

Federal Energy
Regulatory
Commission

**Office of
Energy Projects**

January 2020

Gulfstream Natural Gas System, L.L.C.

Docket No. CP19-475-000

Phase VI Expansion Project

Environmental Assessment

Washington, DC 20426

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TECHNICAL ABBREVIATIONS AND ACRONYMS

ADCNR	Alabama Department of Conservation and Natural Resources
ADEM	Alabama Department of Environmental Management
ALNHP	Alabama Natural Heritage Program
APE	Area of Potential Effect
AQCR	Air Quality Control Region
BMPs	best management practices
CAA	Clean Air Act
CEQ	Council on Environmental Quality
Certificate	Certificate of Public Convenience and Necessity
CFR	Code of Federal Regulations
CH ₄	methane
CO	carbon monoxide
CO ₂	carbon dioxide
CO _{2e}	carbon dioxide equivalents
Commission	Federal Energy Regulatory Commission
CS 410	Compressor Station 410
CS 420	Compressor Station 420
dB	decibels
dBA	A-weighted decibels
Dth/d	dekatherms per day
EA	environmental assessment
ECD	temporary erosion control devices
EI	environmental inspector
EPA	United States Environmental Protection Agency
ESA	Endangered Species Act
FDEP	Florida Department of Environment Protection
FEMA	Federal Emergency Management Agency
FERC	Federal Energy Regulatory Commission
FNAI	Florida Natural Areas Inventory
FWCC	Florida Fish and Wildlife Conservation Commission
g	Gravity
GHG	greenhouse gases
GSA	Geological Survey of Alabama
HAPs	hazardous air pollutants
HCA	High Consequence Areas
hp	horsepower
IPac	Information, Planning, and Conservation System
L _{dn}	day-night equivalent sound level
L _{eq}	equivalent sound level
MAOP	maximum allowable operating pressure
MW	Megawatt
MBTA	Migratory Bird Treaty Act

MCA	moderate consequence areas
MOU	Memorandum of Understanding
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act of 1969 (as amended)
NGA	Natural Gas Act
NOI	<i>Notice of Intent to Prepare an Environmental Assessment for the Phase VI Expansion Project</i>
NO ₂	nitrogen dioxide
NO _x	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NPS	National Park Service
NRHP	National Register of Historic Places
NSA	noise sensitive area
NSR	New Source Review
OEP	Office of Energy Projects
Plan	<i>Upland Erosion Control, Revegetation, and Maintenance Plan</i>
PM ₁₀	particulate matter less than 10 microns in diameter
PM _{2.5}	particulate matter less than 2.5 microns in diameter
Procedures	<i>Wetland and Waterbody Construction and Mitigation Procedures</i>
Project	Phase VI Expansion Project
PSD	Prevention of Significant Deterioration
SHPO	State Historic Preservation Office
SO ₂	sulfur dioxide
tpy	tons per year
UIC	underground injection control
USACE	United States Army Corps. of Engineers
USDOT	United States Department of Transportation
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
VOC	volatile organic compound

SECTION A – PROPOSED ACTION

A.1 Introduction

The staff of the Federal Energy Regulatory Commission (FERC or Commission) has prepared an environmental assessment (EA) to assess the impacts of constructing and operating certain natural gas transmission pipeline and associated facilities proposed by Gulfstream Natural Gas System, LLC (Gulfstream). Gulfstream filed an application on June 3, 2019 in Docket No. CP19-475-000, pursuant to section 7(c) of the Natural Gas Act (NGA), and Part 157 of the Commission’s regulations for a Certificate of Public Convenience and Necessity (Certificate) to construct, install, operate, and maintain certain natural gas transmission facilities to be located in Mobile County, Alabama and Manatee County, Florida. Gulfstream also requests authorization pursuant to section 7(b) of the NGA to abandon in place a short segment of natural gas pipeline. The facilities, collectively referred to as the Phase VI Expansion Project (Project), would enable Gulfstream to provide 78,000 dekatherms per day (Dth/d) of natural gas on a firm basis to Tampa Electric Company’s (TECO) Big Bend Power Station in Hillsborough County, Florida as part of TECO’s Big Bend Modernization Project.¹

We² prepared this EA in compliance with the requirements of the National Environmental Policy Act (NEPA); the Council on Environmental Quality’s (CEQ) regulations for implementing the NEPA (Title 40 Code of Federal Regulations [CFR], Parts 1500-1508); and the Commission’s regulations at 18 CFR 380. Our principal purposes in preparing this EA are to identify and assess potential impacts on the natural and human environment that could result from implementation of the proposed action and identify and recommend reasonable alternatives and specific mitigation measures, as necessary, to avoid or minimize project-related environmental impacts.

The EA is an integral part of the Commission’s decision-making process in determining whether to authorize Gulfstream’s proposal.

A.2 Purpose and Need

Gulfstream states that the purpose of the Project is to allow it to transport an additional 78,000 Dth/d of natural gas under firm transportation service agreements to the Big Bend Power Station.

¹ Tampa Electric Company’s Big Bend Modernization Project would replace combined-cycle technology to Unit 1 from coal-fired, bringing that unit’s capacity from 445.5 Megawatt (MW) up to 1,090 MW. Unit 2, which is a coal and natural gas fired unit and also has a capacity of 445.5 MW, would be shut down in 2021.

² “We”, “us”, and “our” refer to the environmental staff of the Office of Energy Projects.

Section 7(b) of the NGA specifies that no natural gas company shall abandon any portion of its facilities subject to the Commission’s jurisdiction without the Commission first finding that the abandonment will not negatively affect the present or future public convenience and necessity. Under section 7(c) of the NGA, the Commission determines whether interstate natural gas transportation facilities are in the public convenience and necessity and, if so, grants a Certificate to construct and operate them. The Commission bases its decisions on financing, rates, market demand, gas supply, environmental impact, and other issues concerning a proposed project. Approval would be granted if, after consideration of both environmental and non-environmental issues, the Commission finds that the Project is in the public interest.

A.3 Proposed Facilities

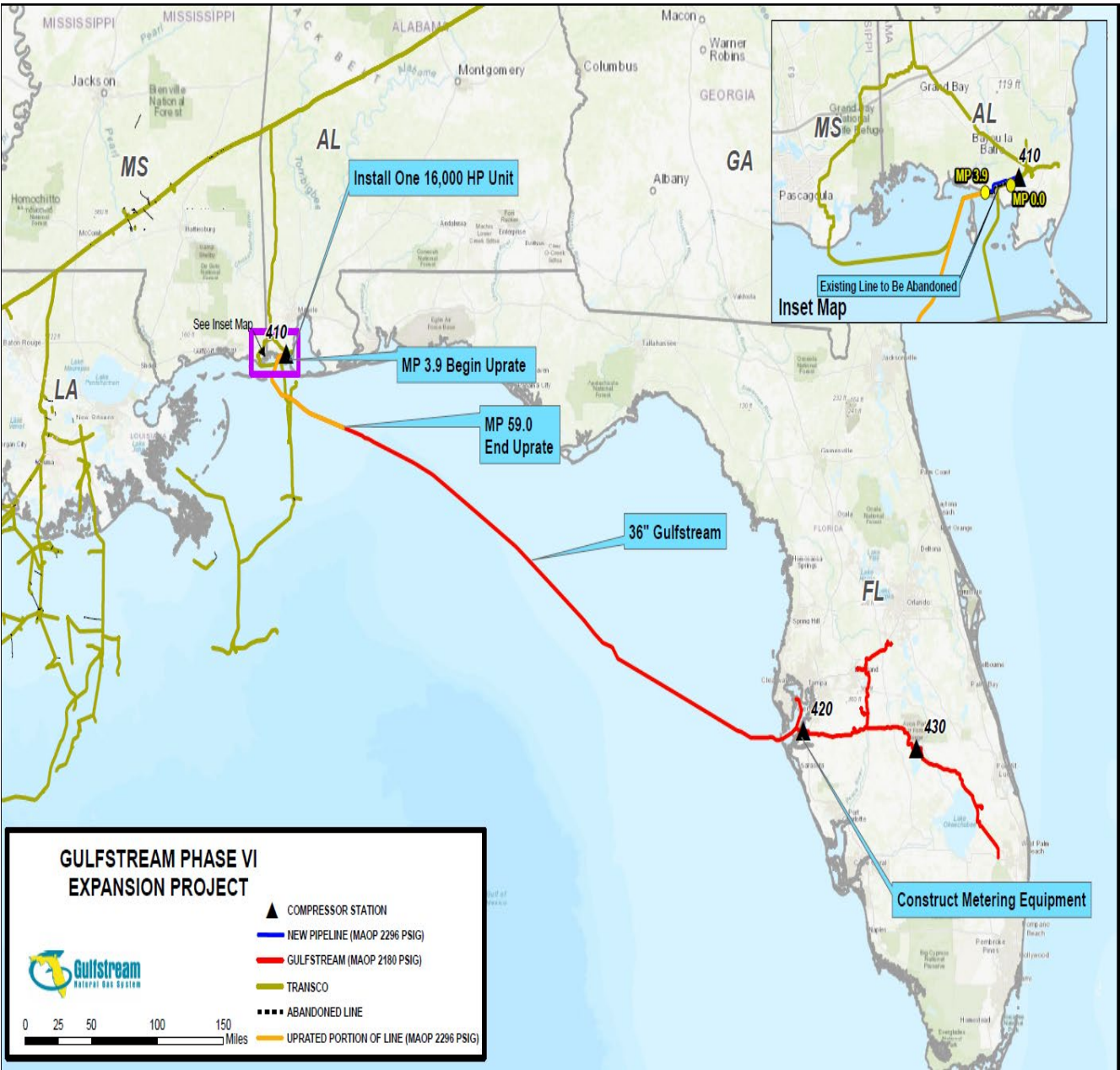
Gulfstream proposes to construct and operate a compressor unit and replace pipeline facilities in Mobile County, Alabama; and construct and operate metering equipment and related auxiliary facilities and appurtenances in Manatee County, Florida. Specifically, the Gulfstream Phase VI Expansion Project would include the following facilities:

- a new 16,000 horsepower (hp) compressor unit at Gulfstream’s existing Compressor Station 410 (CS 410) located in Mobile County, Alabama;
- abandonment in place of approximately 4 miles of existing 36-inch-diameter pipeline in Mobile County, Alabama;
- approximately 4 miles of new 36-inch-diameter pipeline originating at the existing Compressor Station 410 and co-locating with Gulfstream Pipeline Lines 60 and 200 in Mobile County, Alabama to replace the segment of pipeline to be abandoned;
- new metering equipment at Gulfstream’s existing Compressor Station 420 (CS 420) located in Manatee County, Florida; and
- related auxiliary facilities and appurtenances in Manatee County, Florida.

Gulfstream also plans to request a special permit from The U.S. Department of Transportation’s (USDOT) Pipeline and Hazardous Material Safety Administration (PHMSA) to increase the maximum allowable operating pressure (MAOP) for approximately 59 miles of its 36-inch-diameter pipeline from milepost (MP) 3.9 in Mobile County, Alabama, to MP 59.0 in U.S. Exclusive Economic Zone federal waters in the Gulf of Mexico. Gulfstream states that the increase in MAOP (from 2,180 psig to 2,296 psig) would require no offshore modifications to the existing pipeline.

On November 6, 2019 Gulfstream proposed a route variation of 1,504 feet of the pipeline to accommodate a landowner (referred to as “MOC-0017”) as well as a route variation of 1,125 feet from milepost (MP) 0.05 to MP 0.25 at Station 410 to minimize impacts on palustrine forested (PFO) wetlands (referred to as “MOC-0018”). These minor route changes are incorporated as the proposed action and are discussed in this EA. The route changes do not affect any new landowners. The Project location overview map can be seen in figure 1.

Figure 1. Phase VI Expansion Project – Location Overview Map



A.4 Public Review and Comment

FERC issued a *Notice of Intent to Prepare an Environmental Assessment for the Phase VI Expansion Project* (NOI) on July 25, 2019. The NOI was published in the Federal Register and was mailed to interested parties including affected landowners; federal, state, and local governmental representatives and agencies; elected officials; environmental and public interest groups; potentially interested Indian tribes; and local libraries and newspapers. Written comments were requested from the public on specific concerns about the Project or issues that should be considered during the preparation of the EA. The public comment period was from July 25, 2019 to August 26, 2019.

We received one comment on the Project prior to issuing the NOI and once comment in response to the NOI. Prior to the issuance of the NOI, on June 24, 2019, we received comments from Mr. Joel Schambeau concerning the validity of a wetland permit reportedly issued in 2005 for the filling of wetlands in the Project area. We reviewed Mr. Schambeau's filing but were unable to ascertain its applicability to the Project; and therefore, it is not addressed further in this analysis. We also received a comment letter from the Choctaw Nation of Oklahoma requesting a copy of the EA once complete.

A.5 Construction Procedures

All facilities associated with the Project would be designed, constructed, tested, operated and maintained in accordance with USDOT regulations in 49 CFR 192, *Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards*, and other applicable federal and state regulations. Gulfstream would implement the following guidelines for the Project:

- FERC's *Upland Erosion Control, Revegetation, and Maintenance Plan* (Plan) and *Wetland and Waterbody Construction and Mitigation Procedures* (Procedures), with certain modifications as identified below and section B.3;³
- Spill Prevention, Control, and Countermeasures Plan (SPCC Plan);
- Plan for the Unanticipated Discovery of Contaminated Soils or Groundwater;
- Fugitive Dust Control Plan;
- Project-specific Erosion and Sediment Control Plan; and
- Project-specific Construction Best Management Practice Plan.

Gulfstream requested a minor editorial modification to the FERC Plan which we find acceptable. In addition, Gulfstream requested several modifications to the FERC

³ The FERC Plan and Procedures are a set of construction and mitigation measures that were developed to minimize the potential environmental impact of natural gas facility construction in general. The FERC Plan can be viewed on the FERC Internet website at <http://www.ferc.gov/industries/gas/enviro/plan.pdf>. The FERC Procedures can be viewed on the FERC Internet website at <http://www.ferc.gov/industries/gas/enviro/procedures/pdf>

Procedures regarding right-of-way width and setback distances for extra workspace near wetlands and waterbodies, which we also reviewed and find acceptable. These modifications are discussed further in section B.3 of this EA. For this EA, we refer to the Plan and Procedures with incorporation of Gulfstream's requested modifications as "Gulfstream's Plan" and "Gulfstream's Procedures."

A.5.1 General Construction Procedures for Pipeline Facilities

Conventional open-cut pipeline construction techniques would be used for construction of the pipeline. Prior to initiating construction-related activities, Gulfstream would secure a right-of-way easement, or other authorizations, from landowners whose properties would be crossed by the proposed pipeline. Owners and lessees of land crossed by pipelines would be notified in advance of construction activities that could affect their property or operations.

The entire 4.0 mile pipeline installation would be either within the existing CS 410 facility or co-located with the existing Gulfstream Line 60 and Line 200 rights-of-way. The pipeline would be installed at a 25-foot offset from the existing Gulfstream Line 60 for most of the route. Areas along the route where the pipeline is co-located and where soils have been previously impacted would limit the amount of new soil disturbance. Typically, between 25 and 75 feet of the existing rights-of-way for Lines 60 and 200 would be utilized for construction workspace. The permanent right-of-way for the pipeline would include 25-feet of the existing Gulfstream Line 60 and 25-feet of new permanent right-of-way. Gulfstream proposes to use a 100-foot-wide temporary construction right-of-way for the pipeline installation.

Previously identified sensitive resources, such as wetland boundaries, would also be marked to minimize or avoid adverse impacts during pipeline construction. Where necessary, to contain disturbed soils during clearing and grading in upland areas, and to minimize potential erosion and sedimentation into wetlands and waterbodies, temporary erosion control devices (ECD) would be installed prior to initial ground disturbance and would be maintained throughout construction.

In wetland areas, topsoil would be stockpiled separately, per Gulfstream's Procedures. Temporary and permanent ECDs would be installed and maintained to contain disturbed soils during trenching and to minimize potential erosion and sedimentation of wetlands and waterbodies.

Wetland and Waterbody Crossings

Wetland crossings for the pipeline would be accomplished via the conventional lay method in accordance with all applicable permits and Gulfstream's Procedures. Construction techniques are similar to the open-cut method in upland areas; however, topsoil segregation techniques would be utilized to facilitate revegetation following the

completion of construction activities. In some cases, site-specific conditions may not support construction equipment, but the area would still be crossed using the conventional lay method. In these instances, construction mats, rail flat cars, flexi-float or other temporary bridges (Bailey bridges), or flume installations would be used to minimize disturbances to wetland hydrology and maintain soil structure.

Hydrostatic Testing

Following backfilling of the trench, the pipeline would be cleaned and hydrostatically tested to ensure that the system is free from leaks and can operate at the design pressure. Upon completion of the testing, the water would be discharged into an upland well vegetated area, through an energy-dissipating device and containment structures such as hay bale structures and filter bags.

Clean-up and Restoration

Following pipe installation and backfilling, disturbed areas would be restored and graded to pre-construction contours as closely as practicable in accordance with Gulfstream's Plan and Procedures. Construction debris would be disposed of at appropriate facilities. Permanent erosion and sediment control measures would be installed as appropriate, and revegetation measures outlined in the Gulfstream's Plan and specific landowner requests would be implemented.

Pipeline Pressure Increase

The Project would also increase the MAOP of a total of 59 miles of existing 36-inch diameter onshore and offshore pipeline on the discharge side of Gulfstream's existing CS 410, including the 4 miles to be replaced to accommodate the pressure increase. This is further addressed in Section B.8 - Reliability and Safety.

A.5.2 General Construction Techniques for Aboveground Facilities

Landowner notification, surveying, and staking of the Project areas associated with the proposed aboveground facilities would be conducted using the same general procedures described above for the pipeline facilities. Installation of one 16,000 hp turbine driven compressor unit at its existing CS 410 and construction of metering equipment at CS 420 would begin with grading, leveling, and compacting the soils for the placement of permanent fill material. Silt fence or other ECDs would be installed where necessary to minimize soil erosion and turbidity in stormwater runoff from disturbed areas. Sediment and erosion controls would be implemented in accordance with Gulfstream's Plan and Procedures. Any soil excavated for the placement of the permanent fill material would be compacted in place, and excess soil would be used elsewhere on site or disposed of at an approved offsite location.

Following the completion of construction activities, ECDs would be removed from temporary workspaces and areas overlying new permanent fill material. Permanent fill would be left in place to accommodate operation and maintenance activities at the aboveground facilities.

A.5.3 Environmental Compliance, Inspection, and Monitoring

To ensure that erosion and sediment controls are properly implemented, at least one Environmental Inspector (EI) would be required for each construction spread during construction and restoration. The EI's duties would comply with those contained in paragraph III.B (Responsibilities of the EI) of Gulfstream's Plan to ensure that the Project's construction and restoration is in compliance with all environmental conditions contained within the FERC Order and all other authorizations and permits. A Chief Construction Inspector and Construction Manager would also be employed by Gulfstream for quality assurance and to ensure the Gulfstream Project complies with mitigation measures. FERC staff would also monitor compliance with conditions of the Commission's Certificate.

Operation and Maintenance

The Project's newly constructed facilities would be operated and maintained in accordance with the requirements of the Commission and the PHMSA regulations set forth in 49 CFR Part 192, pursuant to the provisions of the Natural Gas Pipeline Safety Act of 1968, as amended.

Vegetation on the permanent easement associated with the proposed pipeline would be maintained by periodic mowing, as necessary, in accordance with Gulfstream's Plan and Procedures to allow for visual inspections.

A.6 Land Requirements

The Project's land requirements, including both temporary and permanent impacts, would be approximately 144 acres, of which, approximately 15 acres would be permanently affected by the operation of the Project facilities. Temporary land includes those areas that would be temporarily disturbed by construction activities and restored to pre-construction conditions such as temporary construction right-of-way, temporary access roads, additional temporary workspace, and contractor yards. The one temporary access road is proposed at MP 2.28 and would not be widened as part of the Project. Operational land includes lands with new permanent impacts that would be maintained for the life of the facilities.

The permanent right-of-way for the pipeline would include 25 feet of the existing right-of-way for Gulfstream Line 60 and 25 feet of new permanent right-of-way. Gulfstream proposes to use a 100-foot-wide temporary construction right-of-way for the pipeline installation. Gulfstream would retain the right-of-way for the abandoned pipeline.

A summary of the land requirements for the Project is presented in table 1.

Table 1 Summary – Land Requirements		
Facility	Land Affected Temporarily During Construction (acres)^a	Land Affected Permanently During Operation (acres)^b
Pipeline Segment	32.46	13.44
Compressor Station 410	37.83	1.35
Compressor Station 420	10.95	0.19
Access Road - Unnamed Road (from AL-188) at MP 2.28 ^b	0.46	--
Contractor Yard 1 – Mobile County Alabama	21.57	--
Contractor Yard 2 – Mobile County, Alabama	8.93	--
Contractor Yard 3 – Mobile County Alabama	4.36	--
Additional Temporary Workspace	12.65	--
Project Total^c	129.2	15.0
^a Temporary disturbed acreages only includes the portion of disturbed areas that extend beyond the permanent right-of-way ^b Access road width present is conservative estimate for purpose of calculating impacts. No road widening is planned as a part of the Project. ^c Project totals may not add up due to rounding.		

A.7 Construction Schedule

Gulfstream anticipates mobilization, clearing, and construction of the Project facilities to begin on November 1, 2021 and continue until the Project in-service date on December 1, 2022. Work would typically be performed as 12-hour work days, 6 days per week. Gulfstream currently anticipates that 24-hour construction activities may be necessary at the MP 0.0 and MP 3.9 tie-in sites where the new pipeline segment would be connected to the existing pipeline as well as hydrotesting.

A.8 Permits and Approvals

Table 2 lists federal and state environmental permits and approvals associated with the Project.

Table 2 Permits and Approvals		
Agency	Permit/Consultation	Status
Federal		
Federal Energy Regulatory Commission	Certificate of Public Convenience and Necessity	Pending.
PHMSA Special Permit	Waive certain code section requirements from MP4 to MP 59	Pending. Public comment period for Special Permit application was on July 29 to August 28, 2019. Anticipate approval October 28, 2020.
Bureau of Safety and Environmental Enforcement	Right-of-way pipeline modification permit	A conditional approval was received on January 29, 2019.
U.S. Army Corps of Engineers	Section 404 Clean Water Act – Nationwide Permit 12.	Pending, anticipated approval date is January 2020.
U.S. Fish and Wildlife Service	Migratory Bird Treaty Act Consultation (MBTA) Section 7 Endangered Species Act Consultation Consultation under the Bald and Golden Eagle Protection Act (BGEPA)	Pending
State		
Alabama Department of Conservation and Natural Resource	Review and consultation regarding state listed endangered and threatened habitat	Results of supplemental surveys submitted on September 30, 2019. No additional consultation necessary.
Alabama Department of Environmental Management	Section 401 Clean Water Act Water Quality Certification (granted for valid uses of Nationwide Permit 12, as conditioned)	Anticipated approval is January 2020.
Alabama Department of Environmental Management	Coastal Consistency Certification (granted for valid uses of Nationwide Permit 12, as conditioned)	Anticipated approval is January 2020.
Alabama Department of Environmental Management	Minor new-source review air permit.	Anticipated application date is April 2020.
Alabama Department of Environmental Management	National Pollutant Discharge Elimination System General Permit for Stormwater Discharges from Construction Activities (ALG670000)	Anticipated permit date is September 2021.
Alabama Department of Economic and Community Affairs	Water withdrawal authorization. Surface water withdrawal for hydrostatic testing.	Anticipated authorization date is September 2021.

Table 2 Permits and Approvals		
Agency	Permit/Consultation	Status
Alabama Historic Commission	Section 106 of the National Historic Preservation Act-Agency review. Consultation, and comment on cultural resources studies and mitigation plans	Concurrence from the Alabama SHPO was received on October 16, 2019.
Florida Department of Environmental Protection	National Pollutant Discharge Elimination System Permit	Anticipated permit date is September 2021.
	Coastal Zone Consistency	Joint application with USACE and FDEP submitted on September 30, 2019. Anticipated date January 2020.
Florida Fish and Wildlife Conservation Commission	Review and consultation regarding state listed endangered and threatened species.	Project review request submitted May 24, 2019. No response received.
Southwest Florida Water Management District	Consumptive use permit	Anticipated permit date is September 2021.
Florida Division of Historic Resources	Section 106 of the National Historic Preservation Act-Agency review, consultation, and comment on cultural resource studies and mitigation plans	Concurrence from the Florida SHPO was received on June 19, 2019.

A.9 Non-Jurisdictional Facilities

Under Section 7 of the Natural Gas Act, the Commission is required to consider, as part of its decision to approve facilities under Commission jurisdiction, all factors bearing on the public convenience and necessity. Occasionally, proposed projects have associated facilities that do not come under the jurisdiction of the Commission. These “non-jurisdictional” facilities may be integral to the need for the proposed facilities, or they may be merely associated as minor components of the jurisdictional facilities that would be constructed and operated as a result of authorization of the proposed facilities.

The Phase IV Expansion Project is under FERC’s jurisdiction and is proposed as a result of TECO’s non-jurisdictional Big Bend Modernization Project. The Big Bend Power Station is an existing electrical generating facility which contains four coal and natural gas-fired steam electric generating units, a combustion turbine generator peaking unit, and associated facilities. The Big Bend Modernization Project would retire Unit 2, and repower Unit 1 as a natural gas-fired two-on-one combined-cycle generating facility, bringing that unit’s capacity from 445.5 Megawatt (MW) up to 1,090 MW. Unit 2 also has a capacity of 445.5 MW, and would be shut down in 2021.

The Siting Board of Florida has jurisdiction over Big Bend Modernization Project. The site certification process included state, regional, and local requirements. Federal

permits issued by the state under federally approved or delegated permit programs are processed separately from the power plant site certification application and include the Air Permit, the National Pollutant Discharge Elimination System (NPDES) Permit, and the United States Army Corps of Engineers (USACE) Section 404 application. The Big Bend Power Project would also include a pipeline lateral, subject to review by the Florida Public Service Commission, that would run east from the plant to a metering station tie-in along the north side of an existing access road, and continue east to an existing gas supply pipeline interconnection.

According to the Florida Siting Board's Order on Certification,⁴ the Big Bend Power Station is located on approximately 1,722 acres owned by TECO in unincorporated southwest Hillsborough County, approximately 10 miles south of Tampa, Florida. Construction and operation of the Big Bend Power Station would impact approximately 55 acres of this site.

The existing Big Bend Power Station and associated facilities were primarily located on artificial fill dredged from Tampa Bay, and the site has been utilized for industrial purposes for the past 50 years. Therefore, most of the land was previously disturbed and is not prime habitat for wildlife species. The site includes both uplands and wetlands; however, the wetlands are low-quality and contain a mixture of nuisance exotic and native species.

Construction of the Big Bend Modernization Project would not result in permanent impacts to wetlands. An approximately 0.18-acre of wetland is proposed to be cleared for workspace during the construction of the gas pipeline interconnection but would be allowed to revegetate naturally once construction is complete. Secondary impacts to wetland communities would be minimized by maintaining an average 25-foot and minimum 15-foot buffer surrounding wetlands where no construction activities would occur.

Impacts to surface water would include less than 0.1 acre of permanent impact for the construction of a new pipe bridge across the existing intake canal and the filling of a man-made roadside ditch for construction of a new culverted driveway. Impacts from in-water work during construction of the pipe bridge would be mitigated with the use of turbidity barriers.

The Unit 1 once-through-cooling water (OTCW) circulating water pumps would be replaced in kind. The cooling water intake structure would be upgraded to include modified traveling water screens and a fish-return system. The existing station is currently authorized to withdraw a combined 1,440 million gallons of water per day from Hillsborough Bay. Primarily as a result of the retirement of Unit 2 in 2021 eliminating

⁴ http://publicfiles.dep.state.fl.us/siting/Outgoing/Web/Big_Bend/Final_Orders/2019_7_29_TECO_FO_18-0198_Modernization_Certification.pdf

Unit 2's cooling water requirements, the Modernization Project would reduce cooling water withdrawals by 25 percent to a maximum of 1,080 million gallons of water per day. This would reduce impingement and entrainment of fish, given reduced intake flows and velocity. There would also be reduced fish mortality because of new, modified traveling screens and fish return system that would be installed at the cooling water intake structure. The fish return system would allow aquatic organisms washed from the modified traveling screens to be discharged back into Hillsborough Bay at a location that would minimize the potential for re-impingement.

The existing OTCW discharge provides a primary thermal refuge for the local population of West Indian manatees, and seagrass along the southern boundary of the discharge canal provides food for the manatees that winter in the canal. The area outside the discharge canal and the canal itself are designated as manage protection areas under both state and federal laws. The Site's NPDES permit includes a manatee protection plan that contains requirements for timely communication with manatee recovery program personnel and for production of adequate warm water during the winter months.

The Florida Siting Board concluded that the Big Bend Modernization Project would result in a decrease in air emissions. All units at the Big Bend Power Station have been capable of burning natural gas or coal since 2015, and Units 1, 2, and 3 have used only natural gas since mid-2017. Units 1 and 2 operating on natural gas only each have a carbon dioxide emission rate of 1,250 pounds per Megawatt-hour (MWh); the carbon dioxide emission rate of the Big Bend Modernization Project would reduce the emission rate to 737 pounds per MWh of energy produced. The projected TECO systemwide reduction in greenhouse gas emissions and all criteria pollutants following construction of the Big Bend Modernization Project compared to pre-project conditions (operating Units 1 and 2 on natural gas) resulted in projected reductions in greenhouse gas emissions of 18,500,000 tons and projected reductions of all criteria pollutants of 21,000,000 pounds over the period of 2017 through 2046.

Based on the results of cultural resource assessments conducted in 1979, no significant archaeological or historical sites were found or are expected to be found. A survey conducted in January 2018 did not identify any previously recorded archaeological sites.

Based on current Federal Emergency Management Agency (FEMA) flood maps, the Big Bend Modernization Project is within the 100-year floodplain. The Big Bend Modernization Project would include onsite stormwater management, which would incorporate sediment basins, silt fences, and a floodwall surrounding repowered Unit 1.

Average noise levels during the loudest construction activities are projected to be between 62 and 66 A-weighted decibels (dBA) at the northern property boundary, and noise levels from construction activities will be lower at all other property boundaries. Under the rules of the Hillsborough County Environmental Protection Commission,

construction activities occurring during the hours of 7:00 a.m. and 6:00 p.m. are exempt from the noise rule if reasonable steps are taken to abate the noise. The construction activities; however, are expected to be below the 70 dBA level applicable to industrial land use category. The Florida Siting Board concluded that noise resulting from the operation of the Big Bend Modernization Project would not have any adverse impact on the existing noise levels in the general vicinity of the Big Bend Power Station.

The Florida Siting Board approved the Big Bend Modernization Project in July 2019. Construction activities for the Modernization Project began in August 2019, with commercial operation of the facility in simple-cycle mode planned for June 2021. Commercial operation of the combined-cycle plant would begin in January 2023. Unit 2 would continue to operate firing natural gas from the date of the certification until 2021 when it would be retired.

The Big Bend Modernization Project is subject to state and local permitting requirements; however, the impacts associated with construction and operation that would overlap the proposed Project are addressed in section B.9 of this EA (cumulative impacts).

Gulfstream did not identify any other non-jurisdictional facilities associated with the Project.

SECTION B – ENVIRONMENTAL ANALYSIS

The environmental consequences of constructing and operating the Project would vary in duration and significance. Four levels of impact duration were considered: temporary, short-term, long-term, and permanent. Temporary impacts generally occur during construction with the resource returning to preconstruction condition almost immediately afterward. Short-term impacts could continue between two to five years following construction. Impacts were considered long-term if the resource would require more than 5 years to recover. A permanent impact could occur as a result of any activity that modifies a resource to the extent that it would not return to preconstruction conditions during the life of the Project.

In the following sections, we address direct and indirect effects collectively, by resource. The analysis contained in this EA is based upon Gulfstream's application and supplemental filings. However, if the Project is approved and proceeds to the construction phase, it is not uncommon for a project proponent to require minor modifications (e.g., minor realignments, changes in workspace configurations, etc.).

B.1 Geology

The Project is located within the Atlantic Plain Division, of the Coastal Plain physiographic province, and East Gulf Coastal Plain Section of the United States Geological Survey (USGS) 1946. The Coastal Plain province is the largest physiographic province in Alabama and extends from the Alabama Gulf Coast to the Alabama fall line, which separates the Coastal Plain province from the Appalachian Highlands Region in north and central Alabama.

The surficial geology in the Project area for the planned pipelines and at existing CS 410, consists of Holocene Epoch alluvial, coastal and low terrace deposits in the East Gulf Coastal Plain Section of the Coastal Plain province. The alluvial, coastal and low terrace deposits consist of shell fragments and fine to medium quartz sand near gulf beaches and mud, peat, clay silt and fine to medium quartz sand near bays, lakes, streams and estuaries and extend to a depth of approximately 200 feet below ground surface in coastal Mobile County (USGS 2005 and Geological Survey of Alabama (GSA) 2000). The Pliocene-age Citronelle Formation underlies these Holocene sediments and consists of unconsolidated to poorly consolidated, very fine to very coarse, poorly sorted, clean to clayey sands. The Citronelle Formation is highly permeable and forms the Sand and Gravel Aquifer of the surficial aquifer system.

Topography within the East Coast Plain in Mobile County is gently undulating to flat. Land surface elevations range from approximately 5 to 15 feet above mean sea level.

Project activities at CS 420 would be limited to previously disturbed areas at the existing facility. No geologic resources are anticipated to be affected at this facility and is not addressed further in this section.

B.1.1 Mineral Resources

Mineral resources in the state of Alabama include both non-fuel resources and fuel resources. The non-fuel resources in Alabama consist of clays, gemstones, lime, sand and gravel, crushed stone, bauxite, cement, bentonite, kaoline, iron oxide pigments, salt, and dimension stone (USGS 2014a). Alabama's fuel resources consist of oil, natural gas, and coal.

There are no non-fuel mineral resource sites within 0.25 miles of the Project, the nearest identified site is an unnamed sand and gravel quarry located 4.0 miles north of the Project (USGS 2018). The State of Alabama Oil and Gas Board indicates that oil and natural gas production does occur in Mobile County. The Bayou Jonas gas field is the nearest mapped field and is located 1.3 miles east of the Project. There are no oil and gas wells within 0.25 miles of the Project (GSA 2018).

B.1.2 Paleontological Resources

No sensitive paleontological resource areas are known in the vicinity of the pipeline and CS 410 and CS 420 (FMNH 2019). Much of the soils in the Project area have been previously disturbed as a result of agricultural and silviculture practices, or residential and commercial/industrial development. Gulfstream states that any significant fossil finds (such as complete skeletons) encountered during construction would be reported to Geological Survey of Alabama to solicit suggestions for procedures to follow for proper recovery and preservation. There are no state restrictions regarding disturbing or collecting fossils in Alabama aside from those pertaining to property access. Project activities at CS 420 would be limited to previously disturbed areas at the existing facility and impacts associated with sensitive paleontological resources are not anticipated.

B.1.3 Geologic Hazards

Geologic hazards are naturally occurring physical conditions that may result in damage to land and property or injury to people. Within the Project area, these could potentially include seismic activity, soil liquefaction, landslides, flash flooding, and ground subsidence.

Seismicity, Surficial Faults, and Soil Liquefaction

The USGS Earthquake Hazards Program's *2014 Long-term Model* for the Conterminous U.S. shows earthquake ground motions for various probability levels across the United States. The USGS rates ground motions using peak ground acceleration, which is the maximum acceleration experienced during the course of an earthquake and is measured in units of acceleration due to gravity (g). The seismic map indicates that the Project area for the pipeline and CS 410 is in an area with a low seismic hazard class rating of 0.04g peak acceleration with a 2 percent probability of exceedance in 50 years; and 0.01g peak acceleration with a 10 percent probability of exceedance in 50 years (USGS 2019a through 2019e).

Project activities at CS 420 will be limited to previously disturbed areas at the existing facility. According to the USGS *2014 Long-term Model*, the Project has a 2 percent probability of exceeding a peak horizontal acceleration of 0.02g in 50 years and a 10 percent probability of exceeding a peak horizontal acceleration of 0.01g in 50 years. An earthquake generating 0.10g would produce strong perceived shaking and could result in slight physical damage.

Per staff's request, Gulfstream provided an analysis of the occurrence for Class II and III U.S. EPA regulated underground injection control (UIC) wells in proximity to the Project area and the potential for induced seismicity due to deep-injection fluid disposal. Gulfstream inquired about Class III wells permitted in Alabama and was informed that there is one facility in Alabama located in the Town of McIntosh, Washington County, which uses Class III wells. The Class III well facility is located greater than 50 miles from the pipeline alignment and CS 410.

The State Oil and Gas Board of Alabama maintains a database of permitted oil and gas wells. Gulfstream obtained a listing of the Class II UIC wells in Mobile, Jackson, and Baldwin counties in order to determine the location of oil and gas related injection wells. The only wells located within a 10-mile radius of the pipeline alignment and CS 410 were located in Mobile County. A 10-mile radius was selected as the US Geologic Survey identified that seismicity can be induced at distances of 10 miles from the injection point.⁵ Five wells were identified within the 10-mile radius and no wells were located within a 1-mile radius.

A map of areas affected by induced earthquakes from fluid injection was prepared by the US Geological Survey (Peterson 2017). This mapping shows that the Project is located in an area of injection wells not associated with earthquakes. The nearest area of wells associated with earthquakes is located in the Brewton Alabama

⁵ <https://earthquake.usgs.gov/research/induced/>

more than 70 miles northeast of the pipeline alignment and CS 410. Based on the seismicity data presented above for the Project, and the limited number of nearby injection wells, the impacts of induced seismic effects from injection is considered low.

The highest magnitude earthquake near the pipeline and CS 410 was a 4.8 magnitude earthquake in 1997 and was located 69 miles northeast near the town of Atmore, Alabama (USGS 2019d). However, the closest earthquake to the pipeline and CS 410 was located 19 miles offshore and was a magnitude 2.6. CS 420 is located in Manatee County, Florida with the nearest earthquake occurring 226 miles southwest of the existing station in the Gulf of Mexico with a magnitude of 3.6 (USGS 2019d).

The section of the Project located in Mobile County (pipeline and CS 410) is located in the gulf-margin normal Class B fault zone. A class B fault zone is based on geologic evidence that suggests Quaternary deformation or the existence of a fault. However, Class B faults either don't extend deep enough as a potential source of significant earthquakes or the current geologic evidence is strong enough to not assign the feature to Class C fault zone, but the evidence is too weak to assign it as a Class A (USGS 2019b). Although the Project is located in a Class B fault zone, no faults were identified within 0.25 miles of the Project.

Aboveground facility CS 420 is located in Manatee County and no faults were identified within 0.25 miles of the aboveground facility (USGS 2019b).

Soil liquefaction is a phenomenon associated with seismic activity in which saturated, non-cohesive soils temporarily lose their strength and liquefy (i.e., behave like a viscous liquid) when subjected to forces such as intense and prolonged ground shaking. Three factors are required for liquefaction to occur: the soil must be composed of loose, granular sediment; the sediment must be saturated by groundwater (water fills the spaces between sand and silt grains); and strong shaking must occur.

The section of the Project located in Mobile County is in an area of the Coastal Plain that consists of sand, silts, gravels and clays with the potential to be saturated with water. As such, the Geological Survey of Alabama has classified the area around the Project as having a very high soil-liquefaction susceptibility due to the soil types underlying the Project and the vicinity to the Gulf of Mexico (GSA 2008). Although the Project lies within an area where superficial geologic conditions required to pose a risk of soil liquefaction are generally present, we consider the potential for soil liquefaction to occur to be low because of its low seismicity potential.

Landslides, Karst Terrain, and Subsidence

As previously discussed, the Project is in an area characterized by low topographic relief on the order of 10 feet, and a review of the USGS Landslide Overview Map of the

Conterminous U.S (Radbruch-Hall et al. 1982), shows that the Project is located in an area characterized as having a low incidence for landslides (less than 1.5 percent of the area involved). As such, we do not anticipate the Project to be susceptible to landslides.

Bedrock susceptible to karst development (regions underlain by limestone, dolomite, gypsum, or salt deposits and characterized by closed depressions (sinkholes), caves, cave systems, and underground drainage) is not found near the vicinity of the Project pipeline or CS 410. Karst terrain could occur within the Project area for CS 420. However, Project activities at CS 420 would be limited to previously disturbed areas at the existing facility and impacts associated with karst are not anticipated.

Lastly, the areas in the vicinity of the Project are not known to be subject to subsidence due to groundwater pumping, underground mines or oil and gas extraction.

Based on the above analysis, we conclude that the Project would not impact mineral and/or paleontological resources in the Project area nor would Project activities be impacted by or alter local topographic or geological conditions, and would not be affected by geologic hazards (seismicity, surficial faulting, landslides, soil liquefaction, karst development, and ground subsidence).

B.2 Soils

The primary potential impacts from construction would be temporary or minor disturbances that expose soils to potential risk of erosion, off right-of-way sedimentation, possible mixing of topsoil and subsoil.

Construction could also result in compaction of soils from construction equipment in work areas. Soil compaction can lead to increased runoff and adversely affect agricultural crop production.

Approximately 100 percent (by total acreage) of the soil map units crossed by the three contractor yards and 93 percent of the soil map units crossed by CS 420 are rated as prime farmland or soils of statewide importance. As discussed, Project construction activities at CS 420 would be within previously disturbed areas at the existing facility. Also, all three contractor yards would be located in previously disturbed areas.

Soils that would be crossed by the Project do not generally pose any severe limitations for construction, and Gulfstream would take steps to mitigate for any limitations, such as areas susceptible to erosion and soil compaction. Soil erosion would be controlled by following the standard practices and BMPs to prevent erosion and sedimentation in accordance with Gulfstream's Plan and Procedures, the measures

provided in Gulfstream's SPCC Plan, as well as project-specific ESC Plan, and applicable permit conditions.

Gulfstream consulted with federal and state agency databases regarding the potential to encounter contaminated sediments along the Project. Gulfstream conducted an analysis of the route using the United States Environmental Protection Agency (U.S. EPA) NEPAassist database (USEPA 2019a). According to this assessment, the Project is not within one mile of a brownfield site or superfund site. It is not anticipated that contaminated soils will be encountered as a result of construction of the Project.

Because Gulfstream would implement measures contained in their Plan and Procedures and, its project-specific erosion control plan and spill prevention plan; we conclude that impacts on soils would be temporary and not significant.

B.3 WATER RESOURCES

Water resources that could occur within the Project area include groundwater, surface water and wetlands. Each resource area is discussed in detail below.

B.3.1 Groundwater Resources

The proposed pipeline and CS 410 are within the Coastal Lowlands Aquifer System of the Southeastern Coastal Plain major aquifer, which is categorized as a semi-consolidated sand aquifer. This system is an important source of water supply throughout the inner part of the Coastal Plain. Covering an area of approximately 90,000 square miles, the aquifer system underlies the Coastal Plain of Alabama, Georgia, South Carolina, and the panhandle region of Florida; and extends westward through a large portion of Mississippi.

The Coastal Lowlands Aquifer (also known as the Sand and Gravel aquifer and the Miocene-Pliocene aquifer) consists of interbedded layers of sand and gravel with common clay beds and lenses that form local confining layers. This aquifer supplies most of the water used by smaller communities in the rural portions of Mobile County. Water quality in this aquifer is suitable for drinking with high yields, as much as 850-1,000 gallons per minute. The water table ranges from a few feet to about 50 feet below land surface (USGS 1990).

CS 420 is in Manatee County and the Surficial Aquifer System. This aquifer is typically used for domestic, commercial, or small municipal supplies. The groundwater is unconfined in most places.

The EPA defines a sole-source aquifer area as one that supplies greater than 50 percent of the 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. We reviewed the Project area to identify any sensitive groundwater resources, including sole-source aquifers, state-designated aquifers, public and private water supply wells, springs, and wellhead and aquifer protection areas. No sole-source aquifers areas were identified within the Project area.

The Alabama Department of Environmental Management (ADEM) has the responsibility for protecting the water resources of Alabama to include surface water, groundwater, and Source Water Assessment and Protection (SWAP) areas, or wellhead protection areas. ADEM determined that the Project would not traverse or be in the vicinity of any wellhead protection areas (Wilson personal comm 2019) and the closest wellhead protection areas are located about 3 miles northwest of the Project site in Mobile County. Therefore, no impacts to wellhead protection areas are anticipated.

The FDEP has the responsibility for protecting the water resources of Florida to include surface water, groundwater, and SWAPs. Gulfstream reviewed FDEP's online records viewer to identify any source water assessment areas locations near CS 420. The Project would not traverse or be within one mile of a SWAP areas (FDEP 2019b), with the closest SWAP area is the Manatee RV Park located about 1.5 miles north of CS 420. Therefore, no impacts to SWAP areas in Florida are anticipated.

Gulfstream identified one groundwater supply well within 150 feet of the construction work areas for the Project. The well is located within the boundary of CS 410 and is utilized for operations at the facility. Gulfstream will continue to work with individual landowners to identify any additional private wells and springs prior to construction. No springs were identified within 300 feet of the Project area.

General Impacts and Mitigation

Construction activities associated with the Project that have the potential to impact groundwater include shallow excavations, hydrostatic test discharges, and potential spills or leaks of hazardous liquids from the refueling of construction vehicles or storage of fuel, oil, and other fluids. Surface drainage and groundwater recharge patterns can be temporarily altered by clearing, grading, trenching, and soil stockpiling activities, potentially causing minor fluctuations in groundwater levels and/or increased turbidity, particularly in shallow surficial aquifers. Although groundwater could be encountered during trenching associated with the proposed pipeline, Gulfstream would conduct trench dewatering in accordance with the Project specific Construction Best Management Practices Plan (CBMPP) to comply with ADEM regulations and applicable local, state, and federal permits. As such, we expect the resulting changes in water levels and/or turbidity in these aquifers to be localized and temporary because water levels quickly re-establish equilibrium and turbidity levels rapidly subside.

Gulfstream is currently evaluating the potential sources of hydrostatic test water and is planning to utilize municipal sources for water. Should groundwater sources be proposed for use in hydrostatic testing, Gulfstream would apply for the associated permits and would comply with applicable regulations for groundwater withdrawal.

Gulfstream would conduct pre- and post-construction monitoring for well yield and water quality for any public or private wells identified within 150 feet of the construction workspaces, with landowner permission. If the Project impacts private or public well quality or yield, Gulfstream would provide alternative water sources or offer compensation to the well owner. If the proposed construction adversely affects a groundwater supply, Gulfstream would work with the landowner to resolve the damaged supply through compensation, repair, or replacement.

Gulfstream has not identified any known areas of existing groundwater contamination within the Project areas. An accidental spill of fuel or hazardous material during refueling or maintenance of construction equipment could affect groundwater if not cleaned up appropriately. Spill-related impacts would be minimized by implementation of the measures included in the Gulfstream SPCC Plan. Some of the measures to be implemented include training personnel on the proper handling of fuels and other hazardous materials, instituting appropriate spill cleanup and notification procedures, ensuring equipment is in good operating condition and regularly inspecting equipment for leaks.

Upon completion of construction, Gulfstream would restore the ground surface to original contours, to the extent practicable, and would re-vegetate disturbed areas, excluding areas within permanent aboveground facility fence lines and access roads, with the goal of restoring preconstruction overland flow and recharge patterns. Project operations would not result in impacts on groundwater resources unless maintenance activities involving pipe excavation and repair were needed. In such instances, the potential impacts and proposed mitigation measures would be similar to those described for construction activities.

With implementation of proposed mitigation measures and Gulfstream's CBMPP and SPCC Plan, we conclude that no significant or long-term impacts from construction and operation of the facilities would occur on groundwater resources.

B.3.2 Surface Water

The Project is located within two Cataloguing Unit (CU) watersheds (an 8-digit Hydrologic Unit Code [HUC]) as defined by the USGS. The pipeline and CS 410 are located within the Mississippi Coastal Watershed (HUC 03170009) and CS 420 is within the Tampa Bay Watershed (HUC 03100206). The pipeline would cross five intermittent waterbodies and five ephemeral waterbodies, as identified in table 3. One ephemeral

waterbody was identified on the perimeter of CS 410 and would be crossed via an existing culverted entrance to the facility. A total of three ephemeral waterbodies would be crossed, one at each of the three Contractor Yards, via temporary matting or equipment bridges. All the waterbodies are classified as Tier 1 – Warm-water by the state of Alabama.

TABLE 3 Waterbodies Crossed by the Project						
Waterbody ID	Waterbody Name	MP	Flow Regime	Crossing Length (feet) ^a	FERC Classification ^b	Crossing Method ^c
Pipeline						
SMB004	Tributary to Bayou Sullivan	1.9	Intermittent	4.5	Minor	Open Cut
SMB005	Bayou Como	2.1	Intermittent	13.0	Intermediate	Open Cut
SMB006	Tributary to Bayou Como	2.6	Ephemeral	--	Minor	Open Cut
SMB007	Tributary to Bayou Como	2.8	Intermittent	2.5	Minor	Open Cut
SMB008	Tributary to Bayou Como	2.9	Ephemeral	1.5	Minor	Bore
SMB013	Tributary to Bayou Como	2.9	Ephemeral	0.3	Minor	Bore
SMB009	Tributary to Bayou Como	3.0	Intermittent	2.5	Minor	Open Cut
SMB010	Tributary to Bayou Como	3.0	Intermittent	2.5	Minor	Open Cut
SMB011	Tributary to Bayou Como	3.2	Ephemeral	3.0	Minor	Open Cut
SMB014	Tributary to Bayou Como	3.2	Ephemeral	0.2	Minor	Open Cut
Access Roads						
SMB005	Bayou Como	--	Intermittent	13.0	Intermediate	Existing Culvert
Compressor Station 410						
SMB012	Tributary to Bayou Jonas	--	Ephemeral	3.0	Minor	Existing Culvert
Contractor Yards						
SMB015	Tributary to Bayou Como	--	Ephemeral	0.2	Minor	Matting / Bridge ^d
SMB016	Tributary to Bayou Jonas	--	Ephemeral	0.2	Minor	Matting / Bridge ^d
SMB017	Tributary to Carls Creek	--	Ephemeral	1.0	Minor	Matting / Bridge ^d
<p>a - Crossing length is calculated based on the surveyed top-of-bank to top-of-bank stream width.</p> <p>b - FERC defines waterbodies as being minor if they are less than or equal to 10 feet wide at the crossing location and intermediate if they are greater than 10 feet wide but less than or equal to 100 feet wide at the crossing location.</p> <p>c - Dam and pump crossings would be performed in those waterbodies with perceivable flow conditions at the time of construction.</p> <p>d - Temporary matting or installation of temporary equipment bridges would be constructed across the ephemeral waterbodies prior to use of the site to facilitate safe travel of construction equipment across the waterbodies and to minimize impacts to the waterbodies in accordance with the Gulfstream Procedures.</p>						

Most of the waterbodies in the Project area would be crossed using standard open cut techniques if the waterbody is dry or would use the dam-and-pump method in those waterbodies with perceivable flow conditions at the time of construction. The dam-and-pump method involves installing temporary dams upstream and downstream of the proposed waterbody crossing, typically using sandbags and plastic sheeting. Trench excavation and pipe installation would then commence through the dewatered and relatively dry portion of the waterbody channel. After pipe installation, backfilling of the trench, and restoration of the stream banks, the temporary dams would be removed, and flow through the construction work area would be restored. The dam-and-pump method is typically used at waterbodies where pumps and hoses can adequately transfer stream flow volumes from upstream of the work area to downstream of the work area, and there are no concerns with preventing the passage of aquatic organisms.

At the contractor yards, temporary matting or installation of temporary equipment bridges would be constructed across the ephemeral waterbodies prior to use of the site to facilitate safe travel of construction equipment across the waterbodies and to minimize impacts on the waterbodies in accordance with the Gulfstream Procedures. These crossings would be removed as part of final clean-up and restoration.

According to the Final 2018 Alabama 303(d) Water Quality Assessment Integrated Report, no waterbodies within the Project workspaces are listed as impaired. No public watershed areas are located within or immediately adjacent to the Project. No potable water intakes are known within three miles upstream of any waterbody crossing. No Nationwide Rivers Inventory (NPS 2019), or National Wild and Scenic Rivers segments (Rivers 2019) are crossed or are located within 0.25 miles of the Project areas. Therefore, no impacts are anticipated on these resources.

Hydrostatic testing

In compliance with USDOT regulations at 49 CFR Part 192, Gulfstream would conduct hydrostatic testing on the Project components prior to placement in service. Gulfstream plans to utilize municipal sources for water to be used during hydrostatic testing, estimating 1,014,000 gallons of water for testing the pipeline and 35,400 gallons for use at CS 410. The exact hydrostatic test water discharge locations would be determined prior to construction; however, hydrostatic test water would be discharged only into upland, well-vegetated areas, through an energy-dissipating device and containment structures such as hay bale structures and filter bags. Under Section VII.B.3 of Gulfstream's procedures, it would have to file with the Secretary a list identifying the location of all waterbodies proposed for use as a hydrostatic test water source or discharge location.

General Impacts and Mitigation

Construction activities from the Project, particularly clearing, dry crossings, hydrostatic test discharges, and spills or leaks of hazardous liquids have the potential to impact surface water quality. Pipeline waterbody crossings can result in a temporary increase in turbidity and may result in downstream sedimentation. Surface runoff and erosion from cleared rights-of-way can also increase in-stream turbidity and sedimentation. Other potential negative effects include spills or leaks of hazardous materials from nearby refueling stations or equipment failures that could have immediate effects on aquatic resources and potentially contaminate waterbodies downstream of the release point. Alteration of waterbody banks and removal of riparian corridor vegetation, if not stabilized and revegetated properly, can result in soil erosion and waterbody bank sloughing. Removal of riparian vegetation and increased turbidity can reduce suitability of habitat for aquatic species. Potential effects on fisheries resources from the Project and proposed mitigation are discussed further in section B.4.2.

To minimize effects at waterbody crossings during construction, operation, and maintenance, Gulfstream would construct the Project in accordance with the BMPs and ECDs outlined in its Project CBMPP and Procedures, and with all applicable federal and state regulations and permit requirements including stormwater permit requirements. Gulfstream would coordinate with the applicable regulatory authorities to return the waterbody contours to as near to preconstruction conditions as possible.

Impacts on the waterbody adjacent to CS 410 are not anticipated and Gulfstream would conduct construction activities in accordance with the Project specific CBMPP and its Procedures to minimize potential for runoff to this waterbody. At the Contractor Yards, the temporary matting or equipment bridges would reduce impacts on the waterbodies in accordance with the Gulfstream Procedures. These crossings would be removed as part of final clean-up and restoration.

To minimize the potential for sedimentation to waterbodies caused by erosion from adjacent construction activities, trench spoil that is excavated from waterbodies and banks would be placed in adjacent additional temporary workspace (ATWS) areas. ECDs and other BMPs, would be placed at the downslope edges of the spoil piles to prevent sediment from entering the waterbody. After pipeline placement is complete, the temporary spoil material would be placed back in the trench and the waterbody and bank would be restored as close to pre-construction contours as feasible. Waterbody banks and riparian corridors would then be revegetated in accordance with the Project CBMPP, and any applicable agency requirements.

In accordance with the Project SPCC Plan and Procedures, any hazardous materials, chemicals, lubricating oils, solvents, or fuels used during construction would be stored in upland areas at least 100 feet from wetlands and waterbodies. Additionally,

no refueling or lubricating of vehicles or equipment would be performed within 100 feet of a waterbody. Gulfstream would conduct routine inspections of tanks and storage areas to help reduce the potential for spills or leaks of hazardous materials.

There are several areas where Gulfstream requested a modification measures to the FERC Procedures; specifically, Gulfstream is proposing to locate extra work area within 50 feet of the waterbodies as a modification to our Procedures under V.B.2.a, as described in table 4. We have reviewed the justification provided for these distances listed in Gulfstream's Procedures and find them acceptable.

TABLE 4 Extra Workspace Located Within 50 feet of a Waterbody					
ATWS	MP	Waterbody ID	Distance from ATWS (feet)	Waterbody Type	Justification
Pipeline Segment					
MO-017	2.6	SMB006	28.8	Ephemeral	Point of Inflection
MO-011	2.9	SMB013	0.0	Ephemeral	Road Crossing
MO-012	2.9	SMB008	0.0	Ephemeral	Road Crossing
MO-013	2.9	SMB008	0.0	Ephemeral	Road Crossing
MO-031	3.1	SMB009	23.4	Intermittent	Point of Inflection
MO-032	3.2	SMB011	43.4	Ephemeral	Road Crossing
MO-032	3.2	SMB014	9.7	Ephemeral	Road Crossing
<p>Point of Inflection: Identified waterbodies are associated with a Point of Inflection (PI). ATWS required for stockpiling of excavated materials and equipment to facilitate safe and efficient PI.</p> <p>Road Crossing: Identified waterbodies are associated with a road crossing. The extra workspace is required for added depth of the bore under the roadway. This leads to increased width of right-of-way for fabrication of bore pipe section and spoils storage at road crossings.</p>					

Implementation of Gulfstream's Procedures would minimize and mitigate impacts on surface waters, including sensitive surface waters. Based on the discussion above, we conclude that the Project would not have a significant impact on surface waters.

B.3.3 Wetlands

Wetland delineations were performed in accordance with the United States Army Corps. of Engineers (USACE) 1987 Wetlands Delineation Manual (USACE 1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region (USACE 2010). Field surveys were conducted in January and February 2019. The wetlands in the Project area were delineated as palustrine forested (PFO) and palustrine emergent (PEM). PFO wetlands are dominated by hydrophytic tree species at least 20 feet tall. PEM wetlands are characterized by erect, rooted, herbaceous hydrophytes, excluding mosses and lichens. A total of 18 wetlands (11 PEM wetlands and 7 PFO wetland) would be crossed or are located within

construction workspace for the Project. One additional wetland would be located within CS 410 but would not be impacted during construction. No wetlands would be affected by the contractor yards or the access roads. Wetlands crossed within the Project area are described in table 5.

TABLE 5 Wetlands Crossed by the Project						
Wetland ID	Cowardin Classificaion^a	MP	Approximate Centerline Crossing Length (feet)	Temporary Impact (acres) ^b	Permanent Conversion (acres) ^b	Total Impact (acres) ^b
Pipeline Replacement						
WMB002H	PFO	0.0	481.1	4	0.68	4.7
WMB002N	PEM	0.1	744.0	0.72	0.85	1.6
WMB002G	PEM	0.2	149.0	0.29	0.01	0.30
WMB002F	PEM	0.3	--	0.02	0.03	0.05
WMB002C	PFO	0.3	251.0	0.78	0.79	1.57
WMB002A	PEM	0.4	297.3	0.38	0.02	0.40
WMB004	PEM	0.8	12.5	0.01	0.02	0.03
WMB003	PEM	1.9	--	0.01	0.00	0.01
WMB005A	PEM	2.5	--	0.01	0.00	0.01
WMB006A	PEM	2.7	13.9	0.01	0.01	0.02
WMB006B	PFO	2.7	--	0.01	0.01	0.02
WMB008A	PEM	2.8	--	0.00	0.01	0.01
WMB008B	PFO	2.8	--	0.04	0.02	0.06
WMB014	PFO	2.9	--	0.05	0.00	0.05
WMB010	PFO	3.1	--	0.08	0.03	0.11
WMB012A	PEM	3.2	--	0.01	0.00	0.01
WMB013B	PFO	3.9	3,273.7	7.4	2.8	10.2
WMB013A ^c	PEM	3.9	1,037.0	2.89	0.37	3.26
Compressor Station 410						
WMB001 ^d	PEM			--	--	--
Total				16.7	5.6	22.3
PEM				4.3	1.3	5.7
PFO				12.4	4.3	16.7
a - Designations for each type of wetland follow the classifications developed by the USFWS after Cowardin et al. (1979). b - Wetland impact acreages were calculated from field-surveyed assessed wetlands occurring within the proposed Project workspaces. c - Includes 0.04 acre of permanent wetland fill where wetland is within the extended fence line area for the new mainline valve at MP 4.0. d - Wetland located within Compressor Station 410 but would not be impacted during construction.						

General Impacts and Mitigation

The primary impact of Project construction on wetlands would be the clearing and alteration of wetland vegetation. Construction could also affect soils, and water quality within wetlands due to sediment loading or inadvertent spills of fuel or chemicals. The construction of the pipeline would result in wetland impacts, including temporary impacts on PEM, long-term to permanent impacts on PFO wetlands, permanent conversion impacts on PFO wetlands, and permanent fill impacts on PEM wetlands.

Temporary impacts on wetlands may include soil disturbance, temporary alteration of hydrology, and loss of vegetation. The majority of these effects would be short-term in nature and would cease when, or shortly after, the wetlands are restored and revegetated. Following revegetation, wetlands would eventually transition back into a community similar to that of the pre-construction state. In emergent wetlands, the herbaceous vegetation would regenerate quickly (typically within 1 to 3 years). Because these areas are naturally open and herbaceous, there would be little to no permanent impacts on emergent wetlands. Impacts on scrub-shrub and PFO wetlands would last longer than those on emergent wetlands. Woody vegetation may take several years to regenerate to its original density. Mature forested wetlands would not return to pre-construction conditions for decades. Furthermore, annual mowing and maintenance of a 10-foot-wide herbaceous strip centered over the pipeline, and removal of trees taller than 15 feet within 15 feet of the pipeline centerline, would result in a long-term, permanent impact by converting previously forest vegetated wetland areas to emergent wetland areas.

In order to avoid direct impacts on PFO wetlands, Gulfstream revised the pipeline route between MP 0.05 to MP 0.25. The routing avoids 1.4 acres of impacts on PFO, instead resulting in 1.4 acres of temporary impacts on PEM wetlands.

Permanent wetland impacts associated with the Project would be a conversion of about 4.3 acres of forested wetlands to emergent or scrub-shrub wetlands as a result of vegetation maintenance of the permanent cleared right-of-way and filling of a small area (0.04 acre) of an emergent wetland located within the extended fence line area for the new mainline valve at MP 4.0. Permanent conversion of PFO wetlands located in the permanent right-of-way would result in loss of the incremental portion of functional value associated with loss of tree cover, but these wetlands would retain other wetland values such as water retention, water filtration and aquatic habitat.

As stated previously, mature forested wetlands cleared for construction would not return to pre-construction conditions for decades. In some instances, this impact would persist beyond the life of the Project and would be considered permanent. Filling of the small area of wetland located within the extended fence line area for the new mainline valve at MP 4.0 would result in permanent wetland loss.

Gulfstream proposed to locate the mainline valve at MP 4.0 within a wetland, which would be a modification of our Procedures under VI.A.6. Gulfstream contends that the proposed location of the new mainline valve at MP 4.0, while in a wetland, is the best location from a safety and environmental standpoint as it would be located in a previously disturbed area. The wetland complex is large enough that moving either upstream or downstream would result in newly disturbed areas requiring new permanent fill of wetlands on both sides of the new mainline valve, resulting in greater wetland impacts than the proposed location of the new mainline valve. We agree.

Gulfstream would minimize the extent and duration of Project-related disturbance to wetland resources before, during, and after construction. As previously discussed, Gulfstream, in accordance with the Gulfstream Procedures, would maintain the following setbacks from surface water and wetland resources throughout construction and operation (unless where otherwise noted below):

- additional construction work areas (additional temporary workspace) would be set back a minimum of 50 feet (except as noted in table 7);
- construction spoil piles would be set back a minimum of 50 feet; and
- no hazardous materials storage, concrete coating, equipment/vehicle parking, refueling, herbicide application, or pesticide use would occur within 100 feet.

Gulfstream would minimize potential adverse effects on wetlands by expediting construction in and around wetlands, restoring wetlands to their original configurations and contours, segregating topsoil during excavation, permanently stabilizing upland areas near wetlands as soon as possible after backfilling, inspecting the right-of-way periodically during and after construction, and repairing any erosion control or restoration features until permanent revegetation is successful. Erosion controls, including silt fence and/or staked BMPs, also would be put in place to protect wetlands from sediment from disturbed areas in adjacent uplands during construction.

Gulfstream is requested a modification to section VI.A.3 of our Procedures to allow for a construction right-of-way of 100 feet in several wetland areas, as shown in table 6. Gulfstream has stated that to safely perform the sub-grade work, large bellholes would need to be excavated. The excavated soil would be stockpiled out of the way of the construction contractors. Due to the amount of work and equipment at each location, a greater amount of workspace would be required. Space for strength test headers and pre-fabrication areas would also be needed in both areas.

Additional temporary workspace on the west side of MP 0.0 would be utilized for pipeline contractor access to right of way without moving multiple vehicles through the active CS 410.

We have reviewed these modifications and find them acceptable.

TABLE 6					
Locations where Construction Right-of-Way would be Greater than 75 feet within Wetlands					
MP Begin	MP End	Wetland ID	Proposed Right-of-Way Width (feet)	Wetland Type	Justification
Pipeline Segment					
0.0	0.4	WMB002G / WMB002H	100-125	PEM / PFO	Workspace greater than 75 feet required due to the following factors: <ul style="list-style-type: none"> • Low angle of repose of topsoil and subsoil and associated additional area needed for soil stockpiling, equipment, access, and testing. • Additional area to construct points of inflection within wetland areas. • No suitable upland areas within proximity for use as soil storage.
3.2	4.0	WMB013A / WMB013B	100	PEM / PFO	

Gulfstream is requesting a modification to section VI.B.1.a of our Procedures to allow for extra work area within 50 feet of the wetlands. They have also requested use of an extra workspace as construction access, which is a modification of section VI.B.1.d of the Procedures. We have reviewed these modifications and find them acceptable. Table 7 shows the extra workspaces requested.

Gulfstream would identify wetland mitigation banks that would be used to mitigate for wetland impacts. As part of its Section 404 application to the USACE, Gulfstream would include a Mitigation Plan, which would include restoration monitoring of jurisdictional Waters of the U.S. that have been temporarily impacted, jurisdictional waters that have been permanently impacted, and information on the purchase of mitigation credits from a USACE approved mitigation bank or banks servicing the affected watersheds of the Project. Gulfstream would propose a mitigation ratio of 1:3 to calculate the mitigation banking of wetlands. After consultation and confirmation of credit calculations and credit suppliers with the USACE, Gulfstream intends to enter into a credit agreement with the banks.

Upon completion of construction in all areas except within the extended fence line area for the new mainline valve at MP 4.0, topsoil, contour elevations, and hydrologic patterns would be restored, and affected areas would be reseeded or replanted to promote the re-establishment of native hydrophytic vegetation. The temporary construction right-of-way and ATWS areas would be restored to preconstruction grades and contours and reseeded. With implementation of these measures and the Gulfstream Procedures, we conclude that wetland impacts would not be significant.

TABLE 7 Extra Workspace Located Within 50 feet of a Wetland					
ATWS	MP	Wetland ID	Distance from ATWS (feet)	Wetland Type	Justification
Pipeline Segment					
MO-002	0.0	WMB002H	0.0	PFO	Construction Access
MO-005	0.0	WMB002N	0.0	PEM	Point of Inflection
MO-001	0.1	WMB002H / WMB002N	0.0	PFO / PEM	Point of Inflection
MO-014	0.2	WMB002G / WMB002H	0.0	PEM / PFO	Point of Inflection
MO-026	0.2	WMB002H	0.0	PFO	Point of Inflection
MO-015	0.4	WMB002C	0.0	PFO	Point of Inflection
MO-016	0.4	WMB002A	0.0	PEM / PFO	Point of Inflection
MO-004	1.0	WMB004	21.1	PEM	Topsoil Segregation
MO-011	2.9	WMB014	0.0	PFO	Road Crossing
MO-032	3.2	WMB013B	0.0	PFO	Road Crossing
MO-033	3.3	WMB013B	0.0	PFO	Drag Section
MO-034	3.4	WMB013B	0.0	PFO	Point of Inflection
MO-035	3.4	WMB013A / WMB013B	0.0	PEM / PFO	Point of Inflection
MO-023	3.9	WMB013A	0.0	PEM	Point of Inflection
MO-025	3.9	WMB013B	0.0	PFO	Drag section
MO-029	3.9	WMB013A / WMB013B	0.0	PEM / PFO	Point of Inflection
MO-027	4.0	WMB013A / WMB013B	0.0	PEM / PFO	Facility
<p>Point of Inflection: Identified wetlands are associated with a Point of Inflection (PI). ATWS required for stockpiling of excavated materials and equipment to facilitate safe and efficient PI.</p> <p>Drag Section: Identified wetlands are associated with a drag section. ATWS required for stringing pipes in wooded areas.</p> <p>Topsoil Segregation: Identified wetlands are associated with topsoil segregation areas. ATWS required for stockpiling of excavated topsoil.</p> <p>Facility: Identified wetlands are associated with aboveground facility (mainline valve). ATWS in or near the facility required for stockpiling of materials and equipment to facilitate safe and efficient installation of the pipeline.</p> <p>Road Crossing: Identified wetlands associated with road crossing. ATWS required for safe and efficient construction of the road crossing.</p>					

B.4 VEGETATION, WILDLIFE, AND THREATENED AND ENDANGERED SPECIES

B.4.1 Vegetation

Vegetation in the project area consists of agricultural land, upland forest, upland herbaceous land, wetlands (PEM and PFO), and developed lands. Agricultural land includes cropland and hay pastureland. Upland forest communities include mixed hardwood forest, pine forest, and planted pine. Common upland forest species include longleaf and loblolly pine, bluejack oak, turkey oak, and live oak. The herbaceous uplands category is all areas that are not forested or in agricultural production or landscaped. Upland herbaceous includes existing right-of-way, utility easements, road corridors, herbaceous dry prairie, and shrub/brushland. PEM wetlands include wet meadows, sedge meadows, and freshwater marshes. Vegetation in PFO wetlands would include maple, sycamore and elm. Developed land includes pipeline facilities and housing areas with a combination of impervious surfaces and mixed vegetation.

There are no rare, unique, or sensitive natural communities or vegetation species present within the Project area. Vegetation affected by the Project is presented in table 8. Impacts associated with equipment staging and vehicle parking and ground-disturbing activities would be limited to the 3 contractor yards and the previously disturbed areas at the existing CS 410 and CS 420 facilities.

Invasive plant species are species that have been introduced from another part of the U.S. or another country and display rapid growth and spread. These species can outcompete native vegetation and change the composition of native vegetation communities and reduce the quality of habitat for wildlife and native plant species. Prior to construction, Gulfstream would perform a pre-construction noxious weed inventory to identify invasive species present within the Project areas. Gulfstream would consult with the Natural Resources Conservation Service to determine recommendations for the prevention and control of the spread of exotic and invasive plant species.

General Impacts and Mitigation

Installing the proposed facilities would require the temporary and permanent clearing of vegetation. Forest vegetation in the permanent right-of-way would be maintained in an herbaceous state through the operational life of the Project. For non-forested vegetation types, including agricultural land, open land, and non-forested wetlands, impacts from pipeline construction would generally be short-term and temporary.

TABLE 8 Vegetation Types Crossed by the Project													
Vegetation Community	Facility												Project Total
	Pipeline			Aboveground Facilities			Access Roads			Contractor Yards			
	Temp. Impact ^a	Perm. Impact	Total	Temp. Impact	Perm. Impact	Total	Temp. Impact	Perm. Impact	Total	Temp. Impact	Perm. Impact	Total	
Upland Forest													
Mixed Hardwood – Pine	5.7	2.3	8.0	--	--	--	--	--	--	--	--	--	8.0
Upland Herbaceous	5.4	1.1	6.5	--	--	--	--	--	--	--	--	--	6.5
Agricultural Lands													
Hay/Pasture	16.8	4.3	21.1	--	--	--	0.46	--	0.46	--	--	--	21.6
Wetlands													
Emergent	4.3	1.3	5.7	--	--	--	--	--	--	--	--	--	5.7
Forested	12.4	4.3	16.7	--	--	--	--	--	--	--	--	--	16.7
Open Water	0.11	0.03	0.14	--	--	--	--	--	--	<0.01	--	<0.01	0.14
Developed/Non-Vegetative	0.35	0.01	0.36	48.8	1.5	50.3	--	--	--	34.9	--	34.9	85.5
Total	45.1	13.4	58.6	48.8	1.5	50.3	0.46	--	0.46	34.9	--	34.9	143.7
a - Includes Temporary right-of-way and Additional Temporary Workspace. b – Columns may not add up due to rounding. Source: Environmental field survey data.													

After construction is complete, the project right-of-way and all temporary work areas would be revegetated according to measures contained in Gulfstream's Plan and Procedures and all other areas would be maintained in permanent operational use. Disturbed areas would be reseeded using seed mixes recommended by local and state agencies and land outside the permanent easement would be allowed to revert to pre-construction condition, which would be a short-term impact (1 to 3 years to reach preconstruction densities) for open land and would be a long-term or permanent impact for forested areas. Construction would affect about 8 acres of upland forest and 16.7 acres of wetland forest. In addition, temporary workspaces at aboveground facilities are adjacent to existing aboveground facilities and within existing facility property boundaries that are previously developed and disturbed industrial areas and would not significantly alter the vegetative communities at these sites. We conclude that the Project would not have a significant impact on vegetation in the Project area.

B.4.2 Wildlife and Aquatic Species

The habitat types affected by the Project include forest/woodland, herbaceous upland, developed land, agricultural land, and wetland. Common wildlife found in the herbaceous upland portions of Project area include American robin, common grackle, eastern cottontail rabbit, raccoon, garter snake. In forested areas, wildlife such as red-headed woodpecker, wild turkey, black bear, gray squirrel, hognose snake, and Florida box turtle may be found. Wetlands in the Project area support species such as beaver, great egret, mallard duck, white ibis, alligator, frogs, and various turtle species.

Intermittent waterbodies may provide seasonal nursery habitat for forage fish and some recreational species; however, the lack of permanent water prevents these waterbodies from supporting a year-round fishery and aquatic resources. Similarly, given that water is only present in ephemeral waterbodies immediately following rainfall events, these waterbodies do not support seasonal or year-round fishery and aquatic resources. No essential fish habitat or fisheries of special concern have been identified in the Project area.

Migratory Birds and Bald Eagle

Migratory birds are federally protected under the Migratory Bird Treaty Act (MBTA). The MBTA (16 USC 703-712) as amended, implements protection of many migratory game and non-game birds with exceptions for the control of species that cause damage to agricultural or other interests. The MBTA prohibits the take of any migratory bird or their parts, nests, and eggs, where "take" means to "pursue, hunt, shoot, wound, kill, trap, capture, or collect."

Executive Order 13186 (66 Federal Register 3853) requires that all federal agencies undertaking activities that may negatively affect migratory birds take a prescribed set of actions to further implement the MBTA and directs federal agencies to develop a memorandum of understanding (MOU) with the U.S. Fish and Wildlife Service

(USFWS) that promotes the conservation of migratory birds through enhanced collaboration with the USFWS. FERC entered into an MOU with the USFWS in March 2011.

Though all migratory birds are afforded protection under the MBTA, both Executive Order 13186 and the MOU require that Birds of Conservation Concern (BCC) and federally listed species be given priority when considering the effects on migratory birds. Executive Order 13186 states that emphasis should be placed on species of concern, priority habitats, and key risk factors, and that particular focus should be given to addressing population-level impacts. There are 53 total species included on the BCC list for the Bird Conservation Region 27 – Southeastern Coastal Plain, which would be crossed by the Project facilities in Alabama. CS 420 is located in Bird Conservation Region 31-Peninsular Florida, where there are 49 total species included on the BCC list.

The bald eagle is one of the species identified as a BCC for Bird Conservation Regions 27 and 31 and is also protected under the Bald and Golden Eagle Protection Act. The bald eagle occurs throughout Florida and in southern coastal Alabama as a permanent resident, typically nesting in forested areas adjacent to large bodies of water. They tend to use tall, sturdy conifers that protrude above the forest canopy, providing easy flight access and good visibility.

Gulfstream reviewed known species occurrence data provided by the Alabama Natural Heritage Program (ALNHP) and the Florida Fish and Wildlife Conservation Commission (FWCC) Bald Eagle Nest Locator to identify any documented eagle nests or buffers within or near the Project areas. No bald eagle nests were documented near the Project areas in Alabama and nine bald eagle nests were documented within a five-mile radius of CS 420 in Florida, four of which have been active in the last five years. Nest HL054 is the closest, located approximately 1.6 miles northwest of CS 410. No bald eagles or bald eagle nests have been identified during field survey efforts for the Project.

General Impacts and Mitigation

Potential impacts on wildlife include habitat removal and construction-related ground disturbance and noise. Most species present in the Project area have adapted to human presence and disturbance. Some individuals could be inadvertently injured or killed by construction equipment; however, more mobile species such as birds and mammals would likely relocate to other nearby suitable habitat to avoid the project area once construction activities commence. Aquatic habitat would be restored to pre-construction conditions, minimizing potential impacts on aquatic species.

Portions of forested habitat associated with the Project is existing edge habitat created by the existing utility rights-of-way with which the Project would be collocating. As a result, impacts on wildlife associated with forested habitat would be minimal along

the collocated route. Forested habitat that is temporarily disturbed during construction would be allowed to naturally revegetate.

The temporary disturbance of local habitat is not expected to have population-level effects on wildlife because the amount of habitat crossed represents only a small portion of the habitat available to wildlife throughout the proposed Project area, and much of the Project area would return to preconstruction use. However, long-term impacts from habitat alteration would be further minimized by the implementation of mitigation measures contained in Gulfstream's Plan, which would ensure revegetation of most areas disturbed by construction. By using response measures to leaks or spills provided in the Gulfstream SPCC Plan, Gulfstream would also minimize and mitigate potential adverse effects to wildlife. Therefore, we conclude that the Project would not have a significant impact on wildlife or their habitat in the Project area.

General Impacts and Mitigation of Migratory Birds and Bald Eagle

A variety of migratory bird species, including songbirds, raptors, and waterfowl utilize habitat located in the Project area. Potential impacts on migratory birds include habitat loss, disruption of foraging adults, and abandonment or destruction of active nests. During construction the noise and human activity could result in short-term disturbance, causing birds to avoid the area and/or relocate during active construction. The primary concern for nesting birds, including bald eagles, is the cutting, clearing, and removal of existing vegetation during the primary nesting season, which could result in the mortality of eggs and/or young, since immature birds could not avoid active construction.

The dominant land use in the Project area is developed and agriculture. Impacts on migratory birds are most likely to occur in forested, wetland, and non-agricultural vegetative open lands. As previously mentioned only about 25 acres of upland and wetland forested would be affected by construction.

In Alabama, the primary nesting season extends from April 1 through July 15. If clearing activities would be required during the primary nesting season, Gulfstream would consult with the USFWS about additional conservation measure which could be utilized to limit impacts to migratory birds.

No bald eagle nests were identified near the Project area during surveys, with the nearest documented bald eagle nest located about 1.6 miles northwest of the Project area. If bald eagles or bald eagle nests are identified prior to or during construction, Gulfstream would comply with the 2007 USFWS National Bald Eagle Management Guidelines.

During operation of the Project, vegetative maintenance clearing would occur outside of the migratory bird nesting season in accordance with the FERC Plan. We

conclude that the Project would not have a significant impact on migratory birds. Additionally, the potential loss of nests and adult birds relocating to avoid construction is an impact of limited duration that would not result in a substantial or long-term change in migration patterns through the area nor constitute a population-level impact.

B.4.3 Special Status Species

Special status species are those species for which state or federal agencies provide an additional level of protection by law, regulation, or policy. Included in this category are federally listed species that are protected under the Endangered Species Act (ESA) or are considered as candidates for such listing by the USFWS, those species that are state-listed as threatened or endangered, and state species of special concern.

The Alabama Department of Conservation and Natural Resources (ADCNR) and FWCC are the regulatory authority for the conservation and preservation of rare and threatened plant and insect species, vertebrate, and other invertebrate protected species under state laws in Alabama and Florida, respectively. The Alabama Natural Heritage Program (ALNHP) and Florida Natural Areas Inventory (FNAI) produce an inventory of natural resources in Alabama and Florida and maintain a database of ecologically significant sites.

Gulfstream has consulted with the USFWS, ADCNR, ALNHP, FNAI, and FWCC to determine if federally listed or state-listed species (including federal candidate and/or federal and state species of special concern) or their designated critical habitats occur within the Project area, as further discussed below (ADCNR 2019, FWCC 2019, IUCN, et. al. 2004, NatureServe 2019, and USFWS 2019). State listed species with a determination of “no effect” or “may affect, not likely to adversely affect” are discussed only in appendix 2.

Federally Listed Species

Gulfstream, acting as the non-federal representative to FERC for the purposes of informal consultation, reviewed the USFWS Information, Planning, and Conservation (IPaC) System and requested official species lists. Gulfstream also requested known federal or state species records within the Project area from the ADCNR and ALNHP and consulted the FWCC and FNAI species databases. There were no species under the jurisdiction of the National Marine Fisheries Service identified.

Gulfstream also conducted surveys for these species. Federally listed species that may be affected by the Project are further discussed below. No critical habitat for any of these species was identified within the Project area. Appendix 2 describes the federally listed and state listed species that may occur in the Project area, their preferred habitat,

and our determination of effect. The USFWS Daphne Ecological Services provided comments on June 13, 2019 and identified species that could potentially occur within the Project area in Alabama. Potential habitat for the West Indian manatee and the Atlantic sturgeon was not identified within the Project areas, as the waterbodies crossed by the Project include intermittent and ephemeral streams with shallow water depths (less than three feet). Therefore, no impacts are expected on the West Indian manatee and the Atlantic sturgeon and they are not discussed further in this analysis. The USFWS South Florida Ecological Services Office provided on July 23, 2019 concurrence with a determination of “no effect” on listed species for the facilities in Florida.

While comments were received from the USFWS Daphne Ecological Services, concurrence that the Project is “not likely to adversely affect” any threatened or endangered species is pending.

Reptiles

The eastern indigo snake (*Drymarchon couperi*) is listed as threatened and known to inhabit flatwoods, tropical hammocks, dry glades and moist bogs in the southern extent of its range. Occupied sites are often near wetlands and frequently are in association with gopher tortoise (*Gopherus Polyphemus*) burrows, which may be utilized for refuge and egg laying. Potential habitat is present along the pipeline route and within the compressor stations in upland areas in association with gopher tortoise habitat. No gopher tortoise burrows were observed within the Project area. No individuals were identified during surveys.

Comments received from the USFWS Daphne Ecological Services recommended that a no snake kill policy be implemented due to the close resemblance of the black pinesnake and eastern indigo snake to other common black snakes at a distance. Gulfstream has agreed to implement a “no snake kill policy” during construction of the Project. Should a large black snake be found in the Project area during construction, Gulfstream would stop work and immediately contact the USFWS. Based on the results of the presence/absence surveys and the proposed avoidance measures, we have determined the construction and operation of the Project *may affect but is not likely to adversely affect* the eastern indigo snake.

The gopher tortoise is listed as threatened and primarily inhabits dry, deep sandy soils where the overhead canopy is open. Nesting occurs primarily from May to July. Numerous invertebrate and vertebrate species utilize gopher tortoise burrows to varying degrees. Potential habitat consisted of upland sandy areas along the pipeline route and within the compressor stations. Surveys of potential habitat areas found no individuals or burrows within Project area. Gulfstream indicated that if a tortoise enters the workspace,

construction activities would be halted, and the tortoise would be allowed to exit the workspace without harm. Based on the results of the presence/absence surveys and the proposed avoidance measures, we have determined the construction and operation of the Project *may affect but is not likely to adversely affect* the gopher tortoise.

The black pinesnake (*Pituophis melanoleucus lodingi*) is listed as federally endangered and inhabits xeric, fire-maintained longleaf pine forests with sandy, well-drained soils preferred. No individuals were identified during surveys. As mentioned above, Gulfstream would implement a “no snake kill policy” during construction of the Project. Should a large black snake be found in the Project area during construction, Gulfstream would stop work and immediately contact the USFWS. Based on the results of the presence/absence surveys and the proposed avoidance measures, we have determined the construction and operation of the Project *may affect but is not likely to adversely affect* the black pinesnake.

The Alabama red-bellied turtle (*Pseudemys alabamensis*) is listed as federally endangered and inhabits shallow vegetated backwaters of freshwater streams, rivers, bays, and bayous in or adjacent to Mobile Bay, Alabama. Nests are made on sand spoil banks, on natural levees, and along rivers. Habitat along the pipeline route consists of shallow wetlands and waterbodies, however, surveys of potential habitat indicated species absence. Comments received from the USFWS Daphne Ecological Services stated that the Alabama red-bellied turtle is not expected to be impacted by the Project. Therefore, we conclude that the Project *may affect, but is not likely to adversely affect* the Alabama red-bellied turtle.

Birds

The Mississippi sandhill crane (*Antigone canadensis pulla*) is listed as federally endangered and occurs in Baldwin County, Alabama in freshwater marshes, prairies, and pastures. Nests are made of mats of vegetation about two feet in diameter in shallow water. Potential habitat occurs in areas along the pipeline route and at/near CS 410. No individuals were identified during surveys.

The wood stork (*Mycteria Americana*) is federally endangered and typically forages in freshwater wetlands, swamps, ponds, and marshes with water depths around 4 to 12 inches. The wood stork is a highly colonial species usually nesting in large rookeries, located in in cypress swamps, flooded impoundments, mangroves, and other flooded areas. Potential habitat occurs in areas along the pipeline and at the compressor stations, however, surveys of potential habitat did not identify any active nest rookeries.

Gulfstream indicated it would implement the Gulfstream Plan and Procedures to minimize impacts on suitable habitat associated with Project construction. In addition, should a crane or stork enter the workspace, construction activities would be halted, and the bird would be allowed to exit the workspace without harm. Therefore, we have determined the construction and operation of the Project *may affect, but is not likely to adversely affect* the Mississippi sandhill crane or the wood stork.

In compliance with Section 7 of the ESA, we are requesting concurrence from the USFWS for the Project-related impacts on federally listed species. Because this consultation has not yet been completed, **we recommend that:**

- **Gulfstream should not begin construction activities until:**
 - a. **FERC staff receives comments from the USFWS regarding the proposed action;**
 - b. **FERC staff completes formal ESA consultation with the USFWS, if required; and**
 - c. **Gulfstream has received written notification from the Director of the Office of Energy Projects (OEP) that construction or use of mitigation may begin.**

B.5 Land Use, Recreation, and Visual Resources

B.5.1 Land Use

Land uses in the Project areas consist of agriculture, forested land, open land, developed land, wetland, and open water. Developed land is the dominate land use surrounding the Project facilities. In total, about 144 acres of land would be disturbed during construction and about 15 acres for permanent operations. The proposed Project would be located within the Alabama and Florida Coastal Zones overseen by the Alabama Coastal Area Management Program, administered by the ADEM and Florida Coastal Zone Management Program, administered by the FDEP. Federal consistency reviews are integrated into the review process conducted by ADEM and FDEP. Because Gulfstream has not yet received its consistency determination from ADEM and FDEP, we recommend that:

- **Prior to construction, Gulfstream should file with the Secretary of the Commission (Secretary) documentation of concurrence from the FDEP and ADEM that the Project is consistent with the states' CZMA provisions.**

The Project would not affect any federally-designated or recognized natural, recreational, or scenic areas, wildlife refuges, National Parks, state parks, conservation land, golf courses, public or private hunting areas, Indian reservations, wild and scenic rivers, trails, wilderness areas, or natural landmarks or other public lands.

Land use would be temporarily affected by construction activities. However, except for the modifications to CS 410 and the additional metering equipment at CS 420, as well as the newly maintained permanent pipeline right-of-way, the land would return to its previous use.

B.5.2 Public Land, Recreation, Other Designated or Special Use Areas

The Project does not cross and is not located within 0.25 miles of any National Park System Units, which include national parks, monuments, preserves, historic sites, historical parks, memorials, battlefields, military parks, cemeteries, recreation areas, seashores, lake shores, rivers, parkways trails, and other designations (National Park Service, 2019a; 2019b; 2019c).

One public recreation area is located approximately 700 feet south of the pipeline centerline near MP3.3, Ralston Park in the City of Bayou La Batre. The park is accessed from Coden Belt Road and would not be affected by Project construction activities.

We conclude that the construction and operation of the Project would not have an impact on recreational areas, other designated or special use lands including significantly affecting existing land use in the region.

B.5.3 Visual Resources

The Project would not be located within any federal, state, or locally designated scenic areas, such as National Wild and Scenic Rivers and scenic roads/highways. Impacts on visual and/or aesthetic resources would primarily occur during construction as a result of the presence of construction equipment. The majority of impacts on visual resources would be temporary; however, modification to existing aboveground facilities, including CS 410 and metering equipment at CS 420, and the maintained pipeline right-of-way would be permanent.

Consequently, impacts on visual and/or aesthetic resources are expected to be minimal. Minor amounts of artificial lighting would be necessary during construction and to a lesser extent during operation of CS 410 and CS 420. The localized nature of these lighting effects would result in negligible impacts on visual resources as a result of artificial lighting.

The metering station would be located at CS 420; therefore, the facility would be consistent with the surrounding landscape, which would minimize any visual or aesthetic impairment.

Therefore, we conclude that the construction and operation of the Project would not have a significant adverse impact on visual resources.

B.6 Cultural Resources

In addition to accounting for impacts on cultural resources under NEPA, Section 106 of the NHPA, as amended, requires FERC to consider the effects of its undertakings on historic properties listed, or eligible for listing on the National Register of Historic Places (NRHP),⁶ and to afford the Advisory Council on Historic Preservation an opportunity to comment. Gulfstream, as a non-federal party, is assisting FERC in meeting our obligations under Section 106 and its implementing regulations at 36 CFR 800.

B.6.1 Area of Potential Effects

The Area of Potential Effect (APE) is the “geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist” (36 CFR 800.16(d)). Gulfstream defined the Project APE as the proposed Project area, to include the limits of ground disturbance due to both permanent and temporary construction activities. The APE for subsurface resources includes all areas where ground disturbances are proposed along the Project, while the APE for aboveground locations includes those areas along with areas where land use may change, and any locations from which the Project may be visible. The proposed Project area includes locations in Mobile County, Alabama and Manatee County, Florida.

In Manatee County, Gulfstream’s survey area in support of the proposed CS 420 comprised a total area of approximately 20 acres. The majority of the survey area has been previously disturbed during construction of the existing facility. In addition to the area of direct effects, the APE for above-ground resources also includes areas from which the Project may be visible.

⁶ In accordance with 36 CFR 800.16(l)(1), a historic property is any prehistoric or historic district, site, building, structure, object, or property of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization, included in, or eligible for inclusion in, the NRHP. This term includes artifacts, records, and remains that are related to and located within such properties. Cultural resources are those properties that have not been evaluated for NRHP eligibility.

In Mobile County, Gulfstream surveyed a total of approximately 220 acres, including about 140 acres along the pipeline corridor and 80 acres within the area of Station 410. In addition to the area of direct effects, the APE for above-ground resources also includes areas from which the Project may be visible. The majority of the proposed Project facilities would be situated below ground, but Project facilities will also include above-ground construction, specifically at CS 410. At the request of the Alabama State Historic Preservation Office (SHPO), additional surveys covered a total of approximately 160 acres within Alabama, including about 65 acres of newly surveyed area and about 95 acres of reevaluated areas.

Due to the Project's location within existing rights-of-way and previously disturbed areas, the APE is sufficient to account for all the potential direct and indirect effects to historic properties by the proposed Project.

B.6.2 Cultural Resources Investigations

In an effort to identify historic properties in the Project APE and to account for any effects to those properties by the proposed Project, Gulfstream conducted cultural resources investigations which included background research, Phase I archaeological surveys, and historic architectural surveys.

Modifications to CS 420 would include limited above-ground construction, and as a result, potential visual effects were considered to any historic structures lying within 1,000 feet of the existing facility or otherwise within direct line of sight. The architectural field survey was limited to the exterior inspection of buildings and structures visible from the public right-of-way. The field survey included a visual assessment, site walkover, and photographic documentation of historic architectural resources in the Project APE. One historic structure was found in the indirect APE. It was determined that the structure is ineligible for NRHP listing due to a lack of significant historic associations and commonality of design (Stack et al., 2019: 27).

In Mobile County, a total of 211 shovel tests were attempted, 190 of which were excavated and 21 not dug due to water at the surface. Of the excavated shovel tests, a total of four were positive and yielded artifacts. Most of the positive shovel tests were encountered within the northwest corner of previously recorded site. As a result of the findings, all Project workspace within this area has been redesigned to fall north of the area and completely avoid the site. No historic standing structures or other historic resources that would be clearly visible from the proposed permanent right-of-way were noted during the survey (Ambrosino and Kreiser 2019: 45). Additional Phase I shovel testing in the area was requested by the Alabama SHPO On January 25, 2019. Gulfstream returned to the field from August 12-19, 2019. All of the shovel tests

excavated during the addendum survey were negative, and no archaeological materials were noted on the surface (Ambrosino and Searles 2019: 2).

On June 19, 2019 the Division of Historical Resources and State Historic Preservation Office for the state of Florida determined that “the proposed project will have no effect on historic properties listed, or eligible for listing, on the NRHP. Further, we find the submitted report complete and sufficient in accordance with Chapter 1A-46, Florida Administrative Code.” We agree.

In September 2019, Gulfstream recommended a *no historic properties affected* determination for the portion of the Project APE located in Alabama. On October 16, 2019, the Alabama SHPO responded with a determination “that project activities will have no effect on any cultural resources listed on or eligible for the National Register of Historic Places. Therefore, we concur with the proposed project activities.” We agree.

B.6.3 Tribal Consultation

Gulfstream contacted the following Native American tribes regarding the proposed Project: Alabama- Coushatta Tribe of Texas, Alabama-Quassarte Tribal Town, Chickasaw Nation, Choctaw Nation of Oklahoma, Coushatta Tribe of Louisiana, Eastern Band of Cherokee Indians, Eastern Shawnee Tribe of Oklahoma, Jena Band of Choctaw Indians, Mississippi Band of Choctaw Indians, Muscogee (Creek) Nation, and Poarch Band of Creek Indians. On November 15, 2018, Gulfstream provided to the tribes an initial consultation letter and maps. On November 16, 2018, the Chickasaw Nation sent an email indicating the project is outside their area of interest. On April 26, 2018 Gulfstream was informed that there are no known Choctaw sites within the Project area. The Jena Band of Choctaw Indians requested additional information on January 2, 2019. Gulfstream provided the Phase I report on May 23, 2019. On September 18, 2019 the Choctaw Nation of Oklahoma informed Gulfstream that the Project area lies in their area of historic interest and requested that work be stopped, and their office contacted in the event that prehistoric artifacts or human remains are encountered. The Choctaw Nation of Oklahoma has also requested that they are sent a copy of the EA.

B.6.4 Unanticipated Discoveries Plan

Gulfstream developed a Project-specific plan titled: *Plan and Procedures for the Unanticipated Discovery of Cultural Resources and Human Skeletal Remains*, which outlines the procedures to follow, in accordance with state and federal laws, in the event that unanticipated cultural resources or human remains are discovered during construction of the Project, including consultation with FERC, the SHPO, and tribes regarding discoveries. The plan was submitted to FERC and the Florida and Alabama

SHPOs. FERC requested minor revisions to the plan. Gulfstream provided a revised plan which we find acceptable.

B.6.5 Compliance with the National Historic Preservation Act

Gulfstream conducted cultural resources surveys and reviewed indirect effects on aboveground resources within the project APE. No traditional cultural properties or properties of religious or cultural importance to Indian tribes have been identified in the Project area. No eligible archaeological or architectural sites have been identified in the direct APE. Gulfstream recommended that the Project would have no effects on historic properties. Concurrence from the Florida SHPO was received on June 19, 2019. Concurrence from the Alabama SHPO was received on October 16, 2019.

FERC has completed its compliance requirements with Section 106 of the NHPA for the proposed Project.

B.7 Air Quality and Noise

B.7.1 Air Quality

Federal and state air quality standards are designed to protect human health. The U.S. Environmental Protection Agency (EPA) has developed National Ambient Air Quality Standards (NAAQS) for criteria air pollutants such as oxides of nitrogen (NO_x) and carbon monoxide (CO), sulfur dioxide (SO₂), and inhalable particulate matter (PM_{2.5} and PM₁₀). PM_{2.5} includes particles with an aerodynamic diameter less than or equal to 2.5 micrometers, and PM₁₀ includes particles with an aerodynamic diameter less than or equal to 10 micrometers. The NAAQS were set at levels the EPA believes are necessary to protect human health and welfare. Volatile organic compounds (VOC) and hazardous air pollutants (HAP) are also emitted during fossil fuel combustion.

Greenhouse Gases (GHG) produced by fossil-fuel combustion are carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O). GHGs status as a pollutant is not related to toxicity. GHGs are non-toxic and non-hazardous at normal ambient concentrations, and there are no applicable ambient standards or emission limits for GHG under the Clean Air Act. During construction and operation of the Projects, these GHGs would be emitted from construction equipment and fossil fuel combustion equipment like turbines and engines. Emissions of GHGs are typically expressed in terms of CO₂ equivalents (CO_{2e}).

The primary source of long-term air quality impacts would be the additional natural gas-fired compressor unit at CS 410. This includes operational emissions from

the proposed modifications to CS 410, including a new natural gas combustion turbine, pipeline natural gas venting and fugitive emissions from piping components.

The following section outlines the existing air quality; the federal regulations applicable under the Clean Air Act; the need for air quality permits; the magnitude and impact of construction emissions, and the magnitude and impact of operational emissions from the Project.

Existing Air Quality

Information detailing existing background levels of pollutants within the Project areas were found through the EPA's Nonattainment Areas for Criteria Pollutants website (EPA, 2019f) for the time period of 2015-2017. Background air quality monitoring in Florida is conducted by the FDEP and monitoring in Alabama is conducted by ADEM.

Air Quality Control Regions and Attainment Status

An Air Quality Control Region (AQCR), as defined in Section 107 of the Clean Air Act (CAA), is a federally-designated area in which federal ambient air quality standards must be satisfied. Each area is given an attainment status by the EPA for every criteria pollutant based on whether or not they satisfy the NAAQS. Areas that satisfy the NAAQS are "attainment areas." Areas that do not satisfy the NAAQS are "nonattainment areas." Areas for which insufficient data are available to determine attainment status are "unclassified areas." Areas formerly designated as nonattainment areas that have subsequently reached attainment are termed "maintenance areas."

Manatee County is located in the West Central Florida Intrastate AQCR, and Mobile County is located in the Mobile-Pensacola-Panama City-Southern Mississippi Interstate AQCR and the Southern Louisiana-Southeast Texas Interstate AQCR (EPA, 2019b). These areas are designated as attainment/unclassified for all pollutants.

Federal Air Quality Requirements

Federal statutes and regulations overseeing air pollution are located in the CAA (42 U.S.C 7401 et seq., as amended in 1977 and 1990), and 40 CFR Parts 50 through 99. Adding new sources of regulated air pollutants is subject to federal and state New Source Review (NSR) regulations. Should emissions surpass threshold levels, a NSR could result in emission restrictions on a facility to comply with the Prevention of Significant Deterioration (PSD) regulations. There are no federal or state air permitting requirements applicable to any Project components.

Title V of the CAA requires states to establish an air operating permit program. The Title V Operating Permit Program, as described in 40 CFR Part 70, requires major sources of air emissions to obtain a federal operating permit. The major source emissions thresholds for determining the need for a Title V operating permit are: 100 tons per year (tpy) of any regulated air pollutant, 10 tpy of any individual hazardous air pollutants (HAPs), or 25 tpy for all HAPs, and 100,000 tpy for GHG (expressed as CO₂e). Stricter major source thresholds apply for VOC and NO_x in ozone nonattainment areas, namely 50 tpy of VOC or NO_x in areas defined as serious, 25 tpy in areas defined as severe, and 10 tpy in areas classified as extreme.

As indicated in tables 9 and 10, potential emissions associated with modification to CS 410 are less than the major thresholds established under 40 CFR Part 70. Since CS 410 does not meet the definition of a major source, a Part 70 permit would not be required for this facility.

General Conformity

The general conformity regulations in 40 CFR Part 93, Subpart B, are ensure that federal actions that occur in nonattainment and maintenance areas do not interfere with a state's ability to reach or maintain compliance with NAAQS. As previously mentioned, the areas where Project construction would occur are in attainment/unclassifiable (considered attainment) for all criteria pollutants. Thus, a General Conformity analysis is not required.

Greenhouse Gas Reporting Rule

The Mandatory Reporting of Greenhouse Gases Rule requires reporting of GHG emissions from suppliers of fossil fuels and facilities that emit greater than or equal to 25,000 tonnes of CO₂e per year. For all GHG emissions from proposed sources at the compressor station equal to or greater than 25,000 tonnes, Gulfstream would be required to report these emissions to the EPA

Construction Emissions

Air quality impacts from construction of the Project would include combustion emissions from fossil-fueled on-road and off-road construction equipment and worker vehicles and fugitive dust from land clearing and vehicles traveling on unpaved and paved roads. All air quality impacts would generally be temporary and localized. Large earth-moving equipment and other vehicles that are powered by diesel or gasoline engines are sources of combustion-related emissions including GHGs (as CO₂e), NO_x, CO, VOC, SO₂, PM₁₀, PM_{2.5}, and small amounts of HAPs such as formaldehyde. Construction emissions from the Project are shown in table 9 below.

Table 9 Construction Emissions (tpy)									
County, State	Source	NO_x	CO	SO₂	VOC¹	PM₁₀	PM_{2.5}	Total HAPs	CO_{2e}
Mobile, Alabama	Station 410	10.0	27	0.03	1.8	9.4	2.8	0.5	3,523
Mobile, Alabama	36" Pipeline Replacement	23.1	24.1	0.06	2.5	20.1	7.4	0.8	7,449
Total Emissions for Mobile County		33.1	51	0.09	4.3	29.5	10.2	1.3	10,972
Manatee, Florida	Station 420	4.2	16.8	0.01	0.9	4.9	1.5	0.2	1,752
Total Construction Emissions		37.3	67.9	0.1	5.2	34.4	11.7	1.5	12,724
¹ VOC = Volatile Organic Compounds									

Emissions would occur over the duration of construction activity. As stated, impacts from construction equipment would be temporary and would not result in a significant impact on regional air quality or result in any violation of applicable ambient air quality standard. Potential impacts would be mitigated and minimized as follows.

State air quality regulations generally require reasonable precautions to prevent earth/soil from becoming airborne. Gulfstream would control fugitive dust emissions through their Fugitive Dust Emissions Control Plan during construction. This includes watering, state-approved dust suppressants, reduced vehicle speeds, temporary mulching and stabilization, tillage/surface roughening, wind breaks, and road and vehicle cleaning protocols. All areas temporarily disturbed by construction would be stabilized and restored to pre-construction conditions to the maximum extent practicable; therefore, fugitive dust emissions during construction of the Project would be minor, of short duration, and not significant.

Fugitive dust suppression measures would be proactively implemented as necessary to protect persons (general public and Project workforce) and property from air pollution and nuisances caused by the generation of fugitive dust emissions.

Vehicle emissions would be controlled through on-site management practices, in accordance with the applicable state requirements, such as state inspection and maintenance program rules. Gulfstream specifies the possible use of buses and vans to transport workers to work sites.

Gulfstream indicates that their construction equipment would be maintained and comply with local, state, and federal regulations, with equipment operated on an as-needed basis, mainly during daylight hours. Also, these construction emission would occur over the duration of the construction activities and would be emitted at different

locations and times. We conclude that impacts from construction activities would be short-term and localized, and would not result in a significant impact on air quality.

Operational Emissions

The primary emission source associated with the Project would be at CS 410, including the installation of the Solar Mars 100 16,000 hp natural gas-fired combustion turbine equipped with Solar's SoLoNO_x dry-low NO_x combustion technology, piping component modifications, natural gas venting activities and turbine start-up, shutdown and maintenance. VOCs and GHGs would also be emitted from activities such as compressor venting and purges as well as fugitive equipment leaks. Table 10 give the annual (tpy) operational emissions of criteria pollutants, GHGs, and HAPs that would occur from the Project.

Table 10 Operational Emissions (tpy)									
Station/Aboveground Facility	Criteria Pollutant						HAP		GHG
Pollutants	NO_x	CO	SO₂	VOC	PM₁₀	PM_{2.5}	Total	Single	CO₂e
CS 410									
New Solar Mars 100	34.1	34.6	2.3	4.0	4.5	4.5	2.2	2.0	80195.2
Turbine Start-up and Shutdown	0.23	4.5	-	0.56	-	-	-	-	184.1
Piping Component Fugitive Emissions	-	-	-	0.15	-	-	0.01	<0.01	249.5
Natural Gas Venting	-	-	-	0.34	-	-	<0.01	<0.01	1,753
Project Emission Increases	34.3	39.1	2.3	5.0	4.5	4.5	2.2	2.0	8,2381.7
Existing Permitted Emissions	610.8	325.2	4.0	259.3	43.7	43.7	6.8	4.1	55,7658.3
Total New Statewide Emissions	645.1	364.3	6.3	264.3	48.2	48.2	9.0	6.1	640,040.0
CS 420									
Metering Equipment Fugitive Emissions	-	-	2.3	0.01	-	4.5	<0.01	<0.01	32.8
Pipeline Emissions									
Natural Gas Venting	-	-	-	0.2	-	-	0.1	0.01	89.8

A PSD applicability analysis was conducted by Gulfstream to show that emissions related to the proposed modifications to CS 410 should not exceed PSD significant emission rate thresholds for all regulated pollutants, so it would not be a Title V major source. Moreover, emission increases related to metering equipment installation at CS 420 should not exceed thresholds, and natural gas venting and fugitive emissions from piping components should not be significant enough to warrant NSR permitting procedures from the ADEM.

The meter station at CS 420 would not result in any increase in operational emissions except for minor fugitive methane and VOC releases, which would be minor.

Air Quality Modeling

Air quality dispersion modeling was utilized to confirm that Project emissions would not negatively impact local air quality using the EPA-approved AERMOD (version 18081) in tandem with meteorological data from AERMET (version 18081). The purpose of the AERMOD model was to evaluate the cumulative air impacts of the proposed modifications, pipeline replacements, and metering equipment installation. The modeling suggests that the new sources of emissions for the Project would cause less than significant impact levels for each pollutant and would not exceed ambient standards. Thus, no adverse effects on local air quality or NAAQS violations would result.

Emissions of NO_x, CO, PM₁₀, PM_{2.5} and SO₂ were modeled for all existing and proposed components of CS 410. The results are shown below in Table 11 and show that the modeled pollutants would not prompt or exacerbate any violation of the NAAQS. Therefore, the operational emissions and subsequent ambient concentrations of regulated pollutants would not significantly affect local or regional air quality.

Table 11 Estimated Air Quality Impacts (µg/m³)					
Pollutant	Averaging Period¹	Modeled Concentration	Ambient Background²	Total Concentration	NAAQS
NO ₂	1-Hour	58.26	54.69	112.95	188
	Annual	2.73	8.08	10.80	100
CO	1-Hour	453.60	7,904.70	8,358.30	40,000
	8-Hour	269.78	2,176.66	2,446.44	10,000
SO ₂	1-Hour	2.28	30.39	32.67	196
	3-Hour	2.56	44.54	47.10	1300
PM ₁₀	24-Hour	3.06	62.00	65.06	150
PM _{2.5}	24-Hour	2.27	17.00	19.27	35
	Annual	0.20	7.73	7.93	12

¹ The SO₂ 24-hour and annual standards were revoked June 22, 2010 (75 FR 35530), and Mobile County was designated as unclassified for the 2010 SO₂ standard on April 9, 2018. These standards were not included in the air quality impacts analysis.

² Gulfstream used the US EPA's Outdoor Air Quality Database to acquire the ambient background data and converted all values to micrograms per cubic meter.

B.7.2 Noise

Regulatory Noise Requirements

During construction and operation of the Project, noise quality can be affected, and the magnitude and frequency of environmental noise can experience significant

changes daily, weekly, and seasonally, partly because of fluctuating weather conditions and the effects of seasonal vegetation. Two measures to relate the time-varying quality of environmental noise to its known effect on people are the 24-hour equivalent sound level (L_{eq}) and day-night sound level (L_{dn}). The L_{dn} is an energy average of the daytime L_{eq} (i.e., L_d) and nighttime L_{eq} (i.e., L_n) plus 10 decibel (dB). The A-weighted scale is used because human hearing is less sensitive to low and high frequencies than mid-range frequencies. The human ear's threshold of perception for noise change is considered to be 3 A-weighted decibel (dBA); 6 dBA is clearly noticeable to the human ear, and 10 dBA is perceived as a doubling of noise.

The EPA has determined that a L_{dn} of 55 dBA sufficiently safeguards the public from indoor and outdoor activity noise interference. FERC's regulations require that the noise attributable to any compressor station, compression added to an existing station, or any modification, upgrade or update of an existing station, must not exceed a L_{dn} of 55 dBA at noise sensitive areas (NSAs). These include residences, schools and daycare facilities, hospitals, long-term care facilities, places of worship, libraries, and parks and recreational areas especially known for their solitude and tranquility, such as certain wilderness areas. A L_{dn} of 55 dBA is equivalent to a continuous noise level of 48.6 dBA.

Compressor unit blowdowns (gas venting) can occur during initial construction/testing, operational startup and shutdown of the compressor or maintenance activities, and for emergency purposes. During construction and testing of the station, there is an increased frequency of blowdowns to ensure the facility would be operated reliably and safely. Blowdowns during compressor startup/shutdown would be infrequent as normal operation does not require venting and units are in pressurized state to facilitate operation. Occasional maintenance and startup/shutdown blowdowns can occur. To minimize the impact of blowdown noise from the maintenance activity, Gulfstream would utilize blowdown noise control devices to decrease the noise contribution and would conduct blowdowns during daylight hours. Full compressor station blowdowns would only occur during an emergency, are very infrequent and typically last less than 5 minutes.

Currently, there are no applicable state, county, and local noise regulations for pipeline and compressor station construction in areas affected by the Project. Therefore, noise mitigation during construction would be done to comply with the FERC sound level limit, which is used as the Project's design basis since it is considered to be attuned with residential land uses and sufficient to avert any unreasonable interference with comfort or repose.

Existing Conditions

The existing noise environment at CS 410 was analyzed. The area is sporadically populated with significant portions of wetlands and other industrial sites. The nearest NSAs are a residence on Rock Road, ~2400 feet west of the new compressor unit, (NSA 1) and residences located 3100 feet west-southwest (NSA 2) of the new unit.

Construction Noise

During work site preparation, construction, and equipment installation, short-term sound level increases could occur. The most significant noise levels would occur during site grading, clearing and grubbing, and trenching operations during pipeline construction and during compressor unit installation, primarily the internal combustion engines powering equipment. Pipeline construction would be short-term at any given area, and no single NSA would be exposed to excessive noise or vibration for long periods of time. Some “discrete activities” could need to be done for 24 hours for limited periods of time but would only need a minimal number of workers onsite as described previously in Section A.7 - Construction Schedule.

For aboveground facilities, only standard construction equipment would be used in the construction at CS 410 and the metering station at CS 420. Gulfstream estimated the construction noise at CS 410 and noise impacts are estimated to be less than 55 dBA and would not exceed existing noise levels from CS 410, which would have an insignificant effect on adjacent NSAs noise levels. Construction of the meter station at CS 420 would be low impact due to the minor amount of construction and short duration.

Operational Noise

Pipeline operation would not cause any lasting, permanent noise level increases to NSAs. Commissioning and future operation of the new compressor unit at CS 410 and the new meter station at CS 420 could cause lasting, permanent noise impacts on NSAs.

Compressor Station 410

Gulfstream would employ noise control measures to reduce noise. In addition to current compressor station equipment, Gulfstream provided the following list of recommended noise control measures and equipment sound specifications that would be implemented or may have to be implemented for the new compressor unit:

- turbine intake system with an in-duct silencer;
- turbine exhaust system with an adequate muffler;
- lube oil cooler;

- new filter/separators for aboveground piping and piping components;
- gas aftercooler;
- separate building with STC-36 sound rating doors and ventilation;
- unit suction and discharge valves and piping insulation; and
- unit blowdown silencer.

A baseline noise survey was conducted for CS 410 to identify nearby NSAs. An acoustical analysis was performed to predict the Station sound level contribution at the closest NSAs and to develop recommended noise control treatments for the Station equipment. Computer noise modeling predicts that the Station contributions at the NSAs would fall below the FERC limit of 55 dBA L_{dn} after the proposed modifications with the noise control treatments. Table 12 provides a summary of the current sound levels at the site, predicted sound level contribution of the proposed modifications at the nearby NSAs, and a prediction of the overall environmental sound levels after the installation of the new compressor unit equipment with proposed noise controls.

Table 12 Noise Impacts – CS 410						
Facility	NSAs (Residences)	Distance and Direction of NSAs	Current Ambient L_{dn} at Full Load (dBA)	Estimated Sound Level of New Unit L_{dn} (dBA)	Estimated Total Sound Level After Completion L_{dn} (dBA)	Potential Increase Above Ambient (dB)
Compressor Station 410	1	2400 feet W	48.7	42.7	49.7	1.0
	2	3100 feet WSW	49.5	39.8	49.9	0.4

*Current Station sound levels are based on sound data from the last known sound survey (2009)

Gulfstream plans to apply sound mitigation measures to ensure noise levels from Station 410 do not exceed the existing noise level. However, to ensure that new turbine-compressor unit and other proposed equipment does exceeds a L_{dn} of 55 dBA at any nearby NSAs, we recommend that:

- **Gulfstream should file a noise survey with the Secretary no later than 60 days after placing the authorized unit at CS 410 in service. If a full horsepower load condition noise survey is not possible, Gulfstream should file an interim survey at the maximum possible horsepower load and provide the full load survey within 6 months. If the noise attributable to the operation of all of the equipment at CS 410 under interim or full horsepower load conditions exceeds a L_{dn} of 55 dBA at any nearby NSAs, Gulfstream should file a report with the Secretary**

on what changes are needed and should install extra noise controls to comply with the level within 1 year of the in-service date. Gulfstream should confirm compliance with the above requirement by filing a second noise survey with the Secretary no later than 60 days after installation of additional noise controls.

Meter Station at Compressor Station 420

The meter station would be installed at CS 420 in Manatee County, Florida. The meter station has the potential to increase noise impacts on NSAs surrounding CS 420. Gulfstream did not provide a noise analysis of the combined meter station and CS 420. In its post-construction noise survey submitted for the Gulfstream Phase V Expansion Project (Docket no. CP10-4-000) submitted on May 27, 2011, Gulfstream identified the noise levels resulting from the CS 420 at the nearest NSAs.⁷ The nearest NSAs to CS 420 are 1,050 and 2,000 feet away and existing noise impacts at these NSAs are 51.7 dBA L_{dn} and 50.8 dBA L_{dn} , respectively.

Therefore, to ensure that the proposed meter station, combined with the existing new turbine-compressor unit and other proposed equipment does exceeds a L_{dn} of 55 dBA at any nearby NSAs, we recommend that:

- **Gulfstream should file a noise survey with the Secretary no later than 60 days after placing the meter station at CS 420 in service. If a full horsepower load condition noise survey is not possible, Gulfstream shall file an interim survey at the maximum possible horsepower load and provide the full load survey within 6 months. If the noise attributable to the operation of the meter station, including CS 420, at full load/flow exceeds an L_{dn} of 55 dBA at any nearby NSAs, Gulfstream should file a report with the Secretary on what changes are needed and install additional noise controls to meet that level within 1 year of the in-service date. Gulfstream should confirm compliance with the L_{dn} of 55 dBA requirement by filing a second noise survey with the Secretary no later than 60 days after it installs the additional noise controls.**

Based on the analyses conducted, mitigation measures proposed, and our recommendations, we conclude that the construction and operation of the Project would not result in significant noise impacts.

⁷ FERC Accession No 20110527-5162

B.8 Reliability and Safety

The transportation of natural gas by pipeline involves some risk to the public in the event of an accident and subsequent release of gas. The greatest hazard is a fire or explosion following a major pipeline rupture. Methane, the primary component of natural gas, is colorless, odorless, and tasteless. It is not toxic, but is classified as a simple asphyxiate, possessing a slight inhalation hazard. If breathed in high concentration, oxygen deficiency can result in serious injury or death.

The USDOT has the exclusive authority to promulgate federal safety standards used in the transportation of natural gas. The USDOT pipeline standards are published in Parts 190-199 of Title 49 of the CFR. Part 192 specifically addresses natural gas pipeline safety issues.

Section 157.14(a)(9)(vi) of the FERC's regulations require that an applicant certify that it would design, install, inspect, test, construct, operate, replace, and maintain the facility for which a Certificate is requested in accordance with federal safety standards and plans for maintenance and inspection. Alternatively, an applicant must certify that it has been granted a waiver of the requirements of the safety standards by the USDOT in accordance with Section 3(e) of the Natural Gas Pipeline Safety Act. Under a Memorandum of Understanding on Natural Gas Transportation Facilities (Memorandum) dated January 15, 1993, between the USDOT and the FERC, the FERC accepts this certification and does not impose additional safety standards. If the Commission becomes aware of an existing or potential safety problem, there is a provision in the Memorandum to promptly alert DOT. The Memorandum also provides for referring complaints and inquiries made by state and local governments and the general public involving safety matters related to pipelines under the Commission's jurisdiction.

The FERC also participates as a member of the USDOT's Technical Pipeline Safety Standards Committee which determines if proposed safety regulations are reasonable, feasible, and practicable.

The pipeline and aboveground facilities associated with the Project must be designed, constructed, operated, and maintained in accordance with the USDOT Minimum Federal Safety Standards in 49 CFR 192. The regulations are intended to ensure adequate protection for the public and to prevent natural gas facility accidents and failures. The USDOT specifies material selection and qualification; minimum design requirements; and protection from internal, external, and atmospheric corrosion.

As indicated previously, Gulfstream would increase the MAOP of a total of 59 miles of existing 36-inch diameter onshore and offshore pipeline on the discharge side of Gulfstream's existing CS 410, including the 4 miles to be replaced to accommodate

the pressure increase. The USDOT regulations under 49 CFR 192.553 detail uprate procedures. However, Gulfstream has indicated that they have applied for a special permit from PHMSA and the Bureau of Safety and Environmental Enforcement for the uprate and Gulfstream would be required to comply with the testing and operational conditions of those permits.

The USDOT also defines area classifications, based on population density in the vicinity of the pipeline, and specifies more rigorous safety requirements for populated areas. The class location unit is an area that extends 220 yards on either side of the centerline of any continuous 1-mile length of pipeline. The four area classifications are defined below:

- | | |
|---------|--|
| Class 1 | Location with 10 or fewer buildings intended for human occupancy. |
| Class 2 | Location with more than 10 but less than 46 buildings intended for human occupancy. |
| Class 3 | Location with 46 or more buildings intended for human occupancy or where the pipeline lies within 100 yards of any building, or small well-defined outside area occupied by 20 or more people on at least 5 days a week for 10 weeks in any 12-month period. |
| Class 4 | Location where buildings with four or more stories aboveground are prevalent. |

Class locations representing more populated areas require higher safety factors in pipeline design, testing, and operation. For instance, pipelines constructed on land in Class 1 locations must be installed with a minimum depth of cover of 30 inches in normal soil and 18 inches in consolidated rock. Class 2, 3, and 4 locations, as well as drainage ditches of public roads and railroad crossings, require a minimum cover of 36 inches in normal soil and 24 inches in consolidated rock.

Class locations also specify the maximum distance to a sectionalizing block valve (e.g., 10.0 miles in Class 1, 7.5 miles in Class 2, 4.0 miles in Class 3, and 2.5 miles in Class 4). Pipe wall thickness and pipeline design pressures; hydrostatic test pressures; MAOP; inspection and testing of welds; and frequency of pipeline patrols and leak surveys must also conform to higher standards in more populated areas.

The USDOT has published rules that define high consequence areas (HCAs) where a gas pipeline accident could do considerable harm to people and their property and requires an integrity management program to minimize the potential for an accident. This definition satisfies, in part, the Congressional mandate for USDOT to prescribe

standards that establish criteria for identifying each gas pipeline facility in a high-density population area.

The HCAs may be defined in one of two ways. In the first method an HCA includes:

- current class 3 and 4 locations,
- any area in Class 1 or 2 where the potential impact radius⁸ is greater than 660 feet and there are 20 or more buildings intended for human occupancy within the potential impact circle⁹, or
- any area in Class 1 or 2 where the potential impact circle includes an identified site.

An identified site is an outside area or open structure that is occupied by 20 or more persons on at least 50 days in any 12-month period; a building that is occupied by 20 or more persons on at least 5 days a week for any 10 weeks in any 12-month period; or a facility that is occupied by persons who are confined, are of impaired mobility, or would be difficult to evacuate.

In the second method, an HCA includes any area within a potential impact circle which contains:

- 20 or more buildings intended for human occupancy, or
- an identified site.

Once a pipeline operator has determined the HCAs along its pipeline, it must apply the elements of its integrity management program to those segments of the pipeline within HCAs. The USDOT regulations specify the requirements for the integrity management plan at section 192.911. The HCAs have been determined based on the relationship of the pipeline centerline to other nearby structures and identified sites. Gulfstream has identified approximately 1 mile that would be classified as an HCA. Pipe class are shown in table 13 below.

⁸ The potential impact radius is calculated as the product of 0.69 and the square root of the MAOP of the pipeline in pounds per square inch (gauge) multiplied by the square of the pipeline diameter in inches.

⁹ The potential impact circle is a circle of radius equal to the potential impact radius.

Table 13				
High Consequence Areas for the Project				
MP		Pipe Class	High Consequence Area	Reason for High Consequence Area Determination
Begin	End			
2.7	3.4	2	Chapel	Within Potential Impact Radius
3.4	3.5	1	Ralston Park (Recreation Area)	Within Potential Impact Radius
3.99	4.02	1	Master Boat Builders & Southern Crabshell Co.	Within Potential Impact Radius

The operator must also establish a continuing education program to enable customers, the public, government officials, and those engaged in excavation activities to recognize a gas pipeline emergency and report it to appropriate public officials.

Facilities associated with Gulfstream's Project must be designed, constructed, operated, and maintained in accordance with USDOT standards, including the provisions for written emergency plans and emergency shutdowns. Gulfstream would provide the appropriate training to local emergency service personnel before the facilities are placed in service.

Gulfstream's facilities and pipeline construction and operation would represent a minimal increase in risk to the public and we are confident that with the options available in the detailed design of Gulfstream's facilities, that they would be constructed and operated safely.

On October 1, 2019 the PHMSA issued new regulations modifying and expanding the standard pipeline safety standards under 49 CFR Parts 191 and 192. These regulations, in part, established: new standards for in-line inspections; requirements for newly established moderate consequence areas (MCA); explicitly requires consideration of seismicity and geotechnical risks in its integrity management plan for the pipeline; new regulations on pipeline patrol frequency HCAs, MCAs and grandfathered pipelines; a policy to reconfirm MAOP for certain pipelines; installation of pressure relief for pig launcher/receivers, and report exceedances of MAOP to PHMSA. These regulations go into effect on July 1, 2020.

B.9 Cumulative Impacts

The CEQ regulations for implementing NEPA, at 40 CFR 1508.7, define cumulative impacts as: "impacts on the environment which result from incremental impact of the [proposed] action when added to other past, present, and reasonably foreseeable future actions...". In accordance with NEPA and Commission policies (including relevant guidance from the CEQ), we evaluated the potential for cumulative

impacts on the environment. Our cumulative impacts analysis considers actions that impact environmental resources affected by the proposed action, within all or part of the Project area affected by the proposed action, and within all or part of the time span of the impacts resulting from the proposed action. Appendix 1 identifies the projects we identified within the geographic scope.

The current environment of the Project area reflects a mixture of natural processes and human influences across a range of conditions. Current conditions have been affected by innumerable activities over thousands of years. The CEQ issued an interpretive memorandum on June 24, 2005, regarding analysis of past actions, which stated: “agencies can conduct an adequate cumulative effects analysis by focusing on the current aggregate effects of past actions without delving into the historical details of individual past actions.” In order to understand the contribution of past actions to the cumulative effects of the proposed action, this analysis relies on current environmental conditions as a proxy for the impacts of past actions. This is because existing conditions reflect the aggregate impact of all prior human actions and natural events that have affected the environment and might contribute to cumulative effects. In this analysis, we generally consider the impacts of past projects within the resource-specific geographic scopes as part of the affected environment (environmental baseline), which was described under the specific resources discussed throughout section B. However, this analysis does include the present effects of past actions that are relevant and useful.

In accordance with the CEQ regulations for implementing NEPA, we identified other actions located in the vicinity of the Project and evaluated the potential for a cumulative impact on the environment. This analysis evaluates other actions that impact resources also affected by the Project, within the resource-specific geographic scopes described below. Actions located outside the geographic scopes are generally not evaluated because their potential to contribute to a cumulative impact diminishes with increasing distance from the Project.

As described throughout this EA, the Project would temporarily and permanently impact the environment. We found that most impacts would be temporary and short-term during construction and restoration of the Project. Permanent impacts would occur at aboveground facilities and permanent right-of-way. However, we conclude that with the mitigation measures proposed by Gulfstream or imposed as staff recommended conditions, or by other agency permits, impacts would not be significant.

Our review of the estimated Project impacts concludes that nearly all construction impacts would be contained within the right-of-way and extra workspaces. Erosion control measures included in Gulfstream’s Plan, for example, would keep disturbed soils within work areas. Consequently, most of the construction impacts would be temporary

and localized and are not expected to contribute to regional cumulative impacts. Exceptions exist where the impacts may migrate outside of designated work areas.

In general, the area of effect of a proposed project would depend on the scope and size of the project (i.e., larger projects would impact a larger area; smaller projects, a smaller area). Furthermore, the geographic scope may also differ for each resource (e.g., for waterbody and wetland impacts, the area of effect may be a particular watershed; whereas, for air emissions, the area of impact would extend to the surrounding area around the facility).

A basic assumption of the cumulative impacts analysis is that if there are no Project-related impacts for a particular resource, there would be no cumulative impacts for that resource. Based on the analysis presented in this EA, along with the temporal and geographic scope of the Project and surrounding projects, we have eliminated from further discussion under cumulative impacts the following resource categories: groundwater, fisheries, geologic resources, soils, and cultural resources, and operational noise impacts.

We determined that groundwater impacts would be highly localized and so would not contribute to cumulative impacts. We determined that because all affected streams are intermittent or ephemeral, that impacts on fisheries would be temporary or not occur at all. Impacts on geology would be localized and are not expected to be additive with any other projects. Impacts on soil resources would be localized to the immediate work area and are not expected to be additive with any other projects. Cultural resources would be localized and are not expected to be additive with any other projects. We also eliminated cumulative impacts for operational noise because no other projects were identified that would contribute cumulative operational noise impacts.

Geographic Scopes

There are 7 other proposed or active projects in Alabama that could overlap with certain resources near CS 410 and the pipeline. They include transportation/road projects, private development, dredging, and a coastal restoration project. There is only one other project in Florida that we identified that could overlap with resources affected by the CS 420 meter station; the Big Bend Modernization Project. We looked at 8 projects that are within the geographic scope. Appendix 1 lists the past, present, and reasonably foreseeable future projects identified within the geographic scope of the Project, and identifies the resources potentially subject to cumulative impacts, to the extent that specific impact information is available. Table 14 lists the resource-specific geographic scopes used to assess cumulative impacts, based on the impacts of the Project as identified and described in the EA and consistent with CEQ guidance.

<p>Table 14</p> <p>Geographic Scopes for Project</p>		
Resource	Geographic Scope	Rationale
Water Resources and Wetlands, Vegetation, Wildlife	Watershed Boundary (HUC 12)	The geographic scope used to assess cumulative impacts on water resources, wetlands, vegetation, and wildlife includes the HUC 12 watershed within which the Project facilities would be located and may be affected by the proposed Project activities.
Land Use, Recreation, and Aesthetics	1-mile radius	Impacts on land uses, recreation, and aesthetics generally occur within and adjacent to project work areas. Based on the proposed Project size and scope and the generally uniform character of the surrounding area, a 1-mile radius is anticipated to account for impacts on land uses, recreational areas, and viewsheds that would be experienced by people in the flat to gently undulating terrain in the Project vicinity.
Air Quality - Operations ¹	50 kilometers /approx. 31.1 miles (air quality – operations)	We adopted the distance used by the EPA for cumulative modeling of large PSD sources during permitting (40 CFR 51, appendix W) which is a 50-kilometer radius for a qualitative analysis.
Air Quality – Construction	0.25 mile (air quality – construction)	Due to the limited amount of emissions generated by construction equipment, the geographic scope used to assess potential cumulative impacts on air from construction activities was set at 0.25 miles.
Noise Construction	0.25 mile from pipeline and aboveground facilities.	Noise impacts are highly localized and attenuate quickly as the distance from the noise source increases. Noise impacts from aboveground facilities are evaluated at all noise sensitive areas within 0.25 mile.
¹ We note that GHGs do not have a localized geographic scope. GHG emissions from the Project combine with projects all over the planet to increase CO ₂ , methane and other GHG concentrations in the atmosphere.		

We also considered temporal relationships or a temporal scope when analyzing the Project's potential cumulative impacts.

Waterbodies and Wetlands

The Nature Conservancy's Restoration of Aquatic Habitats project would be within the same Hydrologic Unit Code (HUC) 12 watershed as the proposed pipeline and CS 410. No projects were identified within the same HUC 12 watershed as other Project components. The Restoration of Aquatic Habitats project would consist of the construction of riprap breakwaters, dredging of access channels, and placement of 384,285 cubic yards of sediment to create approximately 40 acres of marsh. A parking lot would also be constructed in an upland area. This project could result in impacts to

waterbodies and wetlands; however the purpose is to restore and enhance marsh and tidal creek habitat. The Restoration of Aquatic Habitats project would also be required to obtain a USACE Section 404 Permit, and mitigate for wetland loss or conversion; it is not expected to result in a net loss of wetland function or value or impacts on surface water quality. Based on the impact data and mitigation available and the scope of the Project, it is not anticipated that the accumulation of impacts would contribute significantly to cumulative impacts on wetland and waterbody resources.

Vegetation and Wildlife

We also used the HUC 12 watershed as the geographic scope for impacts on vegetation and wildlife. The construction activities associated with removal of vegetation and the potential for the establishment of invasive plant species occurring during the same timeframe and area can result in cumulative impacts. Changes in the vegetation can impact wildlife habitat and cause other secondary effects such as forest fragmentation.

The facilities associated with the Project involve construction adjacent to existing pipeline facilities, which minimizes the effects of vegetation clearing, particularly forest clearing and fragmentation. Similarly, Restoration of Aquatic Habitats project would be required to implement mitigation measures to minimize the potential for erosion, revegetate temporarily disturbed areas, and control the spread of noxious weeds. The USACE has determined that this project may affect, but is not likely to adversely affect the Gulf Sturgeon and the Florida Manatee; these impacts would be addressed in permits or clearances issued for the project and appropriate mitigation to minimize these impacts would be implemented as needed. The proposed Project would not affect these same species; ESA consultation is ongoing. Given the minor, temporary impacts on vegetation and wildlife from the Project, and the lack of significant projects in the area, we conclude that the Project would not contribute significant cumulative impacts on vegetation or wildlife.

Land Use, Recreation, and Aesthetics

Impacts on land use, recreation, and aesthetics generally occur within and adjacent to the areas in which Project activities occur. The geographic scope for land use, recreation, and aesthetics is defined as the 1-mile radius surrounding the Project footprint. The rationale is that the surrounding area is generally of uniform character and therefore the 1-mile radius is adequate to account for impacts on land uses, recreational areas, and viewsheds that would be experienced by people in the flat to gently undulating terrain.

Construction and operation of the Project has the potential to impact land use and visual resources. As discussed in Section B.5 of the EA, the Project would not affect

public land or recreation areas; therefore, the construction and operation of the Project would not contribute to cumulative impacts on public land or recreation areas.

The majority of long-term or permanent impacts on land use, recreation, and aesthetics are associated with the construction of new aboveground structures (e.g., the new compressor unit and meter station). The overall cumulative impact on visual resources associated with the construction and operation of the Project would be minor due to the existing industrial nature where the new compressor unit and meter station would be located. We identified no other projects that would be within 1 mile of the Project components. Therefore, we conclude there would be no cumulative impacts on land use, recreation, and aesthetics.

Air Quality

An increase in operational emissions resulting from the Project would occur at the proposed CS 410 facility. The proposed meter station at CS 420 would not have any new operational emission sources, aside from fugitive releases. We reviewed present and reasonably foreseeable future projects/actions occurring within 50 km of CS 410 and CS 420 (appendix 1) and identified several transportation projects, a dredging project, and a commercial development within the scope of CS 410, and The Big Bend Modernization Project within the scope of CS 420.

The combined effect of multiple construction projects occurring in the same area and timeframe could temporarily add to the ongoing air quality effects of existing activities; however, no other projects are within the geographic scope for air quality that would be cumulative with the construction emissions from the proposed Project (e.g. within 0.25 mile of CS 410 or CS 420). Similarly, the projects identified in the vicinity of CS 410 are transportation and commercial developments that would not include operational emission sources. The emissions from the meter station at CS 420 are negligible and would not cause any additional cumulative impact with projects such as the Big Bend Modernization Project that would be 13.5 miles northeast of CS 420. We conclude after review of the past, present, and reasonably foreseeable future projects/actions occurring within 50 km of CS 410 and CS 420 listed in appendix 1, there would be no significant cumulative impact on air quality in the area.

To account for combustion impacts from the identified end-use customer for this Project, we looked at the facility to which the gas would be delivered. As identified in section A.9 and appendix 1, the gas would be delivered to TECO's Big Bend Power Station. As part of TECO's Big Bend Modernization Project, 1 of the 4 power generation coal-fired units would be decommissioned, and another would be repowered as a natural gas-fired (from coal-fired) two-on-one combined-cycle generating unit. Total annual

emissions of GHG were estimated for the end-use combustion based on the total capacity from the proposed Project (e.g., 78,000 Dth/d), below in table 15.

Table 15	
Total Projected GHG Emissions from End-Use Combustion	
Project	GHG Emissions (million metric tonnes CO₂ per year)
Big Bend Power Station, Hillsborough County, Florida	1.509
Source EPA, 2017b	

The calculation in table 15 represents an upper bound of emissions because it assumes the total maximum capacity is transported and utilized 365 days per year. This figure represents a 0.66 percent increase in CO₂ emissions from fossil fuel combustion in the state of Florida.¹⁰ At the national level, the downstream GHG emissions represent a 0.03 percent increase.¹¹

Noise

The Project could contribute to cumulative noise impacts. However, the impact of noise is highly localized and attenuates quickly as the distance from the noise source increases. We have not identified any other projects that could cumulatively add to noise impacts during construction with 0.25 mile. In addition, we have not identified any other facility that could affect noise at NSAs within 1 mile of CS 410 or the meter station at CS 420. The exception is the of operational noise of CS 420 combining with the proposed meter station. We have included a recommendation to ensure noise does not become significant. Therefore, we conclude that cumulative noise impacts would not be significant.

Conclusion

We conclude that the Project would not significantly contribute to cumulative impacts on any resource. Most of the impacts from the Project would be short-term and occur within or immediately adjacent to the construction workspace. In general, the small footprint of the Project, when considered with the other projects in the geographic and temporal scope of the Project, would not add significantly to any potential cumulative effects on resources affected by the Project.

¹⁰ EIA. 2019. State Carbon Dioxide Emissions Data 1980-2017.
<https://www.eia.gov/environment/emissions/state/>.

¹¹ EPA. 2019. Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990-2017.
<https://www.epa.gov/sites/production/files/2019-04/documents/us-ghg-inventory-2019-main-text.pdf>

SECTION C – ALTERNATIVES

In accordance with NEPA and Commission policy, we considered and evaluated alternatives to the proposed action, including the no-action alternative, system alternatives, facility alternatives, and alternative facility locations and pipeline alignments. These alternatives were evaluated using a specific set of criteria. The evaluation criteria applied to each alternative include a determination of whether the alternative:

- meets the objective of the proposed Project;
- is technically and economically feasible and practical; and
- offers a significant environmental advantage over the proposed Project.

The alternatives were reviewed against the evaluation criteria in the sequence presented above. If the alternative would not meet the Project's objective, or is not feasible, we did not compare environmental information to determine if the third evaluation criterion was satisfied.

The first consideration for including an alternative in our analysis is whether or not it could satisfy the stated purpose of the project. An alternative that cannot achieve the purpose for the project cannot be considered as an acceptable replacement for the project. All of the alternatives considered here, except the No Action Alternative, are able to meet the Project purpose stated in section A of this EA.

Not all conceivable alternatives are technically and economically feasible and practical. Technically feasible alternatives, with exceptions, would generally involve the use of common pipeline construction methods. Economically practical alternatives would result in an action that generally maintains the price competitive nature of the proposed action. An alternative that would involve the use of a new, unique, or experimental construction method(s) may be technically feasible, but not economically practical. Generally, we do not consider the cost of an alternative as a critical factor unless the added cost to design, permit, and construct the alternative would render the project economically impractical.

To determine if an alternative is practicable and would provide a significant environmental advantage over the proposed action, we compare the impacts of the alternative and the proposed action (e.g., number of wetlands/waterbodies affected by the alternative and number of wetlands/waterbodies affected by the proposed action). To ensure consistent environmental comparisons and to normalize the comparison of resources, we generally use “desktop” sources of information (e.g., publicly available data, aerial imagery) and assume the same construction and operation right-of-way widths and general workspace requirements. We evaluate data collected in the field if

surveys were completed for both the proposed action and the corresponding alternative. Our environmental comparison uses common factors such as (but not limited to) total amount, length/distance, and acres affected of a resource. Furthermore, this analysis considers impacts on both the natural and human environments.

Where appropriate and available, we also use site-specific information. In comparing the impact between resources, we also consider the magnitude of the impact anticipated on each resource. As applicable, we assess impacts on resources that are not common to the alternative and the proposed action. Our determinations attempt to balance the overall impacts (and other relevant considerations) of the alternative(s) and the proposed action. Recognizing the often-competing interests driving alternatives and the differing nature of impacts resulting from an alternative (i.e., impacts on the natural environment versus impacts on the human environment), we also consider other factors that are relevant to a particular alternative or discount or eliminate factors that are not relevant or may have less weight or significance. Ultimately, an alternative that is environmentally comparable or results in minor advantages in terms of environmental impact would not compel us to shift the impacts from the current set of landowners to a new set of landowners.

The factors considered for an aboveground facility alternative are different than those considered for a pipeline route alternative because an aboveground facility is a fixed location rather than a linear facility which is routed between two points. In evaluating aboveground facility locations, we consider the amount of available land, current land use, adjacent land use, location accessibility, engineering requirements, stakeholder comments, and impacts on the natural and human environments.

One of the goals of an alternatives analysis is to identify alternatives that avoid significant impacts. In section B, we evaluated each environmental resource potentially affected by the Project and concluded that constructing and operating the Project would not significantly impact these resources. Consistent with our conclusions, the value gained by further reducing the (not significant) impacts of the Project when considered against the cost of relocating the route/facility to a new set of landowners was also factored into our evaluation.

C.1 No Action Alternative

Implementing the no-action Alternative would result in the proposed Project not being constructed. Not constructing the Project would avoid affecting the environment as described previously in this document. However, the objective of the Project would not be met and the identified demand for natural gas would not be satisfied. If the Project were not constructed, Gulfstream would not be able to meet the Project need to transport an additional 78,000 Dekatherms per day of natural gas to meet contractual obligations.

The TECO Big Bend Power Station would likely seek an alternative source of natural gas. Infrastructure associated with the alternative would require impacts on environmental resources that could result in equal or greater environmental impacts than the proposed Project. The proposed Project primarily involves the expansion and modifications of existing facilities. Therefore, we conclude that the no-action alternative would not provide a significant environmental advantage over the Project and would not meet the Project's objectives.

C.2 System Alternatives

System alternatives are alternatives to the proposed action that would make use of other existing, modified, or proposed natural gas systems that would meet the stated objective of the proposed Project. System alternatives involve the transportation of the equivalent amount of additional natural gas volumes by the expansion of existing facility/pipeline systems. The objective of identifying and evaluating system alternatives is to determine if potential environmental impacts could be avoided or reduced by using a different pipeline system or configuration. A viable system alternative would make it unnecessary to construct Gulfstream's Project; although, modifications or additions to its system or another system may be required. Although modifications or additions to existing systems could result in environmental impacts, this impact may be less, the same, or more than the impact associated with the Project. We identified one system alternative, which we discuss below.

The looping alternative would require a total of approximately:

- 4.0 miles of 36-inch-diameter pipeline loop from MP 0.0 to MP 4.0 in Mobile County, and
- 55.0 miles of 36-inch-diameter pipeline loop from MP 4.0 to near MP 59.0 in Mobile County and the Gulf of Mexico.

The onshore portion of the loop would begin in Mobile County at CS 410 and would continue to MP 4.0. The offshore portion of the loop line would begin at MP 4.0 in Mobile County, approximately 400-feet from the shoreline, enter the Gulf of Mexico in Alabama State waters, and continue into Federal waters of the Gulf of Mexico to near MP 59. The shoreline crossing of the loop line would be installed via horizontal direction drill and is considered a part of the offshore pipeline for evaluation purposes.

Regardless of the resources affected, it is clear that 59 miles of construction would have more impacts than constructing four miles, as proposed. However, operation of the alternative would eliminate the air quality impacts of the Project. Construction activities in coastal and nearshore waters have the potential to impact sensitive coastal resources,

such as submerged aquatic vegetation, oyster reefs, and live bottom, all of which provide essential fish habitat to a multitude of fish species in the Gulf of Mexico. These activities have the potential to reduce water quality and clarity and degrade habitat.

In balancing the greater offshore impacts against the air quality impacts, we conclude that, consistent with our analysis in section B, that the air impacts are not significant and that the loop alternative would not provide a significant environmental preferred advantage and was not evaluated further.

C.3 Aboveground Facility Site Alternatives

The proposed action includes construction and operation of one 16,000 hp compressor unit at Gulfstream's existing CS 410 and the meter station within the footprint of CS 420.

Because the proposed action occurs entirely within a developed sites, we did not identify any aboveground facility site alternatives that would provide a significant environmental advantage over the proposed Project. Further, during the scoping period no aboveground facility site alternatives were requested by stakeholders. Therefore, we identified no alternatives to the proposed modification to existing CS 410 or the meter station at CS 420 that could satisfy our evaluation criteria.

C.4 Pipeline Route Alternatives

Route alternatives are alternatives that differ from the proposed route and may be major and deviate from the proposed route for an extended distance or minor and deviate from the proposed route for a short distance. The proposed pipeline loop is primarily collocated within and adjacent to Gulfstream's existing pipeline right-of-way. Any newly identified alternative pipeline route would involve development of new right-of-way that may not offer the benefits of using existing right-of-way for workspace that the Project does.

Since the Project is collocated within existing rights-of-way, we did not identify any routing alternatives other than those incorporated by Gulfstream that could offer a significant environmental advantage over the Project. In addition, we did not receive any stakeholder comments requesting that we consider any pipeline route alternatives other than those incorporated by Gulfstream.

Conclusion

After reviewing the alternatives to the proposed Project, we conclude that none of the system alternatives, above ground facility alternatives and other site alternatives would satisfy the evaluation criteria. In summary, we have determined that the proposed action, as modified by our recommended mitigation measures, is the preferred alternative that can meet the Project's objectives.

SECTION D – STAFF’S CONCLUSIONS AND RECOMMENDATIONS

Based on the analysis in this EA, we have determined that if Gulfstream constructs and operates the proposed facilities in accordance with its application and supplements, and the staff’s recommended mitigation measures below, approval of the Project would not constitute a major federal action significantly affecting the quality of the human environment. We recommend that the Commission Order contain a finding of no significant impact and include the measures listed below as conditions in any authorization the Commission may issue to Gulfstream.

1. Gulfstream shall follow the construction procedures and mitigation measures described in its application and supplements (including responses to staff data requests) and as identified in the EA, unless modified by the Order. Gulfstream must:
 - a. request any modification to these procedures, measures, or conditions in a filing with the Secretary;
 - b. justify each modification relative to site-specific conditions;
 - c. explain how that modification provides an equal or greater level of environmental protection than the original measure; and
 - d. receive approval in writing from the Director of OEP **before using that modification.**
2. The Director of OEP, or the Director’s designee, has delegated authority to address any requests for approvals or authorizations necessary to carry out the conditions of the Order, and take whatever steps are necessary to ensure the protection of environmental resources during abandonment activities and construction and operation of the Project. This authority shall allow:
 - a. the modification of conditions of the Order;
 - b. stop-work authority; and
 - c. the imposition of any additional measures deemed necessary to ensure continued compliance with the intent of the conditions of the Order as well as the avoidance or mitigation of unforeseen adverse environmental impact resulting from Project abandonment, construction, and operation activities.
3. **Prior to any construction**, Gulfstream shall file an affirmative statement with the Secretary, certified by a senior company official, that all company personnel, environmental inspectors (EIs), and contractor personnel would be informed of the EI’s authority and have been or would be trained on the implementation of the environmental mitigation measures appropriate to their jobs **before** becoming involved with construction and restoration activities.

4. The authorized facility locations shall be as shown in the EA, as supplemented by filed alignment sheets. **As soon as they are available, and before the start of construction**, Gulfstream shall file with the Secretary any revised detailed survey maps/sheets at a scale not smaller than 1:6,000 with station positions for the facilities approved by the Order. All requests for modifications of environmental conditions of the Order or site-specific clearances must be written and must reference locations designated on these alignment maps/sheets.

Gulfstream's exercise of eminent domain authority granted under Natural Gas Act (NGA) section 7(h) in any condemnation proceedings related to the Order must be consistent with these authorized facilities and locations. Gulfstream's right of eminent domain granted under NGA section 7(h) does not authorize it to increase the size of its natural gas pipeline facilities to accommodate future needs or to acquire a right-of-way for a pipeline to transport a commodity other than natural gas.

5. Gulfstream shall file with the Secretary detailed alignment maps/sheets and aerial photographs at a scale not smaller than 1:6,000 identifying all route realignments or facility relocations, and staging areas, pipe storage yards, new access roads, and other areas that would be used or disturbed and have not been previously identified in filings with the Secretary. Approval for each of these areas must be explicitly requested in writing. For each area, the request must include a description of the existing land use/cover type, and documentation of landowner approval, whether any cultural resources or federally listed threatened or endangered species would be affected, and whether any other environmentally sensitive areas are within or abutting the area. All areas shall be clearly identified on the maps/sheets/aerial photographs. Each area must be approved in writing by the Director of the OEP **before construction in or near that area**.

This requirement does not apply to extra workspaces allowed by the Commission's Plan and/or minor field realignments per landowner needs and requirements which do not affect other landowners or sensitive environmental areas such as wetlands.

Examples of alterations requiring approval include all route realignments and facility location changes resulting from:

- a. implementation of cultural resource mitigation measures;
- b. implementation of endangered, threatened, or special concern species mitigation measures;
- c. recommendations by state regulatory authorities; and

- d. agreements with individual's landowners that affect other landowners or could affect sensitive environmental areas.

6. **Within 60 days of the acceptance of this authorization and before construction begins**, Gulfstream shall file an Implementation Plan with the Secretary for review and written approval by the Director of the OEP. Gulfstream must file revisions to the plan as schedules change. The plan shall identify:

- a. how Gulfstream would implement the construction procedures and mitigation measures described in its application and supplements (including responses to staff data requests), identified in the EA, and required by the Order;
- b. how Gulfstream would incorporate these requirements into the contract bid documents, construction contracts (especially penalty clauses and specifications), and construction drawings so that the mitigation required at each site is clear to onsite construction and inspection personnel;
- c. the number of EIs assigned per spread, and how the company would ensure that sufficient personnel are available to implement the environmental mitigation;
- d. company personnel, including EIs and contractors, who would receive copies of the appropriate material;
- e. the location and dates of the environmental compliance training and instruction Gulfstream would give to all personnel involved with construction and restoration (initial and refresher training as the project progresses and personnel change);
- f. the company personnel (if known) and specific portion of Gulfstream's organizations having responsibility for compliance;
- g. the procedures (including use of contract penalties) Gulfstream would follow if noncompliance occurs; and
- h. for each discrete facility, a Gantt or PERT chart (or similar project scheduling diagram), and dates for:
 - (1) the completion of all required surveys and reports;
 - (2) the environmental compliance training of onsite personnel;
 - (3) the start of construction; and
 - (4) the start and completion of restoration.

7. Gulfstream shall employ at least one EI for the Project. The EI(s) shall be:

- a. responsible for monitoring and ensuring compliance with all mitigation measures required by the Order and other grants, permits, certificates, or other authorizing documents;

- b. responsible for evaluating the construction contractor's implementation of the environmental mitigation measures required in the contract (see condition 6 above) and any other authorizing document;
 - c. empowered to order correction of acts that violate the environmental conditions of the Order, and any other authorizing document;
 - d. a full-time position, separate from all other activity inspectors;
 - e. responsible for documenting compliance with the environmental conditions of the Order, as well as any environmental conditions/permit requirements imposed by other federal, state, or local agencies; and
 - f. responsible for maintaining status reports.
8. Beginning with the filing of its Implementation Plan, Gulfstream shall file updated status reports with the Secretary on a **monthly** basis until all construction and restoration activities are complete. On request, these status reports would also be provided to other federal and state agencies with permitting responsibilities. Status reports shall include:
- a. an update on Gulfstream's efforts to obtain the necessary federal authorizations;
 - b. the construction status of the Project, work planned for the following reporting period, and any schedule changes for stream crossings or work in other environmentally sensitive areas;
 - c. a listing of all problems encountered and each instance of noncompliance observed by the EI during the reporting period both for the conditions imposed by the Commission and any environmental conditions/permit requirements imposed by other federal, state, or local agencies;
 - d. a description of the corrective actions implemented in response to all instances of noncompliance;
 - e. the effectiveness of all corrective actions implemented;
 - f. a description of any landowner/resident complaints which may relate to compliance with the requirements of the Order, and the measures taken to satisfy their concerns; and
 - g. copies of any correspondence received by Gulfstream from other federal, state, or local permitting agencies concerning instances of noncompliance, and Gulfstream's response.
9. Gulfstream must receive written authorization from the Director of OEP **before commencing construction of any Project facilities**. To obtain such authorization, Gulfstream must file with the Secretary documentation that it has received all applicable authorizations required under federal law (or evidence of waiver thereof).

10. Gulfstream must receive written authorization from the Director of OEP **before placing the Project into service**. Such authorization would only be granted following a determination that rehabilitation and restoration of the areas affected by the Project are proceeding satisfactorily.
11. **Within 30 days of placing the authorized facilities in service**, Gulfstream shall file an affirmative statement with the Secretary, certified by a senior company official:
 - a. that the facilities have been constructed in compliance with all applicable conditions, and that continuing activities would be consistent with all applicable conditions; or
 - b. identifying which of the Certificate conditions Gulfstream have complied with or would comply with. This statement shall also identify any areas affected by the Project where compliance measures were not properly implemented, if not previously identified in filed status reports, and the reason for noncompliance.
12. Gulfstream shall **not begin** construction activities **until**:
 - a. FERC staff receives comments from the USFWS regarding the proposed action;
 - b. FERC staff completes formal ESA consultation with the USFWS, if required; and
 - c. Gulfstream has received written notification from the Director of OEP that construction or use of mitigation may begin.
13. **Prior to construction**, Gulfstream shall file with the Secretary documentation of concurrence from the FDEP and ADEM that the Project is consistent with the states' CZMA provisions.
14. Gulfstream shall file a noise survey with the Secretary **no later than 60 days** after placing the authorized unit at CS 410 in service. If a full horsepower load condition noise survey is not possible, Gulfstream shall file an interim survey at the maximum possible horsepower load and provide the full load survey **within 6 months**. If the noise attributable to the operation of all of the equipment at CS 410 under interim or full horsepower load conditions exceeds a L_{dn} of 55 dBA at any nearby NSAs, Gulfstream shall file a report with the Secretary on what changes are needed and shall install extra noise controls to comply with the level **within 1 year** of the in-service date. Gulfstream shall confirm compliance with

the above requirement by filing a second noise survey with the Secretary **no later than 60 days** after installation of additional noise controls.

15. Gulfstream shall file a noise survey with the Secretary **no later than 60 days** after placing the authorized meter station at CS 420 in service. If a full horsepower load condition noise survey is not possible, Gulfstream shall file an interim survey at the maximum possible horsepower load and provide the full load survey **within 6 months**. If the noise attributable to the operation of the meter station, including CS 420, at full load exceeds an Ldn of 55 dBA at any nearby NSAs, Gulfstream shall file a report on what changes are needed and install additional noise controls to meet that level within **1 year of the in-service date**. Gulfstream shall confirm compliance with the Ldn of 55 dBA requirement by filing a second noise survey with the Secretary **no later than 60 days** after it installs the additional noise controls.

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Appendix 1 Cumulative Projects

Appendix 1 - Present, and Reasonably Foreseeable Projects Considered in the Cumulative Impacts Analysis for Project							
Project	Project Description	County / Parish, State	Project Size (acres) ^b	Closest Distance from Project ^a	Estimated Construction Timeframe	Included in Cumulative Impact Analysis	Resources Potentially Affected within the proposed Project's Geographic Scope ^a
Mobile County/McDonald Road (CR-39) Additional Travel lanes.	Transportation / Additional lanes from Schillinger Road to McDonald road (2miles).	Mobile County, Alabama	2 miles	10.6 miles north of CS 410	Construction is planned for 2019.	Yes	Operational air
Mobile County/McDonald Road (CR-39) Additional Travel lanes.	Transportation / New lane alignment of CR-25 from CR-28 to CR-358	Mobile County, Alabama	8 miles	11.2 miles north of CS 410	Construction is planned for early 2020.	Yes	Operational air
ALDOT / Mobile River Bridge and Bayway	Transportation / Increase the capacity of I-10. Constructing a new six lane bridge.	Mobile County, Alabama	10 miles	21.4 miles northeast of CS 410	Construction is planned for early 2020.	Yes	Operational air
Alabama State Port Authority & USACE / Mobile Harbor Channel Dredging	Dredging/ Deepening the existing Bar, Bay, and a portion of the River Channel.	Mobile Harbor, Alabama	1.6 acres	10.3 miles east of CS 410	The General Reevaluation Report in anticipating approval in November of 2019.	Yes	Operational Air
AirBus / Mobile Aeroplex/ Flightworks Alabama	Flightworks Alabama building an 18,000 square-foot flight experience interactive exhibition.	Mobile County, Alabama	0.5 acre	18.3 miles northeast of CS 410	Construction began in September of 2018.	Yes	Operational air
Sunset Cove Properties / Mixed-use marina development	The proposed construction would include commercial retail and residential condominium, and marina facility in Bayou Aloe on the north side of Dauphin Island.	Dauphin Island, Mobile County, Alabama	8.3 acres	10.4 miles southeast of CS 410	Public notice for USACE/ADEM issued October 1, 2018.	Yes	Operational air
The Nature Conservancy / Restoration of Aquatic Habitats	Coastal restoration project to restore and enhance 60 acres of march and tidal creek habitat and stabilize 1.5 miles of shoreline.	Portersville Bay, Bayou La Batre, Mobile County, Alabama	60 acres	1.45 miles west of milepost 4.0	Public notice for USACE/ADEM issued May 8, 2018.	Yes	Waterbodies, Wetlands; Wildlife, and Vegetation;

Appendix 1 - Present, and Reasonably Foreseeable Projects Considered in the Cumulative Impacts Analysis for Project							
Project	Project Description	County / Parish, State	Project Size (acres) ^b	Closest Distance from Project ^a	Estimated Construction Timeframe	Included in Cumulative Impact Analysis	Resources Potentially Affected within the proposed Project's Geographic Scope ^a
Big Bend Modernization Project / Tampa Electric Big Bend Power Station	Electric / Tampa Electric Company – Big Bend Modernization Project. Decommissioning of Unit 2 and conversion of Unit 1 to a gas-fired combined cycle electricity generating unit	Apollo Beach, Hillsborough County, Florida	55 acres	13.5 miles northeast of CS 420	Construction was scheduled to begin June 2019, with a completion date of December 1, 2022.	Yes	Operational Air
^a Only resources in which a cumulative impact may occur are identified. ^b Project size was identified based on publicly available documentation including reported acreages or review of mapping exhibit.							

Appendix 2 Species Impacts and Determination of Affect

Phase VI Expansion Project – Species Impacts and Determination of Affect							
Common Name	Scientific Name	Federal Status	AL Status	FL Status	Conclusion	ESA Section 7 / BGEPA Act Determination	Notes and Mitigation Measures
Eastern Indigo Snake	<i>Drymarchon couperi</i>	T	S1	T	Suitable habitat present, species not present	Not likely to adversely affect	Surveys conducted by qualified surveyors indicated species absence. Gulfstream would implement a “no snake kill policy” during construction of the Project. Should a large black snake be found in the Project area during construction, Gulfstream would stop work and immediately contact the USFWS.
Black Pine Snake	<i>Pituophis melanoleucus lodingi</i>	T	S2	NL	Suitable habitat present, species not present; Designated critical habitat does not cross the Project study area.	Not likely to adversely affect	Surveys conducted by qualified surveyors indicated species absence. Gulfstream would implement a “no snake kill policy” during construction of the Project. Should a large black snake be found in the Project area during construction, Gulfstream would stop work and immediately contact the USFWS.
Gopher Tortoise	<i>Gopherus polyphemus</i>	T*	S3	T	Suitable habitat present, species not present	Not likely to adversely affect	Surveys conducted by qualified surveyors indicated species absence. Should a tortoise enter the workspace, construction activities would be halted and the tortoise would be allowed to exit the workspace without harm.
Alabama Red-bellied Turtle	<i>Pseudemys alabamensis</i>	E	S1	NL	Suitable habitat present	Not likely to adversely affect	Gulfstream would implement the Gulfstream Plan and Procedures to minimize impacts to aquatic species potentially present within waterbodies crossed by the Project. The USFWS commented in its June 13, 2019 response letter that the Alabama red-bellied turtle is not expected to be impacted by the Project.

Phase VI Expansion Project – Species Impacts and Determination of Affect (cont)							
Common Name	Scientific Name	Federal Status	AL Status	FL Status	Conclusion	ESA Section 7 / BGEPA Act Determination	Notes and Mitigation Measures
River Frog	<i>Lithobates heckscheri</i>	NL	S1	NL	Suitable habitat present	Not likely to adversely affect	The Gulfstream Plan and Procedures would be implemented to minimize impacts associated with Project construction.
Mississippi Sandhill Crane	<i>Grus Canadensis pulla</i>	E	NL	NL	Suitable habitat present, species not present	Not likely to adversely affect	Surveys conducted by qualified surveyors indicated species absence. Gulfstream would implement the Gulfstream Plan and Procedures to minimize impacts to suitable habitat associated with Project construction. Should a crane enter the workspace, construction activities would be halted and the crane would be allowed to exit the workspace without harm.
Bald Eagle	<i>Haliaeetus leucocephalus</i>	BGEPA	NL	NL	Suitable habitat present, species not present	Not likely to adversely affect	Surveys conducted by qualified surveyors indicated species absence. No known occurrences of bald eagle nests within a one mile radius of the Project.
Wood Stork	<i>Mycteria americana</i>	E	S2	T	Suitable habitat present, species not present	Not likely to adversely affect	Surveys conducted by qualified surveyors indicated species absence. Gulfstream would implement the Gulfstream Plan and Procedures to minimize impacts to suitable habitat associated with Project construction. Should a stork enter the workspace, construction activities would be halted and the stork would be allowed to exit the workspace without harm.

Phase VI Expansion Project – Species Impacts and Determination of Affect (cont)							
Common Name	Scientific Name	Federal Status	AL Status	FL Status	Conclusion	ESA Section 7 / BGEPA Act Determination	Notes and Mitigation Measures
Little Blue Heron	<i>Egretta caerulea</i>	NL	NL	T	Suitable habitat present, species not present	Not likely to adversely affect	Surveys conducted by qualified surveyors indicated species absence. The Gulfstream Plan and Procedures would be implemented to minimize impacts to suitable habitat associated with Project construction. Should a heron enter the workspace, construction activities would be halted and the heron would be allowed to exit the workspace without harm.
Tricolored Heron	<i>Egretta tricolor</i>	NL	NL	T	Suitable habitat present, species not present	Not likely to adversely affect	Surveys conducted by qualified surveyors indicated species absence. The Gulfstream Plan and Procedures would be implemented to minimize impacts to suitable habitat associated with Project construction. Should a heron enter the workspace, construction activities will be halted and the heron would be allowed to exit the workspace without harm.
(a) E = Endangered; T= Threatened; C = Candidate; BGEPA = Bald and Golden Eagle Protection Act; NL = Not Listed; AL State Rank – S1 (Critically Imperiled), S2 (Imperiled), and S3 (Vulnerable).							