of the 50 foot permanent easement will be converted from forested wetland to emergent or scrub shrub wetland, which will not be permitted to revert to a forested wetland community after construction. Accordingly, there will be no net loss of wetlands, but rather a change of wetland type.

2.4.5.3 Contaminating Material Spills

FSC has prepared a SPC Plan to address the handling of construction fuel and other materials. Except in circumstances specified in the SPC Plan, potential impacts on water quality will be avoided while work is being performed in wetlands and other waterbodies by implementing the following measures:

- Construction materials, fuels, *etc.* will not be stored within wetlands or within 100 feet of any stream or wetland system, except under limited, highly controlled circumstances;
- Construction equipment will not be refueled within wetlands or within 100 feet of any stream or wetland system, except under limited, highly-controlled circumstances, and under direct supervision of the EI;
- Construction equipment will not be washed in any wetland or watercourse; and
- Equipment will be well maintained and checked daily for leaks.

2.4.5.4 Temporary Access Roads

To minimize impacts at wetland crossings during construction, FSC will implement procedures for access road crossings of wetlands as outlined in the FSC Procedures.

2.4.5.5 Restoration

Construction and mitigation activities in wetlands will be conducted in accordance with FSC Procedures and the conditions of related permits. Recommended practices include, wherever practical:

- A reduction of construction corridor widths where possible;
- A 50-foot setback from wetlands for ATWS;
- Minimization of riparian clearing to the extent practicable while ensuring safe construction conditions;
- Expedited construction in and around wetlands;
- Confinement of stump removal to the trench-line to minimize soil disturbance (unless safety or access considerations require stump removal elsewhere);
- Return of wetland bottoms and drainage patterns to their original configurations and contours to the extent practicable;
- Permanent stabilization of upland areas near wetlands as soon as practicable after trench backfilling to reduce sediment run-off;
- Segregation of topsoil in unsaturated wetlands to preserve the native seed source (which will facilitate re-growth of herbaceous vegetation once pipeline installation is complete);
- Periodic inspection of the construction corridor during construction (via FSC EIs and 3rd party EI's) Post-construction wetland monitoring to evaluate the progress of wetland revegetation (per requirements of FERC, USACE and FDEP); and
- Documentation of invasive species prior to construction and post-construction monitoring to compare pre- and post-construction occurrences.

In accordance with the FSC Procedures, FSC will conduct post-construction maintenance and monitoring of the right-of-way in affected wetlands to assess the success of restoration and revegetation. Monitoring efforts will include documenting occurrences of exotic invasive species to compare to pre-construction conditions.

2.4.5.6 Right-of-way Maintenance

Minor long-term impacts associated with pipeline operations and maintenance will largely be restricted to periodic clearing of vegetation within the permanent right-of-way at wetland crossings with the exception of those pipeline segments installed using the HDD method. No maintenance is required for the permanent right-of-way within wetlands where the pipeline was installed using the HDD method. These maintenance activities will be consistent with FSC's Procedures.

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TABLES

Table 2.2-1

Public and Private Water Supply Wells and Springs and Locally Zoned Aquifer Protection Areas within 150 Feet of the Construction Work Area for the FSC Project

Facility	Milepost a/	County	Supply Type (well, spring, WHPA)	Approximate Distance from Pipeline Centerline (feet)	Approximate Distance from Construction Work Area (feet)	Drinking Water (Y/N)
Pipeline ROW						
	0.8	Polk	Well	98	34	Y
	0.9	Polk	Well	59	12	Y
	0.9	Polk	Well	45	20	Y
	1.0	Polk	Well	Contained within	Contained within	Y
	1.7	Polk	Well	148	83	Y
	1.7	Polk	Well	12	Contained within	Y
	12.9	Polk	Well	43	18	Y
	15.1	Polk	Well	81	1	Y
	16.4	Polk	Well	132	57	Y
	16.4	Polk	Well	113	88	Y
	16.4	Polk	Well	145	82	Y
	16.5	Polk	Well	172	100	Y
	17.1	Polk	Well	150	96	Y
	17.4	Polk	Well	174	99	Y
	17.6	Polk	Well	174	74	Y
	18.7	Polk	Well	142	68	Y
	18.8	Polk	Well	87	62	Y
	18.9	Polk	Well	23	Contained within	Y
	18.9	Polk	Well	86	42	Y
	19.0	Polk	Well	137	94	Y
	19.0	Polk	Well	24	Contained within	Y
	20.1	Polk	Well	47	22	Y
	21.7	Polk	Well	138	113	Y
	21.8	Polk	Well	137	112	Y
	22.0	Polk	Well	114	89	Y
	22.1	Polk	Well	105	80	Y
	22.2	Polk	Well	89	Contained within	Y
	22.4	Polk	Well	136	61	Y
	22.4	Polk	Well	170	95	Y
	23.3	Polk	Well	76	51	N
	23.3	Polk	Well	70	45	N
	23.3	Polk	Well	110	29	Y
	23.3	Polk	Well	151	126	N

Table 2.2-1

Public and Private Water Supply Wells and Springs and Locally Zoned Aquifer Protection Areas within 150 Feet of the Construction Work Area for the FSC Project

Facility	Milepost a/	County	Supply Type (well, spring, WHPA)	Approximate Distance from Pipeline Centerline (feet)	Approximate Distance from Construction Work Area (feet)	Drinking Water (Y/N)
	23.3	Polk	Well	151	126	N
	23.3	Polk	Well	151	126	Y
	23.4	Polk	Well	72	47	Y
	23.4	Polk	Well	84	59	N
	23.4	Polk	Well	90	65	Y
	23.4	Polk	Well	165	140	Y
	23.5	Polk	Well	164	139	N
	23.9	Polk	Well	67	42	Y
	26.9	Polk	Well	29	Contained within	Y
	26.9	Polk	Well	29	Contained within	Y
	27.0	Polk	Well	158	133	Y
	27.0	Polk	Well	124	Contained within	Y
	29.9	Polk	Well	168	143	Y
	30.1	Polk	Well	5	Contained within	Y
	30.4	Polk	Well	86	53	Y
	30.4	Polk	Well	33	8	Y
	30.7	Polk	Well	163	129	Y
	33.2	Polk	Well	118	93	Y
	33.7	Polk	Well	94	15	Y
	33.9	Polk	Well	129	104	Y
	34.0	Polk	Well	81	56	Y
	35.4	Polk	Well	37	Contained within	Y
	35.4	Polk	Well	31	Contained within	N
	35.4	Polk	Well	37	Contained within	Y
	51.5	Polk	Well	91	66	N
	51.5	Polk	Well	58	33	Y
	72.7	Osceola	Well	57	32	Y
	85.4	Okeechobee	Well	26	Contained within	Y
	85.6	Okeechobee	Well	148	27	Y
	85.7	Okeechobee	Well	63	0	Y
	0.8	Polk	WHPA	108	62	Y
	1.9	Polk	WHPA	Contained within	Contained within	Y
	3.8	Polk	WHPA	Contained within	Contained within	Y
	4.9	Polk	WHPA	Contained within	Contained within	Y
	12.2	Polk	WHPA	Contained within	Contained within	Y

Table 2.2-1

Public and Private Water Supply Wells and Springs and Locally Zoned Aquifer Protection Areas within 150 Feet of the Construction Work Area for the FSC Project

Facility	Milepost a/	County	Supply Type (well, spring, WHPA)	Approximate Distance from Pipeline Centerline (feet)	Approximate Distance from Construction Work Area (feet)	Drinking Water (Y/N)
	18.4	Polk	WHPA	103	75	Y
	33.7	Polk	WHPA	Contained within	Contained within	Y
	34.1	Polk	WHPA	Contained within	Contained within	Y
	34.2	Polk	WHPA	Contained within	Contained within	Y
	35.3	Polk	WHPA	Contained within	Contained within	Y
	42.0	Polk	WHPA	Contained within	Contained within	Y
	72.9	Osceola	WHPA	Contained within	Contained within	Y
	85.4	Okeechobee	WHPA	Contained within	Contained within	Y
	86.1	Okeechobee	WHPA	Contained within	Contained within	Y
Access Road						
	1.1	Polk	Well	226	146	Y
	4.3	Polk	Well	179	130	Y
	12.1	Polk	Well	254	147	Y
	12.1	Polk	Well	358	137	Y
	12.1	Polk	Well	636	77	Y
	12.4	Polk	Well	458	56	Y
	16.8	Polk	Well	1245	110	Y
	17.6	Polk	Well	216	116	Y
	19.1	Polk	Well	200	91	Y
	19.1	Polk	Well	719	124	N
	19.1	Polk	Well	532	95	N
	19.1	Polk	Well	200	91	Y
	19.1	Polk	Well	600	Contained within	N
	19.1	Polk	Well	523	75	Y
	19.1	Polk	Well	713	104	Y
	19.7	Polk	Well	315	119	Y
	20.0	Polk	Well	1094	102	N
	24.9	Polk	Well	10334	55	Y
	24.9	Polk	Well	10770	142	Y
	12.1	Polk	WHPA	366	346	Y
	73.4	Osceola	WHPA	237	139	Y
Contractor/Pipe Storage Yards						
	4.5	Polk	WHPA	7621	127	Y
	4.5	Polk	WHPA	6990	Contained within	Y

Table 2.2-1

Public and Private Water Supply Wells and Springs and Locally Zoned Aquifer Protection Areas within 150 Feet of the Construction Work Area for the FSC Project

Facility	Milepost a/	County	Supply Type (well, spring, WHPA)	Approximate Distance from Pipeline Centerline (feet)	Approximate Distance from Construction Work Area (feet)	Drinking Water (Y/N)
Temporary Construction Easement						Y
	1.5	Polk	Well	178.8	103.8	Y
	16.4	Polk	Well	180.3	105.3	Y
	18.9	Polk	Well	210.2	110.2	Y
	22.1	Polk	Well	188.6	113.6	Y
	27.0	Polk	Well	200.4	95.5	Y
	27.1	Polk	Well	218.3	112.7	Y
	35.4	Polk	Well	217.5	141.9	Y
	85.5	Okeechobee	Well	185.1	110.1	Y
Additional Temporary Workspace						
	27.9	Polk	Well	248.3	123.4	Y
	32.9	Polk	Well	252.5	105.8	Y
	34.5	Polk	Well	397.8	132.9	Y
	34.5	Polk	Well	316.0	82.9	Y
	1.4	Polk	WHPA	255	112	Y
	53.8	Osceola	WHPA	243	135	Y

Sources: FDOH well survey database, FDEP Spring data and SWAPP Areas (Source Water Assessment and Protection Program)
a/ Approximate closest MP along the proposed pipeline route rounded to the nearest tenth

Table 2.3-1

Waterbodies Crossed by the FSC Project Facilities

Facility, Waterbody ID	Milepost a/	County	Waterbody ID	Waterbody Name	Flow Type	Crossing Width (Feet) b/	Fishery Classification	State Water Quality Classification c/	Proposed Crossing Method d/	FERC Classification
Pipeline ROW										
	0.1	Osceola	WB-01		Ephemeral	21	Warmwater	III	Open Cut	Intermediate
	3.8	Polk	WB-03		Pond	58	Warmwater	III	Open Cut	Intermediate
	4.4	Polk	WB-05		Perennial	65	Warmwater	III	Open Cut	Intermediate
	8.7	Polk	WB-06		Perennial	16	Warmwater	III	Open Cut	Intermediate
	9.8	Polk	WB-07		Perennial	13	Warmwater	III	Open Cut	Intermediate
	10.3	Polk	WB-08		Perennial	23	Warmwater	III	Open Cut	Intermediate
	10.5	Polk	WB-10	Snell Creek	Perennial	24	Warmwater	III	Open Cut	Intermediate
	12.1	Polk	WB-11		Pond	39	Warmwater	III	Open Cut	Intermediate
	12.6	Polk	WB-13		Perennial	20	Warmwater	III	Open Cut	Intermediate
	37.0	Polk	WB-23		Perennial	12	Warmwater	III	Open Cut	Intermediate
	38.7	Polk	WB-25	Weohyakapka Creek	Perennial	53	Warmwater	III	Open Cut	Intermediate
	48.3	Polk	WB-33		Pond	7	Warmwater	III	Open Cut	Minor
	50.2	Polk	WB-33A		Intermittent	35	Warmwater	III	Open Cut	Intermediate
	51.2	Polk	WB-34		Perennial	25	Warmwater	III	Open Cut	Intermediate
	54.0	Osceola	WB-36	Kissimmee River	Perennial	277	Warmwater	III	HDD	Major
	56.2	Osceola	WB-37B	Blanket Bay Slough	Perennial	8	Warmwater	III	Open Cut	Minor
	71.9	Osceola	WB-41	Cow Long Branch Trib	Perennial	35	Warmwater	III	Open Cut	Intermediate
	73.4	Osceola	WB-46		Perennial	101	Warmwater	III	Open Cut	Major
	74.5	Osceola	WB-47	Cow Long Branch Trib	Perennial	51	Warmwater	III	Open Cut	Intermediate
	76.3	Osceola	WB-48	Cow Log Branch	Perennial	38	Warmwater	III	Open Cut	Intermediate
	77.6	Osceola	WB-49	Padgett Branch	Perennial	18	Warmwater	III	Open Cut	Intermediate

Table 2.3-1

Waterbodies Crossed by the FSC Project Facilities

Facility, Waterbody ID	Milepost a/	County	Waterbody ID	Waterbody Name	Flow Type	Crossing Width (Feet) b/	Fishery Classification	State Water Quality Classification c/	Proposed Crossing Method d/	FERC Classification
	80.2	Okeechobee	WB-52		Perennial	29	Warmwater	III	Open Cut	Intermediate
	82.4	Okeechobee	WB-53	Parker Slough	Perennial	31	Warmwater	III	Open Cut	Intermediate
	83.4	Okeechobee	WB-55	Sweetwater Branch	Perennial	44	Warmwater	III	Open Cut	Intermediate
	85.1	Okeechobee	WB-56	Boggy Branch	Perennial	20	Warmwater	III	Open Cut	Intermediate
	85.1	Okeechobee	WB-57		Pond	83	Warmwater	III	Open Cut	Intermediate
	87.7	Okeechobee	WB-58	Fort Drum Creek	Perennial	71	Warmwater	III	Open Cut	Intermediate
	88.1	Okeechobee	WB-59	Fort Drum Creek Trib	Perennial	10	Warmwater	III	Open Cut	Minor
	95.8	Okeechobee	WB-62		Intermittent	14	Warmwater	III	Open Cut	Intermediate
	99.4	Okeechobee	WB-63b	Cow Creek Trib	Perennial	60	Warmwater	III	Open Cut	Intermediate
	99.5	Okeechobee	WB-63c	Cow Creek Trib	Intermittent	12	Warmwater	III	Open Cut	Intermediate
	102.7	Okeechobee	WB-66		Perennial	56	Warmwater	III	Open Cut	Intermediate
	103.4	St. Lucie	WB-68		Intermittent	4	Warmwater	III	Open Cut	Minor
	106.3	St. Lucie	WB-69b	Cypress Creek	Perennial	15	Warmwater	III	Open Cut	Intermediate
	106.4	St. Lucie	WB-70		Perennial	18	Warmwater	III	Bore	Intermediate
	109.5	St. Lucie	WB-74A		Intermittent	2	Warmwater	III	Open Cut	Minor
	113.1	St. Lucie	WB-77		Intermittent	13	Warmwater	III	Open Cut	Intermediate
	115.5	St. Lucie	WB-78A		Perennial	44	Warmwater	III	HDD	Intermediate
	119.1	Martin	WB-80A		Perennial	20	Warmwater	III	Open Cut	Intermediate
	121.9	Martin	WB-81		Perennial	42	Warmwater	III	Open Cut	Intermediate
	126.2	Martin	WB-88		Perennial	42	Warmwater	III	Bore	Intermediate

Table 2.3-1

Waterbodies Crossed by the FSC Project Facilities

Facility, Waterbody ID	Milepost a/	County	Waterbody ID	Waterbody Name	Flow Type	Crossing Width (Feet) b/	Fishery Classification	State Water Quality Classification c/	Proposed Crossing Method d/	FERC Classification
Access Roads										
	42.5	Polk	WB-206-A1			TBD	Warmwater	III	TBD	TBD
	40.5	Polk	WB-27		Pond	TBD	Warmwater	III	TBD	TBD
	107.3	St. Lucie	WB-74			TBD	Warmwater	III	TBD	TBD
	108.2	St. Lucie	WB-74			TBD	Warmwater	III	TBD	TBD
Contractor Yards										
	77.8	Okeechobee	WB-50			TBD	Warmwater	III	TBD	TBD
	77.8	Okeechobee	WB-51			TBD	Warmwater	III	TBD	TBD
	125.5	Martin	WB-654-A1			TBD	Warmwater	III	TBD	TBD

Source: ECT and UPI Waterbody Crossing Report

a/ Milepost is the approximate pipeline entry point of each waterbody.
b/ Crossing width measured from water's edge for those waterbodies crossed by the FSC pipeline.
c/ State Designations and Use Descriptions:
Class I: Potable Water Supplies
Class II: Shellfish Propagation or Harvesting
Class III: Fish Consumption; Recreation; Propagation and Maintenance of a Healthy, Well-Balanced Population of Fish and Wildlife
Class III-Limited: Fish Consumption; Recreation; Propagation and Maintenance of a Limited Population of Fish and Wildlife
Class IV: Agricultural Water Supplies; and
Class V: Navigation, Utility and Industrial Use.
d/ The proposed pipeline crossing methods of "HDD/Bore" and "Open Cut" are described in detail in Section 2.3.7 in Resource Report 2. Crossing of all waterbodies by access roads will be completed in accordance with FERC Procedures and the FSC Project E&SCP.

TBD: To be determined

Table 2.3-2

Sensitive Surface Waters Crossed by the FSC Project

Facility	Milepost a/	County	Waterbody Name	Basis for Sensitivity	Proposed Crossing Method
Pipeline ROW					
	88	Okeechobee	Fort Drum Creek	303(d) List; impaired for fecal coliform	Open Cut

Source: Florida Section 303(d) Verified List of Impaired Waters 2014, USEPA NEPAssist Map and Florida Outstanding Water GIS data.

a/ Nearest Milepost

Table 2.3-3 Requested Deviations from the Procedures				
Station	**Milepost**	**Tracts**	**Deviation Request**	**Justification**
2+89	0.05	102.0 or 102.3	Deviation for ATWS within 50’ setback from water body	Required for boring Road
4+00	0.08	103	Deviation for ATWS within 50’ setback from water body	Required for boring Road
7+11	0.13	103	Use existing access roads in wetlands – only light vehicles will be used	Assume no deviation required N/A
24+32	0.46	TBD	Deviation for ATWS within 50’ setback from water body ATWS for bore pit	Required for boring Foreign Pipeline and Rail Road
31+33	0.59	TBD	Deviation for ATWS within 50’ setback from water body	Required for boring Foreign Pipelines
37+22	0.70	TBD	Deviation for ATWS within 50’ setback from water body	Required for boring Road
48+88	0.93	1017 & 1019	ATWS in a wetland	Constraint due to substation to the north
50+00	0.95	1021, 1025, 1030	Deviation for ATWS within 50’ setback from water body	Additional temporary work space needed it to change over construction ROW to other side of ROW, needed for Road Crossing and Bend
99+08 to 100+10	1.88 to 1.90	1075.12, 1075.13, 122, 123, 124	Future possible deviation	TBD
150+00	2.84	1075.28	ATWS in a wetland	Required for boring. ATWS to be added
179+27	3.40	1075.35, 1075.36	ATWS in wetland	Required for boring – low distribution power lines are in the way on the other side. ATWS to be adjusted
179+70	3.40	1075.36	ATWS in wetland	Required for boring – low distribution power lines are in the ROW on the other side. ATWS to be adjusted.
199+67	3.78	1075.42	ATWS in wetland	Required for boring
214+09	4.05	1075.47	ATWS within 10’ of wetlands for bore space	Required for boring
220+24	4.17	1075.45	100 foot wide ROW in wetlands.	Required for spoil placement. ATWS to be added.
227+05	4.30	1075.51, 1075.50	Route to be determined	TBD
305+14	5.78	1075.79	ATWS in wetland	Required for tie-in
544+24	10.31	1092, 1093	ATWS in wetland	Required for boring
652+27 to 657+54	12.35 to 12.45	1122	Variance to be determined after reroute	TBD
1928+95	36.53	1377, 1378	ATWS within 50’ of a wetland	Required for boring
1929+18	36.54	1379	Variance for ATWS to be closer to Wetland	Moving ATWS closer to Wetland. Workspace to be adjusted
2001+46	38.10	1393	ATWS within 50’ of a wetland	Extra space for a turnaround

Table 2.3-3

Requested Deviations from the Procedures

Station	Milepost	Tracts	Deviation Request	Justification
2042+42	38.68	1410	TBD	FUTURE HDD
2050+61	38.84	1410	ATWS in wetland	Extra work space needed for HDD
2107+02	39.91	1425	ATWS within 50 feet of wetland	Required for boring
2108+57	39.94	1428, 1429	ATWS within 50 feet of wetland	Required for Road Crossing
2173+71	41.17	1445	ATWS in wetland	Extra workspace for spoil placement
2241+23	42.45	1469.2, 1469.3	ATWS in wetland	Needed for stream crossing and spoil placement
2244+63	42.51	1469.3	ATWS in wetland	Needed for stream crossing and spoil placement
2477+57	46.92	1481	ATWS in wetland	Needed to cross ditch
2650+40	50.20	1484.25	Deviation for ATWS within 50' setback from water body	Extra workspace for spoil placement
2699+00	51.12	1484.26	Deviation for ATWS within 50' setback from water body	Extra workspace for spoil placement
2705+53	51.24	1489.26	Deviation for ATWS within 50' setback from water body	Extra workspace for spoil placement
2746+21	52.02	1484.26, 1489	100 foot ROW plus additional workspace in a wetland	Needed for Kissimmee River HDD pullback
2765+66	52.34	1490	100 foot right ROW in wetlands	Needed for Kissimmee River HDD pullback
2774+50	52.55	1490	100 foot right ROW in wetlands	Needed for Kissimmee River HDD pullback
3122+83	59.14	2020.1	ATWS within 50 ft of a wetland	Required for boring and 85' ROW HDD possible
3128+41	59.25	2023.2	ATWS within 50 ft of a wetland	Required for boring and 85' ROW HDD possible
3300+00 to 3370+00	62.5 to 63.83	2026.1, 2027.1	100 foot ROW across area of small drainage ditches.	Storage of spoils
3363+41	63.70	2027.1	85 ft ROW for DOT fence issue	Additional workspace for 85' ROW
3374+87	63.92	2028.1	Within 50 ft of a waterway	Required for boring
3375+52	63.93	2028.1	Within 50 ft of a waterway	Required for boring
3417+44 to 3421+60	64.72 to 64.80	2028.1	ATWS on wetland	Required for DOT ROW issue
3430+22 to 3433+07	64.97 to 65.02	2029.1	ATWS on wetland	Required for DOT ROW Issue
3491+15 to 3505+69	66.12 to 66.40	2031.1, 2032.1	ATWS on wetland	Required for ditch crossings
3510+00 to 3546+02	66.48 to 67.16	TBD	ATWS on wetland 100 ft ROW because of DOT fence restriction	Required for DOT ROW Issue
3561+65	67.46	TBD	Spoil placement within 50 ft of ditches	Storage of spoils
3561+80	67.46	TBD	Spoil placement within 50 ft of ditches	Storage of spoils
3580+49	67.81	TBD	Spoil placement within 50 ft of ditch	Storage of spoils

Table 2.3-3 Requested Deviations from the Procedures				
Station	**Milepost**	**Tracts**	**Deviation Request**	**Justification**
3581+04	67.82	TBD	Spoil placement within 50 ft of ditch	Storage of spoils
3600+28	68.19	TBD	Spoil placement within 50 ft of ditch	Storage of spoils
3600+45	68.19	TBD	Spoil placement within 50 ft of ditch	Storage of spoils
3608+48 to 3622+32	68.34 to 68.60	TBD	100 ROW because of DOT fence restriction (piece inside fence will not be used)	Need workspace for loss of easement space due to DOT
3622+32 to 3644+22	68.60 to 69.02	2035.1, 2037.1	100 ft ROW across series of small ditches	Required for ditch crossings spoil placement
3659+26 to 3683+24	69.30 to 69.76	2037.1	100 ft ROW across series of small ditches	Required for ditch crossings spoil placement
3794+77 to 3795+13	71.87 to 71.88	TBC	Additional space within 50' of a water body	Required for Water body Crossing
3858+00 to 3876+82	73.07 to 73.42	2045.1, 2045.2	100' ROW requires filling of canal.	Required for canal plug,
3858+60	73.08	2045.1	ATWS within 50 feet of water body	Required for canal plug
3867+50	73.25	2045.1	ATWS within 50 feet of water body	Required for canal plug
3876+30	73.41	2048.1	ATWS within 50 feet of water body	Required for canal plug
3884+02	73.56	2048	ATWS in Wetland	Required for Tie-in
3933 + 64	74.50	TBD	ATWS within 50 feet of water body	Required extra work space on wetlands for water body crossing
3934 +34	74.51	TBD	ATWS within 50 feet of water body	Required extra work space for water body crossing
4026+90 to 4027+23	76.27 to 76.27		ATWS within 50 feet of water body	Required for water body Crossing
4096+45	77.58	2050.2	ATWS within 50 feet of water body	Required to allow for water body crossing
4098+38	77.62	2050.2	ATWS within 50 feet of water body	Required to allow for water body crossing
4232+92	80.17	3003, 3004, 3005	ATWS within 50 feet of water body	Required to allow for water body crossing
4233+21	80.17	3003, 3004, 3005	ATWS within 50 feet of wetlands	Required to allow for water body crossing
4348+66	82.36	3008.1	ATWS within 50 feet of water body	Required to allow for water body crossing
4350+52	82.40	TBD	ATWS within 50 feet of water body	To allow for water body crossing
4371+40	82.79	TBD	ATWS in wetland	Required for boring
4404+13	83.41	TBD	ATWS in wetland and within 50 ft of water body	Required for Water body crossing
4403+26	83.40	TBD	ATWS in wetland and within 50 ft of water body	Required for Water body crossing
4481+51	84.88	TBD	ATWS in wetland	Required for boring road
4482+51	84.90	TBD	ATWS in wetland	Required for boring road
4489+56	85.03	3021, 3020, 3019, 3018, 3017	ATWS in Wetlands	Possible Variance needed for HDD Pullback on Wetlands

Table 2.3-3

Requested Deviations from the Procedures

Station	Milepost	Tracts	Deviation Request	Justification
4560+00	86.36	TBD	ATWS in wetland	Required for tie-in/bend of pipeline
4632+83	87.74	TBD	ATWS in wetland	Required for Stream Crossing
4633+53	87.76	TBD	ATWS in wetland	Required for Stream Crossing
4643+96	87.95	TBD	ATWS in wetland	Required for Road crossing
4824+37	91.37	3061	TBD	TBD
4990+00	94.51	TBD	ATWS in wetland	Required for tie-in/bend of pipeline
5015+20	94.98	TBD	ATWS in wetland	Required for tie-in/bend of pipeline and road crossing
5256+34	99.55	3072	ATWS within 50 ft of wetland	Required for HDD
5262+78 to 5263+25	99.67 to 99.68	3072	ATWS in wetland	Required for Road crossing
5322+27 to 5328+34	100.80 to 100.92	TBD	ATWS in wetland	Required for road bore and tie-in/bend of pipeline
5421+50	102.68	TBD	ATWS within 50 feet of water body	Required for water body crossing
5422+36	102.70	TBD	ATWS in a wetland	Required for water body crossing
5432+40	102.89	TBD	ATWS in wetland	Required for tie-in/bend of pipeline
5458+93	103.39	4001.2	TBD	TBD
5610+00	106.25	4007	TBD	TBD
5638+89	106.80	TBD	ATWS in wetlands	Required for water body crossing
5639+75	106.81	TBD	ATWS in wetlands	Required for water body crossing
5688+64	107.74	TBD	Extra workspace for tie-in	Required for tie-in/bend of pipeline
5715+35	108.25	TBD	Extra for tie in	Required for tie-in/bend of pipeline
5723+74 to 5723+99	108.40 to 108.41	4010.01	ATWS within 10 feet of the ditch	Required for ditch crossing
5740+35	108.72	4012.02	ATWS in a wetland within 10 feet of ditch	Required for water body crossing
5740+57	108.75	4012.02, 4012.01	ATWS in a wetland within 10 feet of ditch	Required for water body crossing
5768+08	109.24	TBD	ATWS in a wetland within 10 feet of ditch	Required for water body crossing
5768+41	109.25	TBD	ATWS in a wetland within 10 feet of ditch	Required for water body crossing
5795+41	109.76	TBD	ATWS in a wetland within 10 feet of ditch	Required for water body crossing
5797+62	109.80	TBD	ATWS in wetland	Required for tie-in/bend of pipeline
5800+91	109.87	4015	ATWS within 50 feet of a ditch	Required for water body crossing
5810+71	110.05	TBD	ATWS within 50 feet of wetland	Required for road crossing
5810+95	110.06	TBD	ATWS within 50 feet of wetland	Required for road crossing

Table 2.3-3

Requested Deviations from the Procedures

Station	Milepost	Tracts	Deviation Request	Justification
5878+45	111.33	TBD	ATWS in wetland	Required for tie-in/bend of pipeline
5887+67	111.51	TBD	ATWS in wetland	Required for road crossing
5897+53	111.70	TBD	ATWS in wetland for road crossing	Required for road crossing
5970+59 to 5970+72	113.08 to 113.08	TBD	ATWS within 50 feet of a water body	Required for water body crossing
6005+99	113.75	TBD	ATWS in wetlands for canal and road crossing	Required for water body crossing and roadway crossing
6007+67 to 6084+47	113.78 to 115.24	TBD	Additional 50 feet extra work space to create plug and temporarily drain canals.	Required for water body crossing and HDD Pull back
6115+04	115.82	5001	FSC to work out method. Extra work space for water crossing may be needed	Required for Ditch crossing
6151+00 to 6250+10	116.50 to 118.37	TBD	Additional 50 feet extra work space to create plug and temporarily drain across canals.	Required for water body crossing
6285+74	119.05	TBD	ATWS within 50 feet of wetland	Required for water body crossing
6313+59	119.58	TBD	ATWS in a wetland	Required for road crossing
6320+62	119.71	TBD	ATWS in a wetland	Required for ditch crossing in wetland
6320+82	119.71	TBD	ATWS in a wetland	Required for ditch crossing in wetland
6365+77	120.56	5010.4, 5015	Extra space for road crossing in a wetland	Required for road crossing
6394+17	121.10	5015, 5016.3	ATWS in Wetland	Required for road and ditch crossing
6434+04	121.86	5022.1	ATWS in Wetland	Required for water body crossing
6536+27	123.79	TBD	ATWS in Wetland	Required for water body crossing
6537+93 to 6548+93	123.82 to 124.03	TBD	ATWS in Wetland	Required for Pullback
6562+56	124.29	TBD	ATWS in Wetland	Required for HDD pullback
6605+00	125.09	TBD	ATWS in Wetland	Required for access to HDD entry site
6663+66	126.21	5051, 5054, 5028.35, 5040.05	ATWS in Wetland	Required for water body and road crossing
6666+66	126.26	5051, 5054	ATWS in Wetland	Required for tie-in/bend of pipeline

Notes:

1. Where ATWS must be located within 50 feet of a waterway, FSC will maintain a 10 foot buffer from that waterway to minimize environmental impacts.
2. In some areas a small portion of FSC's ROW is divided by an existing DOT security fence and the area on roadway side of this fence will not be used or impacted in any way as FSC will not remove this fence for safety reasons. Thus, although FSC will lease a small portion of this area on the other side of the fence, we have not counted this area toward the 75' maximum ROW width in wetlands and associated requests for deviations.
3. Details on ATWS requirements and requested deviations subject to change pending on the refinement of the FSC Project. Final deviation requests will be provided in the Environmental Report accompanying the Certificate Application in August 2014.

Table 2.3-4

Hydrostatic Test Volumes for HDD Pull Sections Along the FSC Pipeline

HDD	Milepost	Maximum Estimated Volume (gallons)	Water Source
Kissimmee River	54	283,170	Kissimmee River
C-23 Canal	115	110,850	C-23 Canal
SW Warfield Boulevard (SR 710)	124	177,050	Pond adjacent to Warfield Boulevard
Source: UPI Document #21040-506-RPT-00043, Revision A, 3/4/2014, FSC Hydrostatic Test Volumes for HDD Pull Sections			

Table 2.4-1

Wetlands Affected by the FSC Project

Facility	Milepost a/	County	Wetland ID	Wetland Type b/	Crossing Length (Feet) c/	Wetland Impact (Acres)					
						Construction d/			Operation e/		
						PEM	PSS	PFO	PEM	PSS	PFO
Pipeline ROW											
	0.1	Osceola	W-005	PEM	13	0.02					
	0.2	Osceola	W-006	PEM		0.03					
	0.4	Osceola	W-007	PFO							0.06
	0.5	Osceola	W-008	PSS	135		0.16				
	0.5	Osceola	W-009	PEM	15	0.01					
	0.7	Polk	W-010	PFO	207						0.12
	0.7	Polk	W-011	PEM		0.15					
	0.7	Polk	W-011A	PEM	13	0.01					
	0.9	Polk	W-014	PFO	81						0.10
	1.1	Polk	W-019	PEM	36	0.05					
	1.2	Polk	W-021	PEM	149	0.25					
	1.2	Polk	W-022	PFO	300						0.27
	1.3	Polk	W-023	PEM	18	0.03					
	1.6	Polk	W-028	PFO	282						0.30
	1.5	Polk	W-029	PEM	80	0.09					
	1.9	Polk	W-031	PFO	12						0.01
	1.9	Polk	W-032	PFO	1868						1.99
	2.4	Polk	W-033	PFO	394						0.45
	2.6	Polk	W-034	PFO	1413						1.62
	3.4	Polk	W-035	PEM	236	0.25					
	3.4	Polk	W-036	PEM	390	0.45					
	3.5	Polk	W-037	PFO	656						0.75
	3.8	Polk	W-038	PEM	213	0.24					
	3.9	Polk	W-039	PFO	326						0.38
	4.0	Polk	W-040	PFO	424						0.49
	4.2	Polk	W-042	PFO	681						0.78
	4.5	Polk	W-044	PEM	189	0.19					
	4.7	Polk	W-045	PEM	564	0.65					
	4.8	Polk	W-046	PEM	188	0.22					
	5.0	Polk	W-047	PEM	275	0.34					
	5.4	Polk	W-049	PEM	85	0.08					

Table 2.4-1

Wetlands Affected by the FSC Project

Facility	Milepost a/	County	Wetland ID	Wetland Type b/	Crossing Length (Feet) c/	Wetland Impact (Acres)					
						Construction d/			Operation e/		
						PEM	PSS	PFO	PEM	PSS	PFO
	5.5	Polk	W-050	PFO	57						0.07
	5.5	Polk	W-051	PEM	156	0.18					
	5.6	Polk	W-053	PEM	350	0.40					
	5.8	Polk	W-054	PEM	789	0.90					
	5.9	Polk	W-055	PFO	242						0.28
	6.1	Polk	W-056	PEM	15	0.04					
	6.4	Polk	W-058	PFO	1029						0.73
	6.5	Polk	W-059	PEM	118	0.58					
	6.6	Polk	W-060	PEM	1032	0.97					
	6.9	Polk	W-062	PEM	130	0.15					
	7.3	Polk	W-065	PFO	493						0.55
	7.4	Polk	W-066	PEM		0.02					
	7.5	Polk	W-067	PFO	1849						2.04
	7.8	Polk	W-068	PEM		0.01					
	7.9	Polk	W-069	PFO	900						1.03
	8.0	Polk	W-070	PEM		0.01					
	8.3	Polk	W-071	PFO	1184						0.95
	8.4	Polk	W-072	PEM		0.42					
	8.7	Polk	W-073	PFO	166						0.18
	8.7	Polk	W-075	PFO	39						0.04
	9.2	Polk	W-076	PFO	1737						1.41
	9.3	Polk	W-077	PEM	68	0.66					
	9.6	Polk	W-078	PFO	483						0.49
	9.5	Polk	W-079	PEM		0.05					
	9.7	Polk	W-080	PFO	252						0.24
	9.7	Polk	W-081	PEM	119	0.16					
	9.8	Polk	W-082	PFO	2701						2.32
	10.0	Polk	W-083	PEM		0.78					
	10.4	Polk	W-084	PFO	846						0.64
	10.4	Polk	W-085	PEM		0.33					
	10.5	Polk	W-086	PFO	1205						0.90
	10.5	Polk	W-087	PEM		0.49					

FLORIDA SOUTHEAST CONNECTION

Table 2.4-1

Wetlands Affected by the FSC Project

Facility	Milepost a/	County	Wetland ID	Wetland Type b/	Crossing Length (Feet) c/	Wetland Impact (Acres)					
						Construction d/			Operation e/		
						PEM	PSS	PFO	PEM	PSS	PFO
	10.8	Polk	W-088	PFO	553						0.55
	10.8	Polk	W-089	PEM		0.08					
	11.0	Polk	W-090	PFO	201						0.23
	11.0	Polk	W-091	PEM	72	0.11					
	11.2	Polk	W-093	PFO							0.00
	11.3	Polk	W-094	PFO	1405						1.07
	12.3	Polk	W-097	PFO	155						0.14
	12.3	Polk	W-098	PEM	27	0.07					
	12.3	Polk	W-099	PEM	46	0.05					
	12.4	Polk	W-100	PEM	243	0.24					
	12.5	Polk	W-101	PFO	542						0.55
	12.5	Polk	W-102	PEM	38	0.16					
	12.5	Polk	W-103	PFO							0.01
	12.6	Polk	W-104	PEM	88	0.07					
	12.6	Polk	W-105	PEM	105	0.10					
	12.6	Polk	W-106	PFO	55						0.08
	12.7	Polk	W-108	PFO	128						0.15
	13.3	Polk	W-112	PSS	46		0.05				
	13.5	Polk	W-113	PSS	28		0.03				
	16.1	Polk	W-114	PEM	207	0.23					
	17.9	Polk	W-116	PEM		0.02					
	18.6	Polk	W-119	PEM	443	0.53					
	18.8	Polk	W-120	PEM	46	0.05					
	19.5	Polk	W-121	PEM							
	19.7	Polk	W-121A	PEM	1179	1.48					
	19.1	Polk	W-122	PFO	3127						3.00
	28.6	Polk	W-133	PEM	442	0.47					
	30.3	Polk	W-137-A1	PSS			0.01				
	30.9	Polk	W-137-A2	PEM	159	0.15					
	35.9	Polk	W-149	PFO	102						0.13
	35.9	Polk	W-150	PEM	36	0.04					
	35.9	Polk	W-151	PEM	184	0.19					

Table 2.4-1

Wetlands Affected by the FSC Project

Facility	Milepost a/	County	Wetland ID	Wetland Type b/	Crossing Length (Feet) c/	Wetland Impact (Acres)					
						Construction d/			Operation e/		
						PEM	PSS	PFO	PEM	PSS	PFO
	36.2	Polk	W-154	PEM	219	0.25					
	36.2	Polk	W-155	PFO	1396						1.60
	36.4	Polk	W-156	PEM		0.00					
	36.5	Polk	W-157	PEM	10	0.01					
	36.5	Polk	W-158	PEM	27	0.03					
	36.9	Polk	W-159	PEM	14	0.08					
	36.9	Polk	W-161	PEM	529	0.54					
	37.0	Polk	W-162	PEM	202	0.17					
	37.0	Polk	W-163	PFO	80						0.15
	37.0	Polk	W-164	PFO	151						0.18
	37.1	Polk	W-165	PFO	540						0.62
	37.3	Polk	W-167	PEM	281	0.32					
	37.3	Polk	W-168	PFO	73						0.08
	37.3	Polk	W-169	PFO	80						0.09
	37.8	Polk	W-172	PEM	125	0.14					
	38.1	Polk	W-175	PEM	25	0.03					
	38.2	Polk	W-177	PEM	218	0.23					
	38.6	Polk	W-181	PFO	414						0.48
	38.7	Polk	W-185	PFO	833						0.91
	38.9	Polk	W-186	PEM	268	0.31					
	39.6	Polk	W-190	PEM		0.00					
	40.0	Polk	W-193	PEM	322	0.36					
	40.4	Polk	W-196	PEM	404	0.43					
	40.8	Polk	W-198	PEM	25	0.03					
	40.9	Polk	W-199	PFO	280						0.32
	41.0	Polk	W-200	PSS	119		0.11				
	41.3	Polk	W-202	PEM	772	0.89					
	41.6	Polk	W-203	PSS	384		0.44				
	41.8	Polk	W-204	PSS	1744		1.99				
	42.0	Polk	W-205	PEM	70	0.09					
	42.5	Polk	W-207	PEM	613	0.70					
	42.7	Polk	W-208	PEM	47	0.05					

Table 2.4-1

Wetlands Affected by the FSC Project

Facility	Milepost a/	County	Wetland ID	Wetland Type b/	Crossing Length (Feet) c/	Wetland Impact (Acres)					
						Construction d/			Operation e/		
						PEM	PSS	PFO	PEM	PSS	PFO
	42.8	Polk	W-209	PEM	40	0.05					
	42.8	Polk	W-210	PEM	390	0.44					
	43.7	Polk	W-218	PSS			0.02				
	45.5	Polk	W-222	PEM	12	0.01					
	46.7	Polk	W-223	PEM		0.00					
	46.9	Polk	W-223A	PEM		0.02					
	46.9	Polk	W-224	PEM		0.00					
	47.0	Polk	W-225	PEM	755	0.86					
	47.2	Polk	W-227	PEM	47	0.02					
	47.5	Polk	W-228	PEM	137	0.25					
	47.8	Polk	W-229	PSS	243		0.30				
	47.9	Polk	W-230	PEM	18	0.08					
	48.3	Polk	W-231	PFO	72						0.06
	48.6	Polk	W-232	PEM	394	0.46					
	49.2	Polk	W-234	PEM	742	0.85					
	49.6	Polk	W-237	PSS	409		0.46				
	49.7	Polk	W-238	PEM	8	0.01					
	50.7	Polk	W-242	PEM	1059	1.21					
	51.0	Polk	W-247	PEM	614	0.55					
	51.6	Polk	W-249	PEM	16	0.02					
	51.6	Polk	W-250	PEM	22	0.03					
	52.7	Polk	W-251	PEM	74	0.09					
	52.4	Polk	W-251A	PEM	348	0.40					
	51.8	Polk	W-252	PEM	257	0.28					
	52.0	Polk	W-253	PEM	20	0.02					
	52.7	Polk	W-255	PSS	62		0.07				
	52.8	Polk	W-256	PSS	44		0.06				
	52.8	Polk	W-257	PEM	289	0.30					
	53.0	Polk	W-258	PSS	3765		4.33				
	54.7	Osceola	W-264	PEM	238	0.27					
	57.1	Osceola	W-279	PEM	10	0.01					
	57.4	Osceola	W-282A	PEM	159	0.21					

Table 2.4-1

Wetlands Affected by the FSC Project

Facility	Milepost a/	County	Wetland ID	Wetland Type b/	Crossing Length (Feet) c/	Wetland Impact (Acres)					
						Construction d/			Operation e/		
						PEM	PSS	PFO	PEM	PSS	PFO
	57.9	Osceola	W-285A	PEM	557	0.64					
	58.2	Osceola	W-285B	PEM	493	0.56					
	59.3	Osceola	W-290A	PFO	191						0.22
	59.2	Osceola	W-291A	PEM	1590	1.85					
	61.1	Osceola	W-295A	PEM	1016	1.17					
	61.5	Osceola	W-301A	PEM	327	0.38					
	63.2	Osceola	W-309	PEM		0.04					
	62.8	Osceola	W-310	PSS	326		0.28				
	63.7	Osceola	W-312	PEM	216	0.26					
	63.9	Osceola	W-312A	PEM	547	0.63					
	64.3	Osceola	W-315	PEM	601	0.69					
	64.7	Osceola	W-316A	PEM	416	0.48					
	65.0	Osceola	W-317B	PEM	285	0.33					
	65.6	Osceola	W-320	PSS	579		0.67				
	66.0	Osceola	W-321	PEM		0.52					
	66.0	Osceola	W-322	PEM	777	0.61					
	66.1	Osceola	W-325	PEM		0.01					
	66.1	Osceola	W-326	PEM		0.00					
	66.2	Osceola	W-327	PEM		0.00					
	66.2	Osceola	W-328	PEM		0.00					
	66.4	Osceola	W-330	PEM	38	0.02					
	66.4	Osceola	W-331	PEM		0.00					
	66.4	Osceola	W-332	PEM		0.00					
	66.4	Osceola	W-333	PEM		0.00					
	66.5	Osceola	W-334	PEM	834	1.08					
	66.5	Osceola	W-335	PSS	434		0.38				
	66.7	Osceola	W-336	PEM	978	1.00					
	66.9	Osceola	W-338	PSS		0.00					
	67.1	Osceola	W-339	PEM	438	0.54					
	67.3	Osceola	W-340	PEM	398	0.46					
	67.4	Osceola	W-341	PEM	29	0.03					
	67.6	Osceola	W-342	PEM	586	0.67					

Table 2.4-1 Wetlands Affected by the FSC Project											
Facility	Milepost a/	County	Wetland ID	Wetland Type b/	Crossing Length (Feet) c/	Wetland Impact (Acres)					
						Construction d/			Operation e/		
						PEM	PSS	PFO	PEM	PSS	PFO
	67.7	Osceola	W-343	PEM	32	0.04					
	67.8	Osceola	W-344	PEM	59	0.07					
	68.4	Osceola	W-347	PEM		0.33					
	68.4	Osceola	W-348	PEM	805	0.68					
	68.5	Osceola	W-349	PEM	576	0.49					
	68.7	Osceola	W-350	PEM	103	0.12					
	69.0	Osceola	W-351	PEM	30	0.03					
	70.0	Osceola	W-352	PEM	1849	2.13					
	69.4	Osceola	W-353	PEM	39	0.04					
	69.5	Osceola	W-354	PEM	21	0.02					
	69.9	Osceola	W-355	PEM	102	0.12					
	70.8	Osceola	W-358	PEM	985	1.21					
	71.1	Osceola	W-359	PEM	1808	2.07					
	71.6	Osceola	W-360	PEM	520	0.49					
	72.1	Osceola	W-361	PEM	510	0.50					
	72.4	Osceola	W-362	PEM		0.00					
	73.6	Osceola	W-365	PFO	154						0.23
	73.6	Osceola	W-366	PEM	447	0.43					
	73.7	Osceola	W-367	PFO		0.00					
	73.8	Osceola	W-368	PEM	566	0.63					
	74.5	Osceola	W-370	PEM		0.00					
	74.4	Osceola	W-371	PFO	774						0.90
	74.5	Osceola	W-372	PFO	112						0.11
	74.8	Osceola	W-373	PEM	160	0.13					
	75.4	Osceola	W-375	PEM	19	0.03					
	75.9	Osceola	W-380	PEM	12	0.02					
	77.1	Osceola	W-388	PFO	610						0.81
	77.3	Osceola	W-389	PSS			0.20				
	77.5	Osceola	W-391	PEM	217	0.46					
	77.6	Osceola	W-392	PFO							0.05
	77.6	Osceola	W-393	PFO							0.02
	77.6	Osceola	W-394	PFO							0.02

Table 2.4-1

Wetlands Affected by the FSC Project

Facility	Milepost a/	County	Wetland ID	Wetland Type b/	Crossing Length (Feet) c/	Wetland Impact (Acres)					
						Construction d/			Operation e/		
						PEM	PSS	PFO	PEM	PSS	PFO
	77.6	Osceola	W-395	PEM	207	0.21					
	77.6	Osceola	W-396	PFO							0.02
	79.2	Okeechobee	W-404	PEM	702	0.81					
	80.1	Okeechobee	W-406	PEM	9	0.05					
	80.2	Okeechobee	W-407	PEM		0.00					
	80.2	Okeechobee	W-408	PEM		0.05					
	80.3	Okeechobee	W-410	PEM	219	0.22					
	80.4	Okeechobee	W-411	PEM	672	0.56					
	80.4	Okeechobee	W-412	PSS			0.20				
	80.4	Okeechobee	W-413	PSS		0.00					
	80.6	Okeechobee	W-414	PEM	12	0.01					
	80.7	Okeechobee	W-415	PEM	25	0.02					
	81.0	Okeechobee	W-417	PEM	103	0.11					
	80.9	Okeechobee	W-418	PEM		0.02					
	81.2	Okeechobee	W-419	PSS	795		0.91				
	81.5	Okeechobee	W-420	PEM	540	0.62					
	82.1	Okeechobee	W-423	PFO	261						0.30
	82.4	Okeechobee	W-424	PFO	186						0.21
	82.4	Okeechobee	W-425	PFO	1347						1.55
	82.6	Okeechobee	W-426	PSS	123		0.14				
	82.7	Okeechobee	W-427	PEM	585	0.67					
	82.9	Okeechobee	W-429	PSS	179		0.21				
	82.9	Okeechobee	W-430	PFO	61						0.07
	83.3	Okeechobee	W-432	PFO	510						0.59
	83.4	Okeechobee	W-433	PFO	443						0.51
	83.5	Okeechobee	W-434	PEM		0.00					
	83.8	Okeechobee	W-436	PEM		0.11					
	84.2	Okeechobee	W-438	PEM	413	0.47					
	84.6	Okeechobee	W-441	PEM		0.04					
	84.7	Okeechobee	W-442	PFO	870						1.01
	84.9	Okeechobee	W-444	PEM	21	0.02					
	85.0	Okeechobee	W-446	PFO	202						0.25

Table 2.4-1

Wetlands Affected by the FSC Project

Facility	Milepost a/	County	Wetland ID	Wetland Type b/	Crossing Length (Feet) c/	Wetland Impact (Acres)					
						Construction d/			Operation e/		
						PEM	PSS	PFO	PEM	PSS	PFO
	85.1	Okeechobee	W-447	PFO	128						0.15
	85.1	Okeechobee	W-448	PFO	29						0.06
	86.1	Okeechobee	W-454	PFO	1802						2.07
	87.6	Okeechobee	W-455	PFO	694						0.78
	87.8	Okeechobee	W-456	PFO	360						0.38
	87.9	Okeechobee	W-457	PEM		0.00					
	88.0	Okeechobee	W-458	PEM		0.10					
	88.1	Okeechobee	W-459	PFO	82						0.09
	88.1	Okeechobee	W-460	PFO	11						0.01
	89.9	Okeechobee	W-464A	PEM	640	0.75					
	89.7	Okeechobee	W-464B	PFO	939						1.04
	91.4	Okeechobee	W-465	PFO							0.20
	91.3	Okeechobee	W-466	PFO							0.33
	92.2	Okeechobee	W-471	PEM	21	0.02					
	93.3	Okeechobee	W-473	PEM	108	0.11					
	94.3	Okeechobee	W-480A	PFO	2075						2.39
	94.7	Okeechobee	W-480B	PFO	909						1.11
	95.4	Okeechobee	W-482	PEM	11	0.02					
	95.8	Okeechobee	W-484	PEM	12	0.01					
	96.9	Okeechobee	W-488	PEM	27	0.02					
	96.9	Okeechobee	W-489	PEM		0.00					
	96.9	Okeechobee	W-490	PFO							0.02
	97.9	Okeechobee	W-493	PEM	9	0.01					
	99.3	Okeechobee	W-495	PEM	306	0.37					
	99.3	Okeechobee	W-496A	PFO	398						0.45
	99.4	Okeechobee	W-496B	PFO							0.01
	99.4	Okeechobee	W-496D	PFO	69						0.08
	99.4	Okeechobee	W-496E	PFO	426						0.48
	99.5	Okeechobee	W-496F	PFO		0.00					
	99.5	Okeechobee	W-496G	PFO	164						0.19
	99.6	Okeechobee	W-497	PEM	10	0.01					
	100.6	Okeechobee	W-499	PEM	1152	1.33					

Table 2.4-1 Wetlands Affected by the FSC Project											
Facility	Milepost a/	County	Wetland ID	Wetland Type b/	Crossing Length (Feet) c/	Wetland Impact (Acres)					
						Construction d/			Operation e/		
						PEM	PSS	PFO	PEM	PSS	PFO
	100.8	Okeechobee	W-500	PFO		0.00					
	100.8	Okeechobee	W-501	PEM	338	0.39					
	100.9	Okeechobee	W-502	PEM	29	0.03					
	101.2	Okeechobee	W-504	PEM	30	0.03					
	101.6	Okeechobee	W-505	PEM	242	0.30					
	102.4	Okeechobee	W-507	PFO	136						0.15
	102.6	Okeechobee	W-508A	PFO	261						0.30
	102.8	St. Lucie	W-508B	PFO	364						0.45
	102.8	St. Lucie	W-509	PEM	380	0.38					
	102.9	St. Lucie	W-510	PSS	1711		1.96				
	103.0	St. Lucie	W-513	PEM	587	0.66					
	103.4	St. Lucie	W-514	PFO	511						0.59
	103.4	St. Lucie	W-515	PSS	1208		1.35				
	103.4	St. Lucie	W-516	PFO	28						0.06
	103.7	St. Lucie	W-518	PEM	442	0.51					
	103.8	St. Lucie	W-519	PFO	213						0.24
	103.7	St. Lucie	W-520A	PFO	89						0.10
	103.8	St. Lucie	W-520B	PFO	39						0.04
	104.0	St. Lucie	W-521	PFO	45						0.05
	104.0	St. Lucie	W-523	PFO	249						0.29
	104.1	St. Lucie	W-524	PFO	332						0.38
	104.2	St. Lucie	W-525	PFO	222						0.25
	104.5	St. Lucie	W-526	PEM	1986	2.27					
	105.0	St. Lucie	W-527	PEM		0.00					
	105.2	St. Lucie	W-528	PSS	627		0.72				
	105.3	St. Lucie	W-529	PEM	820	0.94					
	105.8	St. Lucie	W-530	PFO	264						0.28
	106.0	St. Lucie	W-531	PFO	717						0.82
	106.2	St. Lucie	W-532A	PFO	251						0.27
	106.2	St. Lucie	W-532B	PFO		0.00					
	106.3	St. Lucie	W-532E	PFO	337						0.39
	106.8	St. Lucie	W-534	PEM	1013	1.15					

Table 2.4-1

Wetlands Affected by the FSC Project

Facility	Milepost a/	County	Wetland ID	Wetland Type b/	Crossing Length (Feet) c/	Wetland Impact (Acres)					
						Construction d/			Operation e/		
						PEM	PSS	PFO	PEM	PSS	PFO
	107.8	St. Lucie	W-535A	PFO	2416						2.78
	108.4	St. Lucie	W-536D	PEM	25	0.03					
	108.7	St. Lucie	W-540A	PFO	22						0.02
	109.2	St. Lucie	W-544A	PFO	33						0.03
	109.6	St. Lucie	W-546A	PFO	55						0.06
	109.7	St. Lucie	W-548A	PFO	221						0.25
	109.8	St. Lucie	W-548C	PEM	3	0.00					
	109.8	St. Lucie	W-548D	PEM	2	0.00					
	110.0	St. Lucie	W-549A	PEM	25	0.03					
	110.1	St. Lucie	W-550	PSS	38		0.04				
	110.3	St. Lucie	W-551	PFO	99						0.11
	110.4	St. Lucie	W-552	PEM	37	0.04					
	110.7	St. Lucie	W-553	PFO							0.03
	110.8	St. Lucie	W-554	PEM	23	0.03					
	110.9	St. Lucie	W-555	PFO	98						0.09
	111.1	St. Lucie	W-556	PEM	20	0.02					
	111.3	St. Lucie	W-557	PFO	803						0.92
	111.5	St. Lucie	W-559	PEM	1713	1.85					
	112.1	St. Lucie	W-560	PSS	91		0.40				
	112.1	St. Lucie	W-561	PEM	519	0.53					
	113.7	St. Lucie	W-562	PEM	211	0.24					
	112.8	St. Lucie	W-563	PFO	415						0.48
	113.2	St. Lucie	W-565	PFO	29						0.03
	113.3	St. Lucie	W-566	PEM	75	0.08					
	113.5	St. Lucie	W-567	PEM	22	0.03					
	113.6	St. Lucie	W-568	PFO		0.00					
	113.7	St. Lucie	W-571	PEM	35	0.04					
	113.8	St. Lucie	W-572	PEM	27	0.03					
	114.0	St. Lucie	W-573	PEM	39	0.04					
	114.1	St. Lucie	W-574	PEM	29	0.03					
	114.2	St. Lucie	W-575	PEM	27	0.03					
	114.3	St. Lucie	W-576	PEM	28	0.03					

Table 2.4-1

Wetlands Affected by the FSC Project

Facility	Milepost a/	County	Wetland ID	Wetland Type b/	Crossing Length (Feet) c/	Wetland Impact (Acres)					
						Construction d/			Operation e/		
						PEM	PSS	PFO	PEM	PSS	PFO
	114.5	St. Lucie	W-577	PEM	39	0.04					
	114.6	St. Lucie	W-578	PEM	31	0.04					
	114.8	St. Lucie	W-579	PEM	32	0.04					
	115.0	St. Lucie	W-580	PEM	29	0.03					
	115.8	Martin	W-587	PEM	59	0.07					
	116.7	Martin	W-589	PEM	19	0.02					
	116.8	Martin	W-590	PEM	18	0.02					
	116.9	Martin	W-591	PEM	24	0.03					
	117.0	Martin	W-592	PEM	21	0.02					
	117.2	Martin	W-593	PEM	23	0.03					
	117.3	Martin	W-594	PEM	24	0.03					
	117.4	Martin	W-595	PEM	23	0.03					
	117.5	Martin	W-596	PEM	23	0.03					
	117.7	Martin	W-597	PEM	21	0.02					
	117.8	Martin	W-598	PEM	19	0.02					
	117.9	Martin	W-599	PEM	31	0.04					
	118.1	Martin	W-600	PEM	13	0.02					
	118.2	Martin	W-601	PEM	20	0.02					
	118.3	Martin	W-602	PEM	30	0.03					
	118.5	Martin	W-603	PEM	135	0.13					
	118.4	Martin	W-604	PEM	56	0.06					
	118.7	Martin	W-605	PFO							0.07
	119.4	Martin	W-608	PEM	17	0.02					
	119.5	Martin	W-609	PEM	16	0.02					
	119.5	Martin	W-610	PEM	13	0.02					
	119.6	Martin	W-611	PFO	1180						1.40
	119.9	Martin	W-612	PFO	6						0.08
	120.2	Martin	W-613	PEM	86	0.10					
	120.5	Martin	W-615	PEM	17	0.02					
	120.7	Martin	W-616	PEM	2123	2.42					
	121.5	Martin	W-617	PEM	794	0.93					
	121.8	Martin	W-621a	PEM	181	0.19					

Table 2.4-1

Wetlands Affected by the FSC Project

Facility	Milepost a/	County	Wetland ID	Wetland Type b/	Crossing Length (Feet) c/	Wetland Impact (Acres)					
						Construction d/			Operation e/		
						PEM	PSS	PFO	PEM	PSS	PFO
	121.9	Martin	W-621b	PEM	177	0.20					
	122.1	Martin	W-622	PEM	487	0.56					
	122.6	Martin	W-624	PEM	624	0.74					
	122.9	Martin	W-624A	PEM	100	0.11					
	123.0	Martin	W-626	PEM	231	0.24					
	123.0	Martin	W-627	PEM	8	0.01					
	123.3	Martin	W-629	PFO	1310						1.51
	123.6	Martin	W-630	PFO							0.02
	123.6	Martin	W-631	PEM	1387	1.48					
	123.7	Martin	W-633	PFO	186						0.27
	123.8	Martin	W-634	PFO	33						0.03
	123.9	Martin	W-635	PFO	487						0.58
	123.9	Martin	W-636	PEM	45	0.04					
	124.0	Martin	W-637	PEM	289	0.34					
	124.3	Martin	W-638	PSS	67		0.08				
	124.4	Martin	W-639	PSS	280		0.03				
	125.1	Martin	W-648	PEM	30	0.03					
	125.2	Martin	W-653	PFO	36						0.04
	125.9	Martin	W-654	PEM	104	0.17					
	126.2	Martin	W-656	PEM	49	0.06					
	126.2	Martin	W-659	PEM	30	0.03					
	126.9	Martin	W-661	PEM	324	0.36					
				Pipeline ROW Subtotal	**128,460**	**71.70**	**15.60**	**0.00**	**0.00**	**0.00**	**59.76**
Additional Temporary Workspace											
	0.5	Osceola	W-007	PFO	NA			0.22			
	0.9	Polk	W-014	PFO	NA			0.30			
	1.0	Polk	W-016	PEM	NA	0.01					
	1.8	Polk	W-031	PFO	NA			0.15			
	1.9	Polk	W-031	PFO	NA			0.10			
	1.9	Polk	W-032	PFO	NA			0.13			
	2.8	Polk	W-034	PFO	NA			0.11			
	3.4	Polk	W-035	PEM	NA	0.00					

Table 2.4-1

Wetlands Affected by the FSC Project

Facility	Milepost a/	County	Wetland ID	Wetland Type b/	Crossing Length (Feet) c/	Wetland Impact (Acres)					
						Construction d/			Operation e/		
						PEM	PSS	PFO	PEM	PSS	PFO
	3.4	Polk	W-036	PEM	NA	0.20					
	4.6	Polk	W-044	PEM	NA	0.01					
	5.8	Polk	W-054	PEM	NA	0.13					
	10.3	Polk	W-082	PFO	NA			0.06			
	10.3	Polk	W-084	PFO	NA			0.05			
	12.3	Polk	W-097	PFO	NA			0.17			
	12.3	Polk	W-099	PEM	NA	0.14					
	12.6	Polk	W-105	PEM	NA	0.06					
	12.7	Polk	W-108	PFO	NA			0.13			
	19.9	Polk	W-121A	PEM	NA	0.08					
	22.6	Polk	W-123	PSS	NA						
	23.5	Polk	W-130	PEM	NA	0.05					
	38.6	Polk	W-181	PFO	NA			0.09			
	38.7	Polk	W-185	PFO	NA			0.26			
	39.9	Polk	W-193	PEM	NA	0.03					
	41.2	Polk	W-201	PEM	NA	0.05					
	42.5	Polk	W-207	PEM	NA	0.18					
	46.9	Polk	W-223A	PEM	NA	0.09					
	51.2	Polk	W-242	PEM	NA	0.11					
	51.1	Polk	W-247	PEM	NA	0.02					
	52.7	Polk	W-251	PEM	NA	0.13					
	52.7	Polk	W-255	PSS	NA		0.06				
	52.8	Polk	W-256	PSS	NA		0.04				
	52.8	Polk	W-257	PEM	NA	0.05					
	53.2	Polk	W-258	PSS	NA		0.46				
	53.6	Polk	W-258	PSS	NA		0.38				
	53.7	Polk	W-259	PSS	NA		0.10				
	54.3	Osceola	W-262	PEM	NA	0.01					
	54.7	Osceola	W-263	PEM	NA	4.64					
	59.2	Osceola	W-291A	PEM	NA	0.34					
	63.9	Osceola	W-312A	PEM	NA	0.24					
	73.6	Osceola	W-366	PEM	NA	0.05					

Table 2.4-1

Wetlands Affected by the FSC Project

Facility	Milepost a/	County	Wetland ID	Wetland Type b/	Crossing Length (Feet) c/	Wetland Impact (Acres)					
						Construction d/			Operation e/		
						PEM	PSS	PFO	PEM	PSS	PFO
	74.5	Osceola	W-371	PFO	NA			0.17			
	82.3	Okeechobee	W-424	PFO	NA			0.10			
	82.4	Okeechobee	W-425	PFO	NA			0.21			
	82.7	Okeechobee	W-427	PEM	NA	0.13					
	83.4	Okeechobee	W-432	PFO	NA			0.17			
	83.4	Okeechobee	W-433	PFO	NA			0.17			
	84.9	Okeechobee	W-442	PFO	NA			0.02			
	84.9	Okeechobee	W-444	PEM	NA	0.02					
	85.0	Okeechobee	W-446	PFO	NA			0.27			
	85.1	Okeechobee	W-447	PFO	NA			0.17			
	85.1	Okeechobee	W-448	PFO	NA			0.05			
	86.3	Okeechobee	W-454	PFO	NA			0.21			
	87.7	Okeechobee	W-455	PFO	NA			0.17			
	87.7	Okeechobee	W-456	PFO	NA			0.17			
	87.9	Okeechobee	W-457	PEM	NA	0.16					
	91.5	Okeechobee	W-465	PFO	NA						
	91.4	Okeechobee	W-466	PFO	NA			0.01			
	92.2	Okeechobee	W-471	PEM	NA	0.05					
	92.2	Okeechobee	W-472	PEM	NA	0.01					
	94.5	Okeechobee	W-480A	PFO	NA			0.21			
	94.9	Okeechobee	W-480B	PFO	NA			0.22			
	95.3	Okeechobee	W-482	PEM	NA	0.00					
	95.7	Okeechobee	W-482	PEM	NA	0.02					
	99.3	Okeechobee	W-495	PEM	NA	0.11					
	99.4	Okeechobee	W-496A	PFO	NA			0.17			
	99.4	Okeechobee	W-496E	PFO	NA			0.17			
	99.6	Okeechobee	W-497	PEM	NA	0.00					
	100.8	Okeechobee	W-499	PEM	NA	0.02					
	100.8	Okeechobee	W-501	PEM	NA	0.20					
	100.9	Okeechobee	W-502	PEM	NA	0.11					
	101.1	Okeechobee	W-504	PEM	NA	0.00					
	102.6	Okeechobee	W-508B	PFO	NA			0.05			

Table 2.4-1

Wetlands Affected by the FSC Project

Facility	Milepost a/	County	Wetland ID	Wetland Type b/	Crossing Length (Feet) c/	Wetland Impact (Acres)					
						Construction d/			Operation e/		
						PEM	PSS	PFO	PEM	PSS	PFO
	102.7	Okeechobee	W-508B	PFO	NA			0.06			
	102.8	Okeechobee	W-508B	PFO	NA			0.03			
	102.8	St. Lucie	W-509	PEM	NA	0.34					
	106.3	St. Lucie	W-532A	PFO	NA			0.11			
	106.3	St. Lucie	W-532E	PFO	NA			0.60			
	106.8	St. Lucie	W-534	PEM	NA	0.23					
	107.7	St. Lucie	W-535A	PFO	NA			0.18			
	108.2	St. Lucie	W-535A	PFO	NA			0.15			
	108.4	St. Lucie	W-536D	PEM	NA	0.05					
	108.5	St. Lucie	W-537A	PEM	NA	0.00					
	108.7	St. Lucie	W-539A	PEM	NA	0.01					
	108.7	St. Lucie	W-540A	PFO	NA			0.05			
	109.6	St. Lucie	W-546A	PFO	NA	0.00					
	109.7	St. Lucie	W-548A	PFO	NA			0.41			
	109.8	St. Lucie	W-548C	PEM	NA	0.00					
	109.8	St. Lucie	W-548D	PEM	NA	0.00					
	110.0	St. Lucie	W-549A	PEM	NA	0.07					
	111.3	St. Lucie	W-557	PFO	NA			0.33			
	111.5	St. Lucie	W-559	PEM	NA	0.03					
	111.7	St. Lucie	W-559	PEM	NA	0.03					
	113.7	St. Lucie	W-562	PEM	NA	0.16					
	113.3	St. Lucie	W-565	PFO	NA	0.00					
	113.7	St. Lucie	W-568	PFO	NA	0.00					
	113.7	St. Lucie	W-568A	PFO	NA			0.07			
	113.8	St. Lucie	W-572	PEM	NA	0.05					
	114.0	St. Lucie	W-573	PEM	NA	0.07					
	114.1	St. Lucie	W-574	PEM	NA	0.05					
	114.2	St. Lucie	W-575	PEM	NA	0.05					
	114.3	St. Lucie	W-576	PEM	NA	0.02					
	114.4	St. Lucie	W-576	PEM	NA	0.04					
	114.5	St. Lucie	W-577	PEM	NA	0.07					
	114.6	St. Lucie	W-578	PEM	NA	0.05					

Table 2.4-1

Wetlands Affected by the FSC Project

Facility	Milepost a/	County	Wetland ID	Wetland Type b/	Crossing Length (Feet) c/	Wetland Impact (Acres)					
						Construction d/			Operation e/		
						PEM	PSS	PFO	PEM	PSS	PFO
	114.8	St. Lucie	W-579	PEM	NA	0.06					
	115.0	St. Lucie	W-580	PEM	NA	0.05					
	115.8	Martin	W-585	PEM	NA	0.00					
	116.7	Martin	W-589	PEM	NA	0.04					
	116.8	Martin	W-590	PEM	NA	0.05					
	116.9	Martin	W-591	PEM	NA	0.06					
	117.0	Martin	W-592	PEM	NA	0.06					
	117.2	Martin	W-593	PEM	NA	0.06					
	117.3	Martin	W-594	PEM	NA	0.07					
	117.4	Martin	W-595	PEM	NA	0.06					
	117.5	Martin	W-596	PEM	NA	0.06					
	117.7	Martin	W-597	PEM	NA	0.06					
	117.8	Martin	W-598	PEM	NA	0.05					
	117.9	Martin	W-599	PEM	NA	0.07					
	118.1	Martin	W-600	PEM	NA	0.03					
	118.2	Martin	W-601	PEM	NA	0.04					
	118.3	Martin	W-602	PEM	NA	0.05					
	118.3	Martin	W-603	PEM	NA	0.00					
	119.5	Martin	W-609	PEM	NA	0.00					
	119.5	Martin	W-609-A5	PEM	NA	0.00					
	119.5	Martin	W-609-A6	PEM	NA	0.00					
	119.6	Martin	W-611	PFO	NA			0.40			
	119.7	Martin	W-611	PFO	NA			0.34			
	120.5	Martin	W-615	PEM	NA	0.05					
	120.8	Martin	W-616	PEM	NA	0.40					
	120.9	Martin	W-616	PEM	NA	0.52					
	121.1	Martin	W-617	PEM	NA	0.04					
	121.8	Martin	W-621a	PEM	NA	0.18					
	121.9	Martin	W-621b	PEM	NA	0.22					
	124.0	Martin	W-627-A21	PEM	NA	0.00					
	123.5	Martin	W-629	PFO	NA			0.03			
	123.5	Martin	W-630	PFO	NA	0.00					

FLORIDA SOUTHEAST CONNECTION

Table 2.4-1

Wetlands Affected by the FSC Project

Facility	Milepost a/	County	Wetland ID	Wetland Type b/	Crossing Length (Feet) c/	Wetland Impact (Acres)					
						Construction d/			Operation e/		
						PEM	PSS	PFO	PEM	PSS	PFO
	123.5	Martin	W-631	PEM	NA	0.03					
	123.8	Martin	W-631	PEM	NA	0.32					
	123.8	Martin	W-634	PFO	NA			0.05			
	123.9	Martin	W-635	PFO	NA			0.54			
	123.9	Martin	W-636	PEM	NA	0.04					
	123.9	Martin	W-637	PEM	NA	0.13					
	124.3	Martin	W-638	PSS	NA		0.04				
	125.1	Martin	W-648	PEM	NA	0.07					
	126.1	Martin	W-654	PEM	NA	0.05					
	126.2	Martin	W-656	PEM	NA	0.11					
	126.2	Martin	W-659	PEM	NA	0.03					
				ATWS Subtotal	**0.0**	**11.83**	**1.08**	**7.83**	**0.00**	**0.00**	**0.00**
Temporary Construction Easement											
	0.1	Osceola	W-005	PEM	NA	0.01					
	0.5	Osceola	W-007	PFO	NA			0.17			
	0.5	Osceola	W-008	PSS	NA	0.00					
	0.7	Polk	W-011	PEM	NA	0.21					
	0.9	Polk	W-014	PFO	NA			0.15			
	1.0	Polk	W-016	PEM	NA	0.00					
	1.1	Polk	W-019	PEM	NA	0.07					
	1.2	Polk	W-021	PEM	NA	0.19					
	1.2	Polk	W-022	PFO	NA			0.05			
	1.3	Polk	W-023	PEM	NA	0.02					
	1.6	Polk	W-028	PFO	NA			0.17			
	1.5	Polk	W-029	PEM	NA	0.02					
	1.8	Polk	W-031	PFO	NA			0.03			
	2.2	Polk	W-032	PFO	NA			1.09			
	2.4	Polk	W-033	PFO	NA			0.30			
	2.7	Polk	W-034	PFO	NA			0.82			
	3.4	Polk	W-035	PEM	NA	0.19					
	3.4	Polk	W-036	PEM	NA	0.23					
	3.5	Polk	W-037	PFO	NA			0.36			

Table 2.4-1

Wetlands Affected by the FSC Project

Facility	Milepost a/	County	Wetland ID	Wetland Type b/	Crossing Length (Feet) c/	Wetland Impact (Acres)					
						Construction d/			Operation e/		
						PEM	PSS	PFO	PEM	PSS	PFO
	3.8	Polk	W-038	PEM	NA	0.14					
	3.9	Polk	W-039	PFO	NA			0.18			
	4.0	Polk	W-040	PFO	NA			0.24			
	4.2	Polk	W-042	PFO	NA			0.40			
	4.7	Polk	W-045	PEM	NA	0.32					
	4.8	Polk	W-046	PEM	NA	0.17					
	5.0	Polk	W-047	PEM	NA	0.24					
	5.4	Polk	W-049	PEM	NA	0.06					
	5.5	Polk	W-050	PFO	NA			0.01			
	5.5	Polk	W-051	PEM	NA	0.06					
	5.6	Polk	W-053	PEM	NA	0.21					
	5.8	Polk	W-054	PEM	NA	0.45					
	6.0	Polk	W-055	PFO	NA			0.14			
	6.1	Polk	W-056	PEM	NA	0.09					
	6.5	Polk	W-058	PFO	NA			0.66			
	6.7	Polk	W-060	PEM	NA	0.58					
	6.9	Polk	W-062	PEM	NA	0.07					
	7.0	Polk	W-063	PEM	NA	0.00					
	7.3	Polk	W-065	PFO	NA			0.27			
	7.8	Polk	W-067	PFO	NA			1.08			
	8.0	Polk	W-069	PFO	NA			0.55			
	8.4	Polk	W-071	PFO	NA			0.61			
	8.7	Polk	W-073	PFO	NA			0.12			
	8.7	Polk	W-075	PFO	NA			0.02			
	9.5	Polk	W-076	PFO	NA			1.05			
	9.6	Polk	W-078	PFO	NA			0.30			
	9.7	Polk	W-080	PFO	NA			0.21			
	10.3	Polk	W-082	PFO	NA			1.55			
	10.4	Polk	W-084	PFO	NA			0.50			
	10.7	Polk	W-086	PFO	NA			0.69			
	10.8	Polk	W-088	PFO	NA			0.28			
	11.0	Polk	W-090	PFO	NA			0.16			

Table 2.4-1

Wetlands Affected by the FSC Project

Facility	Milepost a/	County	Wetland ID	Wetland Type b/	Crossing Length (Feet) c/	Wetland Impact (Acres)					
						Construction d/			Operation e/		
						PEM	PSS	PFO	PEM	PSS	PFO
	11.5	Polk	W-094	PFO	NA			0.86			
	11.6	Polk	W-094A	PFO	NA			0.01			
	12.3	Polk	W-097	PFO	NA			0.13			
	12.3	Polk	W-098	PEM	NA	0.00					
	12.3	Polk	W-099	PEM	NA	0.05					
	12.4	Polk	W-100	PEM	NA	0.03					
	12.6	Polk	W-101	PFO	NA			0.36			
	12.5	Polk	W-103	PFO	NA			0.14			
	12.6	Polk	W-106	PFO	NA			0.09			
	12.7	Polk	W-108	PFO	NA			0.09			
	12.9	Polk	W-109	PEM	NA	0.00					
	13.3	Polk	W-112	PSS	NA		0.03				
	13.5	Polk	W-113	PSS	NA		0.02				
	16.1	Polk	W-114	PEM	NA	0.11					
	18.6	Polk	W-119	PEM	NA	0.17					
	19.9	Polk	W-121A	PEM	NA	0.48					
	19.1	Polk	W-122	PFO	NA			2.01			
	28.6	Polk	W-133	PEM	NA	0.02					
	29.6	Polk	W-136	PEM	NA						
	30.3	Polk	W-137-A1	PSS	NA		0.06				
	30.9	Polk	W-137-A2	PEM	NA	0.09					
	35.9	Polk	W-149	PFO	NA			0.17			
	36.0	Polk	W-150	PEM	NA	0.04					
	36.2	Polk	W-154	PEM	NA	0.08					
	36.5	Polk	W-155	PFO	NA			0.78			
	36.4	Polk	W-156	PEM	NA	0.07					
	36.5	Polk	W-157	PEM	NA	0.00					
	36.5	Polk	W-158	PEM	NA	0.02					
	36.8	Polk	W-159	PEM	NA	0.00					
	36.9	Polk	W-161	PEM	NA	0.26					
	37.0	Polk	W-162	PEM	NA	0.08					
	37.0	Polk	W-163	PFO	NA			0.10			

Table 2.4-1

Wetlands Affected by the FSC Project

Facility	Milepost a/	County	Wetland ID	Wetland Type b/	Crossing Length (Feet) c/	Wetland Impact (Acres)					
						Construction d/			Operation e/		
						PEM	PSS	PFO	PEM	PSS	PFO
	37.0	Polk	W-164	PFO	NA			0.06			
	37.1	Polk	W-165	PFO	NA			0.31			
	37.3	Polk	W-167	PEM	NA	0.17					
	37.3	Polk	W-168	PFO	NA			0.02			
	37.3	Polk	W-169	PFO	NA			0.04			
	37.9	Polk	W-172	PEM	NA	0.10					
	37.9	Polk	W-173A	PEM	NA	0.00					
	38.1	Polk	W-175	PEM	NA	0.01					
	38.3	Polk	W-177	PEM	NA	0.12					
	38.6	Polk	W-181	PFO	NA			0.24			
	38.8	Polk	W-185	PFO	NA			0.48			
	38.9	Polk	W-186	PEM	NA	0.17					
	40.0	Polk	W-193	PEM	NA	0.15					
	40.4	Polk	W-196	PEM	NA	0.19					
	40.8	Polk	W-198	PEM	NA	0.01					
	40.9	Polk	W-199	PFO	NA			0.16			
	41.0	Polk	W-200	PSS	NA		0.12				
	41.3	Polk	W-202	PEM	NA	0.44					
	41.6	Polk	W-203	PSS	NA		0.20				
	41.8	Polk	W-204	PSS	NA		0.89				
	42.0	Polk	W-205	PEM	NA	0.12					
	42.5	Polk	W-207	PEM	NA	0.32					
	42.7	Polk	W-208	PEM	NA						
	42.8	Polk	W-209	PEM	NA	0.02					
	42.8	Polk	W-210	PEM	NA	0.18					
	43.7	Polk	W-218	PSS	NA		0.13				
	45.5	Polk	W-222	PEM	NA	0.01					
	46.7	Polk	W-223	PEM	NA	0.01					
	46.9	Polk	W-223A	PEM	NA	0.12					
	46.9	Polk	W-224	PEM	NA	0.01					
	47.1	Polk	W-225	PEM	NA	0.41					
	47.5	Polk	W-228	PEM	NA	0.05					

Table 2.4-1

Wetlands Affected by the FSC Project

Facility	Milepost a/	County	Wetland ID	Wetland Type b/	Crossing Length (Feet) c/	Wetland Impact (Acres)					
						Construction d/			Operation e/		
						PEM	PSS	PFO	PEM	PSS	PFO
	47.8	Polk	W-229	PSS	NA		0.15				
	47.9	Polk	W-230	PEM	NA	0.01					
	48.3	Polk	W-231	PFO	NA			0.06			
	48.6	Polk	W-232	PEM	NA	0.23					
	49.2	Polk	W-233	PEM	NA	0.01					
	49.3	Polk	W-234	PEM	NA	0.42					
	49.6	Polk	W-237	PSS	NA		0.20				
	49.7	Polk	W-238	PEM	NA	0.00					
	50.2	Polk	W-241	PEM	NA	0.00					
	50.7	Polk	W-242	PEM	NA	0.56					
	51.0	Polk	W-247	PEM	NA	0.32					
	51.6	Polk	W-249	PEM	NA	0.01					
	51.6	Polk	W-250	PEM	NA	0.01					
	52.7	Polk	W-251	PEM	NA	0.05					
	52.4	Polk	W-251A	PEM	NA	0.18					
	51.8	Polk	W-252	PEM	NA	0.18					
	52.0	Polk	W-253	PEM	NA	0.01					
	52.7	Polk	W-255	PSS	NA		0.03				
	52.8	Polk	W-256	PSS	NA		0.05				
	52.8	Polk	W-257	PEM	NA	0.22					
	53.0	Polk	W-258	PSS	NA		2.24				
	54.7	Osceola	W-264	PEM	NA	0.15					
	56.1	Osceola	W-273	PEM	NA	0.02					
	57.1	Osceola	W-279	PEM	NA	0.02					
	57.4	Osceola	W-282A	PEM	NA	0.28					
	57.9	Osceola	W-285A	PEM	NA	0.31					
	58.2	Osceola	W-285B	PEM	NA	0.22					
	59.2	Osceola	W-290A	PFO	NA			0.06			
	59.3	Osceola	W-291A	PEM	NA	0.93					
	61.1	Osceola	W-295A	PEM	NA	0.57					
	61.5	Osceola	W-301A	PEM	NA	0.19					
	63.2	Osceola	W-309	PEM	NA	0.99					

Table 2.4-1

Wetlands Affected by the FSC Project

Facility	Milepost a/	County	Wetland ID	Wetland Type b/	Crossing Length (Feet) c/	Wetland Impact (Acres)					
						Construction d/			Operation e/		
						PEM	PSS	PFO	PEM	PSS	PFO
	63.7	Osceola	W-312	PEM	NA	0.11					
	64.0	Osceola	W-312A	PEM	NA	0.33					
	63.3	Osceola	W-313	PEM	NA	0.31					
	64.3	Osceola	W-315	PEM	NA	0.30					
	64.7	Osceola	W-316A	PEM	NA	0.23					
	65.0	Osceola	W-317B	PEM	NA	0.17					
	65.6	Osceola	W-320	PSS	NA		0.32				
	66.0	Osceola	W-322	PEM	NA	0.26					
	66.1	Osceola	W-325	PEM	NA	0.01					
	66.1	Osceola	W-326	PEM	NA	0.01					
	66.2	Osceola	W-327	PEM	NA	0.01					
	66.2	Osceola	W-328	PEM	NA	0.01					
	66.4	Osceola	W-329	PEM	NA	0.00					
	66.4	Osceola	W-330	PEM	NA	0.00					
	66.4	Osceola	W-331	PEM	NA	0.01					
	66.4	Osceola	W-332	PEM	NA	0.01					
	66.4	Osceola	W-333	PEM	NA	0.01					
	66.6	Osceola	W-334	PEM	NA	0.41					
	66.5	Osceola	W-335	PSS	NA		0.12				
	66.7	Osceola	W-336	PEM	NA	0.06					
	67.1	Osceola	W-339	PEM	NA	0.26					
	67.3	Osceola	W-340	PEM	NA	0.23					
	67.4	Osceola	W-341	PEM	NA	0.01					
	67.6	Osceola	W-342	PEM	NA	0.36					
	67.6	Osceola	W-343	PEM	NA	0.01					
	67.8	Osceola	W-344	PEM	NA	0.02					
	67.9	Osceola	W-345	PEM	NA	0.00					
	68.4	Osceola	W-348	PEM	NA	0.40					
	68.5	Osceola	W-349	PEM	NA	0.26					
	68.7	Osceola	W-350	PEM	NA	0.05					
	69.0	Osceola	W-351	PEM	NA	0.02					
	70.0	Osceola	W-352	PEM	NA	1.03					

Table 2.4-1

Wetlands Affected by the FSC Project

Facility	Milepost a/	County	Wetland ID	Wetland Type b/	Crossing Length (Feet) c/	Wetland Impact (Acres)					
						Construction d/			Operation e/		
						PEM	PSS	PFO	PEM	PSS	PFO
	69.4	Osceola	W-353	PEM	NA	0.02					
	69.5	Osceola	W-354	PEM	NA	0.01					
	69.9	Osceola	W-355	PEM	NA	0.06					
	70.5	Osceola	W-357	PEM	NA	0.00					
	71.0	Osceola	W-358	PEM	NA	0.29					
	71.2	Osceola	W-359	PEM	NA	0.95					
	72.1	Osceola	W-361	PEM	NA	0.03					
	72.4	Osceola	W-362	PEM	NA	0.01					
	73.6	Osceola	W-365	PFO	NA			0.24			
	73.5	Osceola	W-366	PEM	NA	0.02					
	73.8	Osceola	W-367	PFO	NA			0.10			
	73.8	Osceola	W-368	PEM	NA	0.13					
	74.4	Osceola	W-371	PFO	NA			0.33			
	74.5	Osceola	W-372	PFO	NA	0.00					
	74.8	Osceola	W-373	PEM	NA	0.05					
	75.4	Osceola	W-375	PEM	NA	0.01					
	75.9	Osceola	W-380	PEM	NA	0.01					
	77.1	Osceola	W-388	PFO	NA			0.25			
	77.5	Osceola	W-391	PEM	NA	0.01					
	77.6	Osceola	W-392	PFO	NA			0.07			
	77.6	Osceola	W-394	PFO	NA			0.04			
	79.2	Okeechobee	W-404	PEM	NA	0.42					
	80.2	Okeechobee	W-407	PEM	NA	0.05					
	80.3	Okeechobee	W-410	PEM	NA	0.14					
	80.4	Okeechobee	W-411	PEM	NA	0.10					
	80.4	Okeechobee	W-412	PSS	NA		0.28				
	80.6	Okeechobee	W-414	PEM	NA	0.01					
	80.7	Okeechobee	W-415	PEM	NA	0.01					
	81.0	Okeechobee	W-417	PEM	NA	0.00					
	81.0	Okeechobee	W-418	PEM	NA	0.03					
	81.3	Okeechobee	W-419	PSS	NA		0.48				
	81.5	Okeechobee	W-420	PEM	NA	0.33					

Table 2.4-1 Wetlands Affected by the FSC Project											
Facility	Milepost a/	County	Wetland ID	Wetland Type b/	Crossing Length (Feet) c/	Wetland Impact (Acres)					
						Construction d/			Operation e/		
						PEM	PSS	PFO	PEM	PSS	PFO
	82.1	Okeechobee	W-423	PFO	NA			0.20			
	82.3	Okeechobee	W-424	PFO	NA			0.07			
	82.4	Okeechobee	W-425	PFO	NA			0.81			
	82.6	Okeechobee	W-426	PSS	NA		0.06				
	82.7	Okeechobee	W-427	PEM	NA	0.34					
	82.9	Okeechobee	W-429	PSS	NA		0.08				
	82.9	Okeechobee	W-430	PFO	NA			0.01			
	83.3	Okeechobee	W-432	PFO	NA			0.30			
	83.4	Okeechobee	W-433	PFO	NA			0.25			
	83.8	Okeechobee	W-436	PEM	NA	0.18					
	84.2	Okeechobee	W-438	PEM	NA	0.22					
	84.7	Okeechobee	W-442	PFO	NA			0.49			
	84.9	Okeechobee	W-444	PEM	NA	0.01					
	85.0	Okeechobee	W-446	PFO	NA			0.10			
	85.1	Okeechobee	W-447	PFO	NA			0.05			
	85.1	Okeechobee	W-448	PFO	NA			0.02			
	86.2	Okeechobee	W-454	PFO	NA			1.01			
	87.7	Okeechobee	W-455	PFO	NA			0.36			
	87.8	Okeechobee	W-456	PFO	NA			0.17			
	87.9	Okeechobee	W-457	PEM	NA	0.06					
	88.1	Okeechobee	W-459	PFO	NA			0.05			
	88.1	Okeechobee	W-460	PFO	NA			0.01			
	89.9	Okeechobee	W-464A	PEM	NA	0.61					
	89.8	Okeechobee	W-464B	PFO	NA			0.12			
	91.3	Okeechobee	W-465	PFO	NA			0.54			
	93.4	Okeechobee	W-473	PEM	NA	0.05					
	94.6	Okeechobee	W-480A	PFO	NA			1.18			
	94.8	Okeechobee	W-480B	PFO	NA			0.32			
	96.3	Okeechobee	W-482	PEM	NA	0.28					
	95.8	Okeechobee	W-484	PEM	NA	0.01					
	96.9	Okeechobee	W-489	PEM	NA	0.01					
	96.9	Okeechobee	W-490	PFO	NA			0.06			

Table 2.4-1

Wetlands Affected by the FSC Project

Facility	Milepost a/	County	Wetland ID	Wetland Type b/	Crossing Length (Feet) c/	Wetland Impact (Acres)					
						Construction d/			Operation e/		
						PEM	PSS	PFO	PEM	PSS	PFO
	97.9	Okeechobee	W-493	PEM	NA	0.01					
	99.3	Okeechobee	W-495	PEM	NA	0.13					
	99.3	Okeechobee	W-496A	PFO	NA			0.21			
	99.4	Okeechobee	W-496D	PFO	NA			0.04			
	99.4	Okeechobee	W-496E	PFO	NA			0.26			
	99.5	Okeechobee	W-496G	PFO	NA			0.09			
	99.7	Okeechobee	W-497	PEM	NA	0.01					
	100.5	Okeechobee	W-498	PEM	NA	0.01					
	100.6	Okeechobee	W-499	PEM	NA	0.71					
	100.8	Okeechobee	W-501	PEM	NA	0.16					
	100.9	Okeechobee	W-502	PEM	NA	0.02					
	101.2	Okeechobee	W-504	PEM	NA	0.07					
	101.7	Okeechobee	W-505	PEM	NA	0.17					
	102.4	Okeechobee	W-507	PFO	NA			0.13			
	102.6	Okeechobee	W-508A	PFO	NA			0.17			
	102.8	St. Lucie	W-508B	PFO	NA			0.22			
	102.8	St. Lucie	W-509	PEM	NA	0.39					
	103.2	St. Lucie	W-510	PSS	NA		0.60				
	103.1	St. Lucie	W-513	PEM	NA	0.56					
	103.3	St. Lucie	W-514	PFO	NA			0.27			
	103.6	St. Lucie	W-515	PSS	NA		0.60				
	103.4	St. Lucie	W-516	PFO	NA			0.12			
	103.5	St. Lucie	W-517	PFO	NA			0.02			
	103.7	St. Lucie	W-518	PEM	NA	0.24					
	103.8	St. Lucie	W-519	PFO	NA			0.08			
	103.7	St. Lucie	W-520A	PFO	NA			0.05			
	103.8	St. Lucie	W-520B	PFO	NA			0.04			
	104.0	St. Lucie	W-521	PFO	NA			0.06			
	104.0	St. Lucie	W-523	PFO	NA			0.14			
	104.1	St. Lucie	W-524	PFO	NA			0.18			
	104.2	St. Lucie	W-525	PFO	NA			0.12			
	104.5	St. Lucie	W-526	PEM	NA	1.13					

Table 2.4-1 Wetlands Affected by the FSC Project											
Facility	Milepost a/	County	Wetland ID	Wetland Type b/	Crossing Length (Feet) c/	Wetland Impact (Acres)					
						Construction d/			Operation e/		
						PEM	PSS	PFO	PEM	PSS	PFO
	105.2	St. Lucie	W-528	PSS	NA		0.34				
	105.3	St. Lucie	W-529	PEM	NA	0.51					
	105.8	St. Lucie	W-530	PFO	NA			0.01			
	106.0	St. Lucie	W-531	PFO	NA			0.43			
	106.3	St. Lucie	W-532A	PFO	NA			0.13			
	106.3	St. Lucie	W-532E	PFO	NA			0.20			
	106.5	St. Lucie	W-533	PEM	NA	0.01					
	106.8	St. Lucie	W-534	PEM	NA	0.53					
	108.2	St. Lucie	W-535A	PFO	NA			1.33			
	108.4	St. Lucie	W-536D	PEM	NA	0.02					
	108.5	St. Lucie	W-537A	PEM	NA	0.00					
	108.7	St. Lucie	W-540A	PFO	NA			0.01			
	109.2	St. Lucie	W-544A	PFO	NA			0.02			
	109.6	St. Lucie	W-546A	PFO	NA			0.08			
	109.7	St. Lucie	W-548A	PFO	NA			0.13			
	109.8	St. Lucie	W-548C	PEM	NA	0.00					
	109.8	St. Lucie	W-548D	PEM	NA	0.00					
	110.0	St. Lucie	W-549A	PEM	NA	0.01					
	110.1	St. Lucie	W-550	PSS	NA		0.02				
	110.3	St. Lucie	W-551	PFO	NA			0.11			
	110.4	St. Lucie	W-552	PEM	NA	0.01					
	110.7	St. Lucie	W-553	PFO	NA			0.11			
	110.8	St. Lucie	W-554	PEM	NA	0.01					
	111.1	St. Lucie	W-556	PEM	NA	0.01					
	111.4	St. Lucie	W-557	PFO	NA			0.41			
	111.7	St. Lucie	W-559	PEM	NA	0.93					
	112.1	St. Lucie	W-560	PSS	NA		0.04				
	112.1	St. Lucie	W-561	PEM	NA	0.25					
	113.7	St. Lucie	W-562	PEM	NA	0.12					
	112.8	St. Lucie	W-563	PFO	NA			0.26			
	112.9	St. Lucie	W-564	PFO	NA			0.02			
	113.2	St. Lucie	W-565	PFO	NA			0.03			

Table 2.4-1

Wetlands Affected by the FSC Project

Facility	Milepost a/	County	Wetland ID	Wetland Type b/	Crossing Length (Feet) c/	Wetland Impact (Acres)					
						Construction d/			Operation e/		
						PEM	PSS	PFO	PEM	PSS	PFO
	113.3	St. Lucie	W-566	PEM	NA	0.04					
	113.5	St. Lucie	W-567	PEM	NA	0.02					
	113.7	St. Lucie	W-568	PFO	NA			0.04			
	113.7	St. Lucie	W-571	PEM	NA	0.02					
	113.8	St. Lucie	W-572	PEM	NA	0.02					
	114.0	St. Lucie	W-573	PEM	NA	0.02					
	114.1	St. Lucie	W-574	PEM	NA	0.02					
	114.2	St. Lucie	W-575	PEM	NA	0.02					
	114.4	St. Lucie	W-576	PEM	NA	0.02					
	114.5	St. Lucie	W-577	PEM	NA	0.02					
	114.6	St. Lucie	W-578	PEM	NA	0.02					
	114.8	St. Lucie	W-579	PEM	NA	0.02					
	115.0	St. Lucie	W-580	PEM	NA	0.02					
	115.8	Martin	W-587	PEM	NA	0.03					
	116.7	Martin	W-589	PEM	NA	0.01					
	116.8	Martin	W-590	PEM	NA	0.01					
	116.9	Martin	W-591	PEM	NA	0.01					
	117.0	Martin	W-592	PEM	NA	0.01					
	117.2	Martin	W-593	PEM	NA	0.01					
	117.3	Martin	W-594	PEM	NA	0.02					
	117.4	Martin	W-595	PEM	NA	0.01					
	117.5	Martin	W-596	PEM	NA	0.01					
	117.7	Martin	W-597	PEM	NA	0.01					
	117.8	Martin	W-598	PEM	NA	0.01					
	117.9	Martin	W-599	PEM	NA	0.02					
	118.1	Martin	W-600	PEM	NA	0.01					
	118.2	Martin	W-601	PEM	NA	0.01					
	118.3	Martin	W-602	PEM	NA	0.02					
	118.5	Martin	W-603	PEM	NA	0.07					
	118.4	Martin	W-604	PEM	NA	0.07					
	118.6	Martin	W-605	PFO	NA			0.17			
	119.4	Martin	W-608	PEM	NA	0.01					

Table 2.4-1

Wetlands Affected by the FSC Project

Facility	Milepost a/	County	Wetland ID	Wetland Type b/	Crossing Length (Feet) c/	Wetland Impact (Acres)					
						Construction d/			Operation e/		
						PEM	PSS	PFO	PEM	PSS	PFO
_	119.5	Martin	W-609	PEM	NA	0.01					
	119.5	Martin	W-610	PEM	NA	0.01					
	119.6	Martin	W-611	PFO	NA			0.75			
	120.2	Martin	W-613	PEM	NA	0.10					
	120.5	Martin	W-615	PEM	NA	0.01					
	121.0	Martin	W-616	PEM	NA	1.22					
	121.5	Martin	W-617	PEM	NA	0.38					
	121.8	Martin	W-621a	PEM	NA	0.09					
	121.9	Martin	W-621b	PEM	NA	0.10					
	122.1	Martin	W-622	PEM	NA	0.24					
	122.6	Martin	W-624	PEM	NA	0.33					
	122.9	Martin	W-624A	PEM	NA	0.03					
	123.0	Martin	W-626	PEM	NA	0.09					
	123.0	Martin	W-627	PEM	NA	0.00					
	123.5	Martin	W-629	PFO	NA			0.68			
	123.6	Martin	W-630	PFO	NA			0.06			
	123.8	Martin	W-631	PEM	NA	0.75					
	123.6	Martin	W-632	PFO	NA	0.00					
	123.7	Martin	W-633	PFO	NA			0.04			
	123.8	Martin	W-634	PFO	NA			0.05			
	123.9	Martin	W-635	PFO	NA			0.28			
	123.9	Martin	W-636	PEM	NA	0.02					
	124.0	Martin	W-637	PEM	NA	0.10					
	124.3	Martin	W-638	PSS	NA		0.02				
	125.2	Martin	W-653	PFO	NA			0.02			
	125.7	Martin	W-654	PEM	NA	0.04					
	126.1	Martin	W-654	PEM	NA	0.01					
	126.2	Martin	W-656	PEM	NA	0.03					
	126.2	Martin	W-659	PEM	NA	0.02					
	126.9	Martin	W-661	PEM	NA	0.20					
	127.1	Martin	W-662	PFO	NA			0.01			
Temporary Easement Subtotal					**0.0**	**33.10**	**7.08**	**33.06**	**0.00**	**0.00**	**0.00**

Table 2.4-1

Wetlands Affected by the FSC Project

Facility	Milepost a/	County	Wetland ID	Wetland Type b/	Crossing Length (Feet) c/	Wetland Impact (Acres)					
						Construction d/			Operation e/		
						PEM	PSS	PFO	PEM	PSS	PFO
Access Roads											
AR 1336	6.3	Polk	W-058	PFO	NA			0.01			
AR 1437	9.0	Polk	W-069-A7	PFO	NA	0.00					
AR 1209	10.7	Polk	W-087-A4	PFO	NA	0.00					
AR 1461	12.6	Polk	W-105	PEM	NA	0.00					
AR 1344	19.5	Polk	W-121	PEM	NA	0.01					
AR 1344	19.6	Polk	W-121A	PEM	NA	0.14					
AR 1221	19.8	Polk	W-121A	PEM	NA	0.02					
AR 1362	36.3	Polk	W-155	PFO	NA	0.00					
AR 2297	38.6	Polk	W-181	PFO	NA	0.00					
AR 3465	41.2	Polk	W-202-A2	PEM	NA	0.01					
AR 3465	41.2	Polk	W-202-A3	PEM	NA	0.01					
AR 3465	41.3	Polk	W-202-A5	PEM	NA	0.01					
AR 1232	41.8	Polk	W-204	PSS	NA		0.01				
AR 1234	42.4	Polk	W-206	PSS	NA		0.01				
AR 1234	42.4	Polk	W-206-A1	PEM	NA	0.00					
AR 1234	42.5	Polk	W-206-A2	PEM	NA	0.01					
AR 1234	42.5	Polk	W-207	PEM	NA	0.00					
AR 1234	42.5	Polk	W-207-A1	PSS	NA	0.00					
AR 1234	42.5	Polk	W-207-A2	PEM	NA	0.06					
AR 1238	45.4	Polk	W-216-A17	PEM	NA	0.00					
AR 1239	46.5	Polk	W-216-A35	PEM	NA	0.00					
AR 1239	46.5	Polk	W-216-A38	PEM	NA	0.00					
AR 1241	47.5	Polk	W-216-A52	PEM	NA	0.03					
AR 1241	47.5	Polk	W-216-A54	PEM	NA	0.01					
AR 2301	52.8	Polk	W-256	PSS	NA		0.04				
AR 2301	52.8	Polk	W-256-A1	PSS	NA		0.02				
AR 1242A	52.8	Polk	W-258	PSS	NA	0.00					
AR 1443	55.4	Osceola	W-265	PEM	NA	0.00					
AR 2307	70.2	Osceola	W-352	PEM	NA	0.01					
AR 2308	72.1	Osceola	W-361	PEM	NA	0.01					
AR 1395	74.9	Osceola	W-374	PEM	NA	0.01					

Table 2.4-1 Wetlands Affected by the FSC Project											
Facility	**Milepost a/**	**County**	**Wetland ID**	**Wetland Type b/**	**Crossing Length (Feet) c/**	**Wetland Impact (Acres)**					
						Construction d/			**Operation e/**		
						PEM	**PSS**	**PFO**	**PEM**	**PSS**	**PFO**
AR 1396	76.0	Osceola	W-382	PEM	NA	0.00					
AR 1247	91.4	Okeechobee	W-466-A4	PEM	NA	0.00					
AR 1249	93.1	Okeechobee	W-471-A02	PSS	NA	0.00					
AR 1249	93.2	Okeechobee	W-471-A04	PSS	NA	0.00					
AR 1249	93.3	Okeechobee	W-471-A04	PSS	NA	0.00					
AR 1249	93.2	Okeechobee	W-471-A05	PSS	NA		0.03				
AR 1249	93.3	Okeechobee	W-471-A07	PEM	NA	0.73					
AR 1249	93.8	Okeechobee	W-471-A08	PFO	NA	0.00					
AR 1249	94.0	Okeechobee	W-471-A10	PFO	NA			0.01			
AR 1249	94.1	Okeechobee	W-471-A11	PEM	NA	0.39					
AR 1248	94.3	Okeechobee	W-480-A01	PFO	NA			0.02			
AR 1248	94.5	Okeechobee	W-480-A05	PEM	NA	0.00					
AR 1331	99.3	Okeechobee	W-494-A8	PEM	NA	0.12					
AR 1331	99.3	Okeechobee	W-495	PEM	NA	0.10					
AR 1262	99.2	Okeechobee	W-495-A03	PFO	NA			0.07			
AR 1262	99.5	Okeechobee	W-495-A04	PFO	NA			0.01			
AR 1267	99.7	Okeechobee	W-495-A06	PFO	NA	0.00					
AR 1322	102.8	St. Lucie	W-508-A5	PEM	NA	0.00					
AR 1322	102.9	St. Lucie	W-509	PEM	NA	0.21					
AR 1322	103.2	St. Lucie	W-510	PSS	NA		0.05				
AR 1322	103.0	St. Lucie	W-513	PEM	NA	0.30					
AR 1322	103.3	St. Lucie	W-513-A1	PSS	NA	0.00					
AR 1322	103.3	St. Lucie	W-513-A3	PFO	NA	0.00					
AR 1322	103.4	St. Lucie	W-513-A5	PSS	NA		0.01				
AR 1322	103.4	St. Lucie	W-515	PSS	NA		0.15				
AR 1322	103.6	St. Lucie	W-515-A03	PEM	NA	0.02					
AR 1327	103.5	St. Lucie	W-515-A05	PFO	NA			0.09			
AR 1327	103.5	Okeechobee	W-515-A06	PFO	NA			0.02			
AR 1327	103.4	Okeechobee	W-515-A07	PEM	NA	0.03					
AR 1272	104.6	St. Lucie	W-525-A19	PEM	NA	0.01					
AR 1272	104.7	St. Lucie	W-525-A21	PFO	NA	0.00					
AR 1272	104.7	St. Lucie	W-525-A22	PFO	NA	0.00					

Table 2.4-1 Wetlands Affected by the FSC Project											
Facility	Milepost a/	County	Wetland ID	Wetland Type b/	Crossing Length (Feet) c/	Wetland Impact (Acres)					
						Construction d/			Operation e/		
						PEM	PSS	PFO	PEM	PSS	PFO
AR 1272	104.7	St. Lucie	W-525-A23	PEM	NA	0.00					
AR 1424	108.2	St. Lucie	W-536A	PEM	NA	0.00					
AR 1274	112.8	St. Lucie	W-550-A23	PEM	NA	0.03					
AR 1274	113.0	St. Lucie	W-550-A24	PEM	NA	0.00					
AR 1277	111.5	St. Lucie	W-559	PEM	NA	0.03					
AR 1279	111.7	St. Lucie	W-559	PEM	NA	0.03					
AR 1289	114.6	St. Lucie	W-578	PEM	NA	0.00					
AR 1306	119.9	Martin	W-612-A01	PEM	NA	0.11					
AR 1307	121.1	Martin	W-617-A1	PEM	NA	0.00					
AR 1309	122.0	Martin	W-622-A06	PEM	NA	0.00					
AR 1309	122.0	Martin	W-622-A09	PEM	NA	0.01					
AR 1311	122.6	Martin	W-627-A01	PEM	NA	0.00					
AR 1315	124.0	Martin	W-627-A21	PEM	NA	0.00					
AR 2662	125.5	Martin	W-648	PEM	NA	0.00					
AR 8654	125.1	Martin	W-648	PEM	NA	0.00					
Access Roads Subtotal					**0.0**	**2.46**	**0.32**	**0.23**	**0.00**	**0.00**	**0.00**
Contractor Yards											
	72.4	Osceola	W-361-A01	PFO	NA			8.34			
	72.5	Osceola	W-361-A02	PEM	NA	1.68					
	72.5	Osceola	W-361-A03	PEM	NA	1.24					
	72.6	Osceola	W-361-A04	PEM	NA	1.83					
	72.6	Osceola	W-361-A05	PEM	NA	3.06					
	72.6	Osceola	W-361-A06	PFO	NA			0.94			
	72.6	Osceola	W-361-A07	PEM	NA	0.03					
	72.6	Osceola	W-361-A08	PEM	NA	3.10					
	72.6	Osceola	W-361-A09	PEM	NA	0.15					
	73.6	Osceola	W-366-A1	PEM	NA	0.02					
	77.8	Okeechobee	W-398	PEM	NA	0.10					
	77.9	Okeechobee	W-399	PEM	NA	0.18					
	77.9	Okeechobee	W-400	PEM	NA	0.21					
	125.5	Martin	W-654-A1	PEM	NA	0.33					
	127.1	Martin	W-662-A1	PEM	NA	0.91					

Table 2.4-1

Wetlands Affected by the FSC Project

Facility	Milepost a/	County	Wetland ID	Wetland Type b/	Crossing Length (Feet) c/	Wetland Impact (Acres)					
						Construction d/			Operation e/		
						PEM	PSS	PFO	PEM	PSS	PFO
	127.1	Martin	W-662-A2	PEM	NA	0.03					
	127.1	Martin	W-662-A3	PEM	NA	0.24					
	127.1	Martin	W-662-A4	PEM	NA	0.06					
	127.1	Martin	W-662-A5	PEM	NA	1.38					
	127.1	Martin	W-662-A6	PEM	NA	0.01					
	127.1	Martin	W-662-A7	PEM	NA	0.01					
Contractor Yards Subotal					**0.0**	**14.57**	**0.00**	**9.28**	**0.00**	**0.00**	**0.00**
Total					**128,460.0**	**133.66**	**24.08**	**50.40**	**0.00**	**0.00**	**59.76**

Source: ECT, 2014

a/ Approximate Milepost along the proposed pipeline rounded to the nearest tenth.
b/ NWI Classifications:
PEM - Palustrine emergent wetland
PSS - Palustrine scrub-shrub wetland
PFO – Palustrine forested wetland
c/ Crossing length of pipeline through those wetlands that are crossed by the pipeline. All wetlands to be crossed using open cut method. See Section 2.4.4 for additional information on wetland construction procedures.
d/ Construction impacts are considered temporary impacts to wetlands; these areas will be allowed to revert to existing conditions after work is complete. Acreage of 0.00 = impact less than 0.01 acres.
e/ Operation impacts are considered permanent impacts to wetlands; the only permanent impacts associated with the FSC Project are conversion of forested wetland to other wetland types (PEM, PSS) for maintenance of a permanent pipeline right-of-way. Forested wetland acreage presented in this column will be cleared during construction and not permitted to revert back to forested wetland after construction is complete.

NA: Not applicable

FLORIDA SOUTHEAST CONNECTION

APPENDIX 2A

HDD Contingency Plan for the FSC Project

1 Introduction

This plan provides procedures and steps to manage contingencies during the performance of horizontal directional drills (HDDs) for Florida Southeast Connection, LLC's (FSC) proposed Florida Southeast Connection pipeline project (herein the 'Project'). The Project proposes to utilize HDDs to install various portions of the natural gas transmission pipeline.

HDDs are commonly used in pipeline construction for crossing large waterbodies, transportation corridors, or other sensitive features. This technique allows for the pipeline to be placed using an underground drill without breaking the ground surface between the entry and exit locations.

This HDD Contingency Plan identifies procedures that will be implemented in the event an HDD is deemed not viable at any of the proposed locations and provides procedures for monitoring and containing an inadvertent release of drilling fluids or muds during the operation.

2 Alternative Construction to HDD

HDDs have been in use since the 1970s. The technology has become relatively common and is a proven method that is readily available for installing the pipeline that FSC proposes to use for the Project.

Problems with HDDs are generally associated with subsurface conditions where, in some cases, non-uniformity may exist in the underlying formations—notably those containing scattered rock, sands, or gravel—or cavities where the drilling fluid pressures on the drill head cannot be maintained. In these cases, the pilot hole or reaming hole may become unstable or collapse, causing a sudden increase or loss in bore hole pressure and associated loss of drilling fluid returns during the drilling operation.

If, for any reason, it becomes necessary to suspend HDD operations and/or abandon a partially completed drill hole, the drill will be withdrawn and the hole will be filled and plugged at the surface.

If it is determined necessary to abandon the original HDD location, the proposed alignment may be shifted and retried.

FSC may also adopt alternative construction methods to suit site-specific conditions including open-cut excavation, or conventional jack and bore. Such alternative methods would only be used after notifying applicable regulatory agencies and obtaining the necessary approvals as appropriate in accordance with the permit conditions. No alternative crossing methods will be implemented without proper agency notification and approval.

3 HDD Monitoring Procedures

During the HDD process, there is a potential risk of an inadvertent release of drilling muds or fluids to the surface. The HDD supervisory personnel will be on site at all times during HDD activities to continuously monitor all operations during drilling activities for any anomalous conditions.

The drilling mud likely to be used for the Project would generally consist of fresh water, with a high yield bentonite added to achieve the necessary properties, such as viscosity. Bentonite is composed of clay minerals, and it is not considered a hazardous material by the U.S. Environmental Protection Agency (USEPA) or Florida Department of Environmental Protection (FDEP). Therefore, in the event of a release into a wetland or waterbody, there would be a temporary impact due to an increase in turbidity from the bentonite and the efforts to contain and clean up the released drilling mud. Drilling parameters will be established to maximize circulation and minimize risk of inadvertent releases. Monitoring of HDD activities will be done in accordance with procedures to be provided by the Project's drilling contractor. Monitoring and sampling procedures will include:

- Visual inspection along the drill path, including monitoring the wetlands and waterbodies for evidence of a release;
- Continuous monitoring of drilling mud consistency, drilling mud pressures, and return flows;
- Periodic recording of drill status information regarding drill conditions, pressures, returns, and progress during the course of drilling activities; and
- A wetland scientist within a two-hour drive of any HDD crossings of wetlands or waterbody so that if a release occurred within a wetland or waterbody, the scientist can assess the impact to the wetland or waterbody and make recommendations to mitigate the impact.

Once the drilling activities are completed, the site will be inspected after equipment removal to identify any visual signs of release.

4 Drilling Fluids Control and Containment

4.1 Storage of Fluids and Lubricants

Storage of fluids and lubricants that could potentially harm the environment will be handled in accordance with applicable federal, state, and local regulations. A Spill Prevention, Control, and Countermeasures (SPCC) Plan will be developed.

4.2 Containment and Cleanup of Drilling Fluids

HDD procedures demand that highly accurate monitoring and control systems be used to track the progress and exact location of the drilling head at all times. Drilling fluid is used during the advancement of the drill string to penetrate the formation, aid in stabilizing the bore hole, and maintain cutting suspension. The specific weight of the drilling fluid is adjusted throughout the procedure to ensure hydrological stability of the drill hole, while effectively transporting the cuttings to the return pit. Only experienced personnel trained in the HDD process will be assigned the task of conducting and monitoring HDD drilling operations. If a release of drilling fluid should occur in the Project area, the following measures will be implemented.

4.2.1 Measures to Contain a Release of Drilling Fluid in a Wetland or Waterbody

- A sample of the drilling slurry will be collected and held for future analysis in the event that an analysis is requested by regulatory agencies.
- If an inadvertent release of drilling fluid occurs within a wetland, waterbody or sensitive area, appropriate regulatory agencies will be contacted in accordance with applicable regulations and requirements. Drilling fluid pressure will be reduced and operations will be suspended to assess the extent of the release and to implement necessary corrective actions.
- Inspection will be initiated to determine the potential movement of released drilling mud within the wetland or waterbody.
- The Project's drilling contractor will determine and implement modifications to the drilling technique or composition of drilling fluid (e.g., thickening of mud by increasing bentonite content) as appropriate to minimize or prevent further releases of drilling mud.
- The release will be evaluated to determine if containment structures, such as sediment barriers or erosion controls, are warranted and can effectively contain the release. When making this determination, the potential that placement of containment structures will cause additional adverse environmental impacts will also be considered.
- If accessible, the Project contractor will clean up and remove all drilling fluid from the site and dispose of it in accordance with the applicable regulations.
- Upon completion of the drilling operations, applicable regulatory agencies will be consulted to determine any final cleanup requirements for the inadvertent release.

4.2.2 Measures to Contain a Release of Drilling Fluid on Land

- If a land release is detected, corrective action will be taken to contain and recover the release.
- If public health and safety are threatened by an inadvertent release, drilling operations will be shut down until the threat is effectively addressed or eliminated.
- The Project's drilling contractor will determine and implement modifications to the drilling technique or composition of drilling fluid (e.g., thickening of mud by increasing bentonite content) as appropriate to minimize or prevent further releases of drilling mud.

5 Notification Procedures

Agency contact names and telephone numbers will be maintained by the FSC's Construction Manager. If a release occurs, the Project's contractor must immediately notify FSC's Construction Manager. Notifications will include any affected agencies with jurisdiction over the Project.

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