

## **5.0 CONCLUSIONS AND RECOMMENDATIONS**

### **5.1 SUMMARY OF THE STAFF'S ENVIRONMENTAL ANALYSIS OF THE PROPOSED ACTION AND ALTERNATIVES**

Based on our analysis of the proposed action and alternatives, the Companies' adherence to their proposed construction, restoration, mitigation, and operations measures, our recommendations for additional mitigation, and the Companies' implementation of a third-party environmental inspection and monitoring program, we conclude that construction and operation of the proposed Project would result in limited adverse environmental impacts. To support this conclusion, we are providing the following summary of our environmental analysis.

#### **5.1.1 Geology**

Construction and operation of the proposed Project would not significantly affect geological resources. Existing topography would be temporarily impacted by construction of the proposed pipeline; however, these impacts would be mitigated by the Companies' restoration efforts. The proposed Project would be located in a region with a low risk of seismic activity, soil liquefaction, and subsidence. Some portions of the proposed Project would traverse areas with a high risk of landslides along stream banks (MP 66.3 – 94.5, and near the Paris Compressor Station, in Texas); however, due to the limited extent of these areas and the proposed construction methods, no significant hazard to the pipeline or significant resources is anticipated.

#### **5.1.2 Soils**

Construction and operation of the proposed Project would affect a variety of soils and soil associations including sensitive agricultural soils. Several soil characteristics including susceptibility to erosion and compaction, drainage capability, and revegetation potential would be temporarily affected by construction of the proposed Project. In order to minimize general construction-related affects to soils, the Companies would implement the measures described in their Plan, Procedures, and SPCC Plan. These measures would control erosion, and increase the potential success of revegetation efforts. Furthermore, the Companies propose to strip and segregate topsoil, restore contours, conduct compaction testing and treatment, and monitor revegetation efforts and crop yields.

To further minimize erosion associated with the crossing of Slough Creek in Lamar County, Texas, Gulf Crossing has redesigned its ATWS to avoid any tree clearing near the creek, thereby maintaining the vegetative buffer. Additionally, Gulf Crossing has reduced the size of its temporary workspace near the creek. To ensure that the creek banks are stabilized and able to support revegetation following construction, we are recommending that Gulf Crossing prepare a site-specific mitigation plan for the Slough Creek crossing.

#### **5.1.3 Water Resources**

Construction and operation of the proposed Project would not significantly affect groundwater resources including aquifers, sole-source aquifers, wellhead protection areas, areas of groundwater concern, wells and springs. The Companies would avoid or minimize impacts to groundwater resources by implementing measures described in their Procedures, SPCC Plan, and Plan for the Unanticipated Discovery of Contaminated Environmental Media. Additionally, the Companies have prepared a Well Monitoring and Mitigation Plan which would provide evaluation and remediation for any impacts to private and/or domestic water wells resulting from construction. To further minimize potential impacts to wellhead protection areas during refueling activities, we are recommending the Companies revise their

SPCC Plan to restrict and limit refueling areas within the four wellhead protection areas that would be crossed by the proposed Project.

The proposed Project would cross 196 perennial streams, 668 intermittent streams, and 32 lakes and ponds. Waterbody crossings would be accomplished using open-cut, HDD, bore, or flume methods. The Companies propose to use 34 separate HDD crossings to accomplish pipeline installation across 59 waterbodies, including 16 of the 22 major waterbody crossings; all of the navigable waterbodies; two Louisiana Natural and Scenic Rivers; three NRI-listed streams; and the majority of impaired waterbodies. In response to TPWD's comment on the importance of Sanders Creek as a mussel sanctuary and our recommendation to implement a dry crossing, Gulf Crossing currently proposes to cross Sanders Creek by a bore to minimize impacts to the creek. ODWC noted that perennial streams in Oklahoma are uncommon and extremely valuable to wildlife; therefore, of the eight perennial streams crossed by the proposed Project in Oklahoma eight would be crossed by HDD and the other five by flume to minimize impacts from turbidity and sedimentation. The remaining waterbodies would be crossed by open-cut methods.

All waterbody crossings would be conducted in accordance with the Companies' Procedures and the terms of any applicable federal or state permits. The Companies' Procedures are consistent with our Wetland and Waterbody Construction and Mitigation Procedures with the exception of several ATWS which are located within 50 feet of certain waterbodies to accommodate special construction activities (Table 3.3.2-3) such as road crossings, HDD workspaces, and side slope construction. However, based on our review of proposed ATWS and access roads including their size, location, and purpose, we find their placement acceptable. Construction and operation of the proposed Project would not significantly affect surface water resources.

Accidental spills occurring during construction and operation of the proposed Project would be prevented or adequately minimized through implementation of the Companies' Procedures and SPCC Plan. Any contaminated sediment in waterways discovered during open-cut waterbody crossings would be contained according to the Companies' Plan for the Unanticipated Discovery of Contaminated Environmental Media. Additionally, the Companies' HDD Contingency Plan describes the measures that would be implemented to monitor for, contain, and clean up any inadvertent releases of drilling fluids during HDD operations. The Companies' HDD Contingency Plan also describes measures that would be followed in the event of an HDD failure.

The Companies propose to use surface waters and municipal water supplies for hydrostatic testing of the proposed pipeline, and in doing so would implement their Procedures and adhere to local, state, and federal water withdrawal and discharge permits. There are no state or locally designated surface water protection areas or surface water intakes located within three miles downstream of the proposed Project waterbody crossings.

#### **5.1.4 Wetlands**

Construction and operation of the proposed Project would not significantly affect wetlands. Specifically, construction of the proposed Project would impact approximately 164 wetlands including 107.3 acres of forested wetlands and 37.0 acres of scrub-shrub, emergent, and open-water wetlands. Impacts to forested wetlands would be considered long-term due to the long regeneration time for mature forests; impacts to all other wetland categories would be considered temporary or short-term. No wetlands would be affected by the construction and operation of proposed aboveground facilities, pipe storage and contractor yards. Operation of the proposed pipeline would affect approximately 43.0 acres of wetlands, including 39.2 acres of forested wetlands, which would be permanently converted to scrub-shrub wetlands. Sensitive, high quality and special-status wetlands affected by the proposed Project

include several high quality forested water tupelo or bald cypress stand wetland areas, bottomland forest, and NRCS-administered WRP wetlands.

The Companies would minimize affects to wetlands by completing all wetland crossings in accordance with their Procedures, Wetland Mitigation Plan, and by complying with the terms and conditions of any Section 404 authorizations issued by the COE, including the provisions of any required wetland compensatory mitigation. We are recommending that the Companies complete their consultation with the COE and file the field-delineated locations and the resulting construction and operational impacts for all affected wetlands. The Companies would also minimize affects to wetlands by reducing the construction right-of-way width through wetlands to 75 feet, except for those areas with requested alternative measures (Table 3.4.2-1). We reviewed the areas where the Companies requested alternative measures and we approve of the measures in these locations.

We are including recommendations to minimize affects to large forested and high quality tupelo and bald cypress wetlands through the use of HDD crossing methods and HDD extensions. Further consultations with NRCS and recommended route variations regarding WRP lands and high quality forested wetlands would sufficiently minimize overall impacts to wetland resources. Additionally, the Companies would compensate for all unavoidable wetland impacts through purchase of wetland mitigation bank credits in the area of the proposed Project. Following construction, affected wetlands located outside the 30-foot-wide maintained portion of the permanent pipeline right-of-way would be allowed to revert to preconstruction conditions.

### **5.1.5 Vegetation**

Construction and operation of the proposed Project would affect agricultural land, open land (pasture, shrub/scrub land, and northern blackland prairies), and upland forests (pine-hardwood forest, hardwood slope forest, pine plantation, northern post oak savannah, hardwood forest, and pine forest). Construction of the propose Project would affect 4,536 acres. The main vegetative communities that would be affected include agricultural land (1,964 acres, or 43 percent) and hardwood forests (1,810 acres, or 40 percent). Open land (477 acres, or 11 percent), and pine/pine plantation (286, or 6 percent) represent the other vegetation communities affect by construction. Several extensive forested tracts would also be crossed by the proposed pipeline route, as well as vegetative communities of special concern, including NRCS-administered CRP lands; a Silvaneus Dropseed prairie community; Caddo Black Bayou Preserve; a Texas Water Oak-Willow Oak Forest Vegetative Community; and bald cypress/water tupelo forested wetlands.

The Companies would restore all disturbed vegetated areas in accordance with their Plan and Procedures. Affected agricultural and open lands would typically be revegetated within one or two growing seasons, but impacts to pine plantations and upland forest would be long-term, taking up to 30 years or more to recover. Impacts to forested areas contained within the permanent pipeline right-of-way would also represent a more substantial change in vegetative strata. Impacts to forested areas, including large forested tracts, would be minimized by routing the proposed Project along existing rights-of-way and through other previously disturbed areas, such as agricultural and open lands, where possible. Additionally, many of the large forested tracts crossed by the proposed Project are subject to some disturbance associated with timber management programs. The Companies have initiated consultations with state and federal agencies regarding seed mixtures and final restoration measures, but the consultations are not complete. Therefore, to ensure that the comments of the TPWD, MDWFP, ODWC, LDWF, the Nature Conservancy, and NRCS are adequately addressed, we are recommending that the Companies finalize consultations prior to construction. Construction and operation of the proposed Project could contribute to the spread of exotic and invasive species; therefore, the Companies' developed

their Exotic and Invasive Species Control Plan that would monitor and prevent the spread of exotic and invasive species. We have reviewed the plan and believe it adequately addresses the issues.

#### **5.1.6 Wildlife and Aquatic Resources**

Construction and operation of the proposed Project would not significantly affect wildlife and aquatic habitats. The clearing of herbaceous upland and wetland habitats within the construction right-of-way and other work areas would affect wildlife at or near the time of construction, but such impacts would be temporary and many habitats would generally recover quickly following construction. Forested habitats would be affected by the long-term conversion of wooded areas to earlier successional stages within the temporary construction right-of-way and a permanent conversion to scrub-shrub or herbaceous levels within the permanent pipeline right-of-way. The Companies propose to collocate and/or parallel existing utility rights-of-way to minimize impacts to previously undisturbed vegetation and wildlife habitat. The Companies would further minimize impacts to wildlife habitats through the use of HDD crossing methods and the implementation of measures described in their Plan and Procedures. The Project would cross sensitive and managed wildlife habitats. To protect these habitats, we are recommending that Gulf Crossing complete consultation with the COE regarding Bodcau WMA and with the Nature Conservancy regarding the Caddo Black Bayou Preserve to develop additional methods to minimize impacts to those areas in accordance with those organization's land or resources management priorities, prior to construction. We are also recommending that Gulf Crossing conduct pre-construction surveys to determine if the rookeries are occupied and that Gulf Crossing avoid colonial nesting waterbirds rookeries during the nesting period. Furthermore, we are recommending that the Companies finalize the Migratory Bird Plan to minimize impacts to migratory birds prior to construction.

Impacts on fisheries and aquatic habitats would result from increased sedimentation and turbidity, loss of cover, introduction of pollutants into the aquatic environment, and disruptions of fish movements. However, these impacts would be minimized because all waterbody crossings would be conducted in accordance with the Companies' Procedures and the terms of any applicable federal or state permits. Impacts would also be avoided by the use of HDDs at many waterbody crossings. Aquatic habitat impacts at other crossing locations would be temporary, as crossings would be generally completed in less than 48 hours. Additionally, intake screening to limit entrainment of fishes and maintenance of adequate stream flow rates to protect aquatic life during hydrostatic test water withdrawals would ensure that any Project-related impacts to aquatic habitats would be minor and temporary.

#### **5.1.7 Threatened, Endangered, and Special Status Species**

Based on consultations with the FWS and state wildlife management agencies, we identified 15 federally-listed threatened, endangered, or candidate species that could potentially be affected by the proposed Project. We have determined that the proposed Project may affect, but would not be likely to adversely affect eleven federally-listed threatened or endangered species. The remaining four species and their habitats either do not occur in the Project area or would be avoided by special construction methods such as HDD.

The FWS Lafayette has concurred with our findings that the proposed Project is not likely to affect the Louisiana black bear. However, Gulf Crossing continues to consult with the TPWD Tyler Regional office concerning the Louisiana black bear in Texas. Therefore, we are recommending that Gulf Crossing finalize consultations with the TPWD to ensure that potential impacts to the Louisiana black bear be avoided or minimized. We are recommending that Gulf Crossing complete and file these consultations with the Secretary prior to construction.

The FWS has concurred with our findings that the proposed Project is not likely to adversely affect the American burying beetle. However, the FWS Tulsa field office stated that consultations concerning the American burying beetle would not be complete until all missing information for the survey report is submitted to its office. Therefore, we are recommending that Gulf Crossing file a complete survey report for the American burying beetle with the FWS and the Secretary, prior to construction.

Comments were provided by the FWS during our review of the proposed Project concerning the presence of interior least terns in the Project area and changes in ranges that are common for this species. We are recommending that the Companies use qualified biologists to survey appropriate nesting habitat of interior least terns found within 650 feet of any proposed work areas, if construction activity would occur during the nesting season of May 15 to August 31. If any nesting sites are observed, the Companies should immediately notify FERC and reinitiate consultation with the FWS.

Other special status species, including an additional 23 species listed as endangered, threatened, imperiled, or rare by the states of Oklahoma, Texas, Louisiana, and Mississippi were identified through consultations with the ODWC, TPWD, LDWF and the MDWFP. Based on consultations with these agencies, no additional surveys or mitigation measures regarding state listed species are necessary and impacts to these species resulting from construction and operation of the proposed Project would not be significant.

#### **5.1.8 Land Use, Recreation and Special Interest Areas, and Visual Resources**

Approximately 6,108.8 acres of land would be used during construction of the proposed Project, including 4,942.0 acres of land for the nominal 100-foot-wide pipeline construction right-of-way and ATWS; 233.4 acres to construct the Mississippi Loop; 96.2 acres for the aboveground facilities; and 837.3 acres for pipe storage and contractor yards and access roads. Following construction, all affected areas outside the permanent pipeline right-of-way and aboveground facility sites would be restored and allowed to revert to preconstruction conditions and uses. During operation of the proposed Project, the proposed 60-foot-wide permanent pipeline right-of-way, aboveground facilities, and permanent access roads would require the use of approximately 2,798.4 acres of land. However, we believe that a 60-foot-wide permanent right-of-way is not absolutely necessary for operation and maintenance of the proposed Project; therefore, in an effort to reduce permanent impacts, we are recommending that the Companies not utilize or maintain a permanent right-of-way greater than 50 feet in width. Where the proposed pipeline is collocated with existing pipelines, we are recommending that the Companies overlap the existing pipeline's right-of-way for at least 10 feet. Twelve residential structures would be located within 50 feet of construction work areas; the closest residence is 25 feet from the construction work area. The Companies have developed general construction procedures for the residential structures within 50 feet in order to avoid or minimize potential impacts to the residents. Due to potential conflict between the terms of the easements and development of the land, we are recommending Gulf Crossing provide information regarding crossing methods for Richard Adcock and W.W. Farm tracts.

The proposed Project would cross several recreation and special interest areas, including CRP and WRP lands administered by the FSA and the NRCS, respectively; the NRI-listed Blue River, Pearl River, and Bayou D'Arbonne; two Louisiana Natural and Scenic Rivers, Bayou Dorcheat and Bayou D'Arbonne; The Nature Conservancy's Caddo Black Bayou Preserve; Red River NWR; Louisiana Wetland Management District easements; and Bodcau State NWR; and various levees. To minimize impacts to these resources, Gulf Crossing would use special construction techniques such as HDD. NRCS has commented that negotiations with Gulf Crossing are still ongoing with regard to the WRP land crossed in Fannin County, Texas and we are recommending that Gulf Crossing continue to consult with the NRCS and FWS regarding special considerations and agreements for crossing the affected WRP

special project area from MP 340.4 to MP 341.1. In Louisiana Wetland Management District Easements where permits and approvals for proposed Project-related use and/or approved mitigation for potential impacts to these resources are incomplete, we are recommending that Gulf Crossing complete consultations with the applicable agencies and file site-specific permits, and plans to minimize, or mitigate impacts to these areas. LDWF has recommended that a bore crossing be evaluated for Bayou D'Arbonne at MP 235.3; therefore, we have recommended evaluating alternative measures for this crossing.

Visual resources along the proposed Project route would be affected by the installation of certain aboveground facilities and through the alteration of existing vegetative patterns associated with the clearing and maintenance of the construction and permanent pipeline rights-of-way. We are recommending that Gulf Crossing finalize screening plans for the Sherman and Paris Compressor Stations.

### **5.1.9 Socioeconomics**

The proposed Project would have positive impacts on local spending, employment, and tax income during construction and operation; however, these impacts would be relatively small. Construction of the proposed Project would not have a significant adverse impact on local populations, housing, employment, community services, or local commerce. Any adverse impacts would be highly localized and temporary due to the relatively short construction period and the rapid rate at which construction crews would pass through any one area. Construction of the proposed Project would temporarily increase demand for public services such as medical, police, and fire protection, but these impacts would be offset by increased tax revenues to local governments.

### **5.1.10 Cultural Resources**

The Companies have initiated cultural resource surveys and prepared reports covering 344.5 miles (97 percent) of the proposed Project. The survey within the Texas portion of the proposed Project identified 14 new and 34 previously recorded prehistoric sites. One of the previously unrecorded sites is considered eligible for listing in the NRHP; however, the site would be avoided by realignment of the pipeline route. Gulf Crossing identified 23 new and 5 previously recorded historic sites in the Texas portion of the proposed Project. None of the sites are considered eligible for listing in the NRHP, and we are not recommending any additional work.

The survey within the Oklahoma portion of the proposed Project identified two previously unrecorded prehistoric sites and one previously unrecorded prehistoric locus. The sites are not considered eligible for listing in the NRHP, and we are not recommending any additional work. Gulf Crossing identified five new and four previously recorded historic sites in the Oklahoma portion of the proposed Project. None of the sites are eligible for listing in the NRHP, and we are not recommending any additional work.

The survey within the Louisiana portion of the proposed Project identified 11 previously unrecorded prehistoric sites and loci. One of these sites is a potentially eligible prehistoric site for listing in the NRHP. The site would be avoided by HDD and would not be affected by the proposed Project; however, the Louisiana SHPO has not commented on the HDD plan. Gulf Crossing identified 35 unrecorded and one previously recorded historic site in the Louisiana portion of the proposed Project. None of the sites are eligible for listing in the NRHP, and we are not recommending any additional work.

The survey within the Mississippi portion of the proposed Project identified one previously recorded prehistoric site. The site was not assessed for listing in the NRHP, but would not be affected by

the proposed Project. No previously unrecorded historic sites or previously recorded historic sites were located within the Mississippi portion of the proposed Project.

Phase I Survey reports have been submitted to the SHPOs for review. Concurrence was received from the Mississippi SHPO. Comments are still pending from the Oklahoma, Texas, and Louisiana SHPOs. The Companies have indicated that they will complete and file all of their outstanding survey reports. To ensure that all our responsibilities under Section 106 of the NHPA are met, we are recommending that the Companies defer construction until all surveys and evaluations are completed, all survey reports and any necessary treatment plans have been reviewed by appropriate parties, and the Director of OEP provides written notification to proceed.

#### **5.1.11 Air Quality and Noise**

Increased equipment emissions associated with construction of the proposed Project would be temporary and localized, and these emissions are not expected to cause or contribute to a violation of applicable air quality standards. The proposed Sherman, Paris, Mira, and Sterlington Compressor Stations and the expansion of the Gulf South Harrisville Compressor Station would emit air pollutants as a result of combustion of natural gas to drive the compressor units, and in association with the periodic operation of auxiliary generators. However, the air emissions associated with operation of the Sherman, Mira, and Sterlington facilities would meet federal and state ambient air quality standards and permitting requirements based on screening level air dispersion modeling. Air emissions from operation of the Paris Compressor Station and the Gulf South Harrisville Compressor Station would meet federal and state ambient air quality standards based on refined air dispersion modeling.

Impacts to noise quality associated with construction of the proposed Project would generally be temporary, minor, and limited to daylight hours, except at certain HDD sites, where drilling and related construction equipment would likely operate on a continuous basis for up to several days. As a result of continuous 24-hour operation, noise levels at 11 of the HDD sites with nearby NSAs could be significantly increased. Three additional HDD sites have estimated impacts near 55 dBA  $L_{dn}$  or near a 10 dBA increase and actual impacts may exceed these levels during operation. We are recommending a condition to ensure these levels are not exceeded.

The proposed new compressor stations and the expanded Gulf South Harrisville Compressor Station would generate noise on a continuous basis during operations. However, the predicted noise levels attributable to operations of the new compressor stations and the authorized units at the Gulf South Harrisville Compressor Station are not likely to result in significant effects on the NSAs nearest to those facilities. To ensure that noise levels are within acceptable limits, we are recommending that the Companies file noise survey reports within 60 days after placing the compressor stations in service to confirm the noise levels would be below 55 dBA  $L_{dn}$ .

#### **5.1.12 Reliability and Safety**

The proposed Project would be designed, constructed, operated, and maintained to meet or exceed all DOT safety standards for natural gas pipelines. Following construction, the Companies would also initiate a pipeline integrity management plan to ensure public safety during operation. The proposed Project would result in only a slight increase in risk to the nearby public.

#### **5.1.13 Cumulative Impacts**

Three types of projects: past, present, and reasonably foreseeable future projects could potentially contribute to a cumulative impact when considered with the proposed Project. These projects include

other natural gas transmission pipelines in the area, nonjurisdictional facilities associated with the proposed Project, and unrelated projects in the vicinity of the proposed pipeline route. FERC-regulated natural gas pipeline projects occurring or that would occur in the counties and parishes affected by the proposed Project include: CenterPoint's Carthage to Perryville Project (CP06-85-000); Gulf South's Southeast Expansion Project (CP07-32-000); Gulf South's East Texas to Mississippi Expansion Project (CP06-446-000); Kinder Morgan's Midcontinent Express Project (CP08-6-000); and the Southeast Header Supply Project (CP07-44-000). Natural gas pipeline projects not subject to FERC jurisdiction occurring, or that would occur in the counties and parishes affected by the proposed Project include: the Sherman Express Pipeline, LLC, Enogex Bennington Compressor Station, and the Regency Pipeline (completed in 2005). Six unrelated transportation/highway projects also occur, or would occur in the counties and parishes affected by the proposed Project. The potential impacts associated with these projects that are most likely to be cumulatively significant are related to wetlands and waterbodies, vegetation and wildlife (including federally and state-listed endangered and threatened species), land use, air quality, and noise.

Based on the proposed construction, minimization, mitigation and operations procedures and measures, we believe that impacts associated with the proposed Project would be relatively minor. Similarly, each of the FERC-regulated projects considered in our analysis has been or would be designed to avoid or minimize impacts to sensitive environmental resources. Additionally, it is anticipated that any significant unavoidable impacts to sensitive resources resulting from these projects would be mitigated. Mitigation generally leads to the avoidance or minimization of cumulative impacts. Any proposed projects under the Commission's jurisdiction would also be the subject of our NEPA review to avoid or minimize impacts. Consequently, although construction and operation of the proposed project along with other projects in the area would result in cumulative impacts to environmental resources, we believe that these impacts would be limited and not significant.

#### **5.1.14 Alternatives**

We evaluated the No Action and Postponed Action alternatives, which would involve not building or deferring construction of the proposed Project facilities. While the No Action or Postponed Action alternative would eliminate or delay the short- and long-term environmental impacts identified in this EIS, the objectives of the proposed Project would not be met. We also evaluated the use of alternative energy sources and the potential effects of energy conservation, but these measures would not satisfy the need for the proposed Project.

Our analysis of system alternatives included an evaluation of whether existing or proposed natural gas pipeline systems would meet the proposed Project objectives while offering an environmental advantage over the proposed Project. While three existing pipeline systems (Gulf South, CEGT, and NGPL) traverse the same general geographic area as the proposed Project, none of these systems would meet the capacity requirements or the geographic needs of the proposed Project without substantial system upgrades, such as new or increased compression and new pipeline looping, or the construction of additional pipelines to extend existing systems to the proposed Project origin or terminus. Similarly, the proposed Midcontinent Express Project, which would be located in the vicinity of the proposed Project, would not meet the capacity requirements of the proposed Project without substantial system upgrades. A single combined project to replace both the Midcontinent Express Project and the proposed Project was evaluated. The single system alternative would entail the use of a single 48-inch-diameter pipeline capable of transporting the natural gas quantities associated with both projects. Material unavailability, the need for larger construction equipment, and increased spoil quantities associated with the installation of a larger diameter pipe would lead to unavoidable construction delays resulting in an inability to meet market and shipper requirements in the timeframe needed. Further, several operational issues such as

different delivery points and rate schedules for the two projects would make the single system alternative impractical.

During the Project review process, refinements were made to the initial proposed route and construction methods to avoid or significantly reduce the impacts on sensitive resources. We evaluated two major route alternatives to the proposed Project route which did not offer a significant environmental advantage over the proposed Project route. Therefore, we eliminated these route alternatives from further consideration.

Additionally, smaller-scale route variations were identified to resolve or reduce construction impacts to localized, specific resources and to accommodate landowner requests. Gulf Crossing identified 113 route variations to the initially planned route that have been incorporated into the proposed Project route since their application filing. We have evaluated each of these minor route variations and considered their associated environmental consequences as part of our Project environmental analysis. Further, we identified and evaluated 19 additional route variations in response to public and agency comments received during the pre-filing, scoping, and draft EIS comment periods for the proposed Project. Of these, the company agreed to adopt six route variations and we are recommending the adoption of three additional route variations. The remaining ten were not found to be environmentally preferable to the proposed route. We recommend adoption of the Everhart Route Variation II, which would decrease the number of perennial stream crossings in the area. This route variation is discussed in Section 4.4.3. The Stonebridge II variation which would avoid a planned residential development and the other recommended route variation, the Fannin County WRP Variation (Section 4.4.5), would traverse a WRP parcel, though for a shorter length than the proposed Project alignment. To reduce WRP impacts associated with the adoption of this route variation, we further recommend that Gulf Crossing consult with NRCS regarding WRP impact minimization and mitigation measures. We anticipate that minor alignment shifts would be made prior to and during construction to accommodate other such site-specific circumstances and landowner concerns. Neither Gulf South nor any agency or landowner comments identified preferred alternatives to the Mississippi Loop which is currently collocated with the recently approved East Texas to Mississippi Expansion Project. Further, due to this collocation and no identified areas of concern, we are not recommending any route alternatives for the Mississippi Loop.

We evaluated the proposed locations of the Project aboveground facilities to determine whether environmental impacts would be reduced or mitigated by use of alternative facility sites. We did not identify any alternative sites for the proposed M/R or MLV facilities that would offer a significant environmental advantage to the proposed sites. Further, the new Sterlington Compressor Station and Harrisville Compressor Station addition would be constructed within the footprint of existing facilities and no alternatives were evaluated for these sites. We did evaluate alternative sites for the proposed Sherman, Mira, and Paris Compressor Stations, based in part on public comments received during the pre-filing, scoping, and draft EIS comment periods and did not find alternative locations that were environmentally preferable to the proposed sites.

## **5.2 STAFF'S RECOMMENDATIONS**

If the Commission approves the proposed Project, we recommend the Commission's Order include the following measures as specific conditions. Recommendations 1 through 20 pertain to both Gulf South and Gulf Crossing (the Companies), 21 through 38 pertain to Gulf Crossing, and 39 pertains to Gulf South. We believe these measures would further minimize and mitigate the environmental impacts resulting from the construction and operation of the proposed Project.

1. The Companies shall follow the construction procedures and mitigation measures described in their application, supplemental filings (including responses to staff information requests), and as identified in the EIS, unless modified by the Order. The Companies 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 has delegated authority to take whatever steps are necessary to ensure the protection of all environmental resources during construction and operation of the Project. This authority shall allow:
  - a. the modification of conditions of the Commission's Order; and
  - b. the design and implementation of any additional measures deemed necessary (including stop work authority) to assure continued compliance with the intent of the environmental conditions as well as the avoidance or mitigation of adverse environmental impact resulting from Project construction and operation.
3. **Prior to any construction**, the Companies shall file an affirmative statement with the Secretary, certified by a senior company official, that all company personnel, EIs, and contractor personnel will be informed of the EI's authority and have been or will 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 location(s) shall be as shown in the EIS, as supplemented by filed alignment sheets, and shall include all of the staff's recommended facility locations. **As soon as they are available, and prior to the start of construction**, the Companies shall file with the Secretary any revised detailed survey alignment maps/sheets at a scale not smaller than 1:6,000 with station positions for all 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.

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

5. The Companies 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 OEP **prior to construction** in or near that area.

This requirement does not apply to route variations required herein 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 resources mitigation measures;
  - b. implementation of endangered, threatened, or special concern species mitigation measures;
  - c. recommendations by state regulatory authorities; and
  - d. agreements with individual landowners that affect other landowners or would affect sensitive environmental areas.
6. **Within 60 days of the acceptance of this certificate and prior to construction**, the Companies shall file an Implementation Plan with the Secretary for review and written approval by the Director of OEP describing how the Companies will implement the mitigation measures required by the Order. The Companies must file revisions to the plan as schedules change. The plan shall identify:
- a. how the Companies will 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;
  - b. the number of EIs assigned per spread, and how the company will ensure that sufficient personnel are available to implement the environmental mitigation;
  - c. company personnel, including EIs and contractors, who will receive copies of the appropriate material;
  - d. what training and instructions the Companies will give to all personnel involved with construction and restoration (initial and refresher training as the Project progresses and personnel change), with the opportunity for OEP staff to participate in the training session;
  - e. the company personnel (if known) and specific portion of the Companies' organization having responsibility for compliance;
  - f. the procedures (including use of contract penalties) the Companies will follow if noncompliance occurs; and
  - g. 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 mitigation training of onsite personnel;
    - (3) the start of construction; and
    - (4) the start and completion of restoration.

7. The Companies shall employ one or more EIs per construction spread. The EIs shall be:
  - a. responsible for monitoring and ensuring compliance with all mitigative 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 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. The Companies shall hire and fund a third-party compliance inspection contractor to work under the direction of the Commission Staff for the sole purpose of monitoring compliance with environmental conditions and mitigation measures. The Companies shall develop a draft monitoring program and obtain proposals from potential contractors to provide monitoring services and file the program and proposals with the Secretary for review and approval of the Director of OEP. The monitoring program shall include:
  - a. the employment by the contractor of one full-time, on-site monitor per construction spread;
  - b. the employment by the contractor of a full-time compliance manager to direct and coordinate with the monitors, manage the reporting system, and provide technical support to the FERC Staff;
  - c. a systematic strategy for the review and approval by the contract compliance manager and monitors of variances to certain construction activities as may be required by the Companies based on site-specific conditions;
  - d. maintenance of files for the daily and/or weekly inspection reports submitted by both the third-party monitors and the Companies' environmental inspector; and
  - e. a discussion of how the monitoring program can incorporate and/or be coordinated with the monitoring or reporting that may be required by other federal and state agencies.
9. The Companies shall file updated status reports with the Secretary on a **weekly** basis **until all construction-related activities, including restoration, are complete for each phase of the Project**. On request, these status reports will also be provided to other federal and state agencies with permitting responsibilities. Status reports shall include:
  - a. the current construction status of each spread, work planned for the following reporting period, and any schedule changes for stream crossings or work in other environmentally sensitive areas;
  - b. a listing of all problems encountered and each instance of noncompliance observed by the EI(s) 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);

- c. a description of corrective actions implemented in response to all instances of noncompliance, and their cost;
  - d. the effectiveness of all corrective actions implemented;
  - e. a description of any landowner/resident complaints that may relate to compliance with the requirements of the Order, and the measures taken to satisfy their concerns; and
  - f. copies of any correspondence received by the Companies from other federal, state or local permitting agencies concerning instances of noncompliance, and the Companies' response.
10. The Companies must receive written authorization from the Director of OEP **before commencing service** from the Project. Such authorization will only be granted following a determination that rehabilitation and restoration of areas affected by the Project are proceeding satisfactorily.
11. **Within 30 days of placing the certificated facilities in service**, the Companies 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 will be consistent with all applicable conditions; or
  - b. identifying which of the certificate conditions the Companies have complied with or will 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. The Companies shall develop and implement an environmental complaint resolution procedure. The procedure shall provide landowners with clear and simple directions for identifying and resolving their environmental mitigation problems/concerns during construction of the Project and restoration of the right-of-way. **Prior to construction**, the Companies shall mail the complaint procedures to each landowner whose property would be crossed by the Project.
- a. In their letter to affected landowners, the Companies shall:
    - (1) provide a local contact that the landowners should call first with their concerns; the letter shall indicate how soon a landowner should expect a response;
    - (2) instruct the landowners that, if they are not satisfied with the response, they should call the Companies' Hotline; the letter shall indicate how soon to expect a response; and
    - (3) instruct the landowners that, if they are still not satisfied with the response from the Companies' Hotline, they should contact the Commission's Enforcement Hotline at (888) 889-8030, or at [hotline@ferc.gov](mailto:hotline@ferc.gov).
  - b. In addition, the Companies shall include in their weekly status report a copy of a table that contains the following information for each problem/concern:
    - (1) the date of the call;
    - (2) the identification number from the certificated alignment sheets of the affected property and approximate location by MP;
    - (3) the description of the problem/concern; and

- (4) an explanation of how and when the problem was resolved, will be resolved, or why it has not been resolved.
13. The Companies shall not utilize or maintain a permanent right-of-way greater than 50 feet in width. (*Section 2.2.2*)
14. **Prior to construction**, the Companies shall file with the Secretary, for review and written approval by the Director of OEP, revised alignment sheets, and plans, and associated agreements indicating the use of at least 10 feet of adjacent pipeline rights-of-way as part of their 100 foot-wide nominal construction right-of-way and for any additional temporary workspaces that are needed. Where this is not possible, the Companies shall identify the locations by milepost and provide site-specific justification explaining why the adjacent right-of-way cannot be used. (*Section 2.2.2*)
15. **Prior to construction**, the Companies shall revise their SPCC Plan to include:
  - a. the restriction of refueling areas to a limited number of designated areas within wellhead protection areas;
  - b. the use of signs to mark each designated refueling area within wellhead protection areas; and
  - c. the labeling of each designated refueling area within wellhead protection areas by milepost on the construction alignment sheets. (*Section 3.3.1.1*)
16. **Prior to construction**, the Companies shall file with the Secretary for review field-delineated locations for all affected wetlands. (*Section 3.4.1.2*)
17. **Prior to construction**, the Companies shall finalize consultations with, MDWFP, ODWC, TPWD, LDWF, the Nature Conservancy, NRCS; local soil conservation agencies; and other appropriate agencies regarding seeding and vegetation restoration practices for the proposed Project. The Companies shall file with the Secretary for review a report that describes the outcome of these consultations and identifies the agency-recommended seeding and vegetation restoration practices. (*Section 3.5.2.1*)
18. The Companies shall finalize the Migratory Bird Plan in consultation with FWS in order to determine pre-construction survey requirements, impacts, right-of-way maintenance procedures, and mitigation for migratory birds, including bald eagles and any nests that may be encountered within or in close proximity to the construction right-of-way. The finalized document shall be filed with the Secretary **prior to construction**. (*Section 3.6.1.5*)
19. The Companies shall defer implementation of any treatment plans/measures (including archaeological data recovery); construction of facilities; and use of all staging, storage, or temporary work areas and new or to-be-improved access roads **until**:
  - a. The Companies file with the Secretary cultural resources survey and evaluation reports; any necessary treatment plans; and the Texas, Oklahoma, Louisiana, and Mississippi SHPO comments on the reports and plans; and
  - b. The Director of OEP reviews and approves all cultural resources survey reports and plans, and notifies the Companies in writing that treatment plans/procedures may be implemented and/or construction may proceed.

All material filed with the Secretary containing **location, character, and ownership information** about cultural resources must have the cover and any relevant pages therein clearly labeled in bold lettering: **“CONTAINS PRIVILEGED INFORMATION – DO NOT RELEASE.”** (*Section 3.10.4*)

20. **Prior to the start of construction**, the Companies shall file with the Secretary, for review and approval by the Director of OEP, a finalized noise mitigation plan for the HDD #14 Entry, HDD #22 Exit, and HDD #35 Exit. This plan shall identify all noise mitigation which the Companies would implement during drilling activity to reduce noise at the NSAs. Specifically, during HDD operations the Companies shall monitor noise and make all reasonable efforts to restrict noise increases from HDD operations to no more than 10 dBA above ambient if the resulting impact is above 55 dBA Ldn. In addition, the Companies shall file a finalized Noise Mitigation Plan for the HDD sites identified in Table 3.11.2-1 demonstrating that they will meet the mitigated noise levels. (*Section 3.11.2.3*)
21. **Prior to construction**, Gulf Crossing shall prepare a site-specific mitigation plan for Slough Creek that details the measures that would be used to stabilize and support revegetation of the banks of the creek following construction activities. (*Section 3.2.3.1*)
22. **Prior to construction**, Gulf Crossing shall file with the Secretary for review and approval of the Director of OEP an evaluation for alternative construction approaches or route variations to minimize impacts to high quality forested wetland crossings at MPs Z176.6, 217.0, 217.6, two forested wetlands at MPs 235.1 and 235.4 associated with and including Bayou D’Abornne at MP 235.3, and the two forested wetland crossings at MPs 273.1 and 273.2 associated with and including Cypress Creek at MP 273.3. The evaluations shall consider route variations, the use of HDDs, reduced construction rights-of-way, or other methods to minimize impacts. (*Section 3.4.2.1*)
23. **Prior to construction**, Gulf Crossing shall file with the Secretary for review and approval of the Director of OEP, and NRCS for review the construction and operational impacts to high quality cypress-tupelo forest associated with the route variation to avoid WRP lands located between MP AR295.6 to MP AR297.9. If high quality cypress-tupelo forest impacts are identified, Gulf Crossing shall evaluate alternative construction approaches or route variations to minimize impacts to the high quality forested wetland crossings. (*Section 3.4.2.1*)
24. Gulf Crossing shall complete its consultation with the COE on construction methods through the Bodcau WMA and file documentation of the results to the Secretary **prior to construction within the WMA**. (*Section 3.6.1.5*)
25. **Prior to construction across the Caddo Black Bayou Preserve**, Gulf Crossing shall complete its consultation with the Nature Conservancy regarding impacts and mitigation within the Preserve and file documentation of the results with the Secretary. (*Section 3.6.1.5*).
26. Gulf Crossing shall perform a pre-construction survey to determine if colonial nesting waterbird rookeries are occupied during the construction period and file the results with the Secretary for review and written approval. Gulf Crossing shall avoid construction activities within 1,000 feet of occupied rookeries during the period of September 1 through February 15. (*Section 3.6.1.5*)

27. Gulf Crossing shall **not begin** construction activities **until**:
  - a. the staff completes Section 7 consultations with the FWS; and
  - b. Gulf Crossing has received written notification from the Director of OEP that construction or use of mitigation may begin. (*Section 3.7.1*)
28. Gulf Crossing shall use qualified biologists to survey appropriate interior least tern nesting habitat found within 650 feet of any construction areas, should construction activities occur during the nesting season of May 15 to August 31. If any nesting sites are observed, Gulf Crossing shall immediately notify the Secretary and reinstate consultation with the FWS. (*Section 3.7.1*)
29. **Prior to construction**, Gulf Crossing shall finalize consultations with the TPWD Tyler Regional Complex to determine the need for additional surveys or mitigation that would further minimize or avoid potential impacts to the Louisiana black bear. Gulf Crossing shall file the results of this consultation with the Secretary. (*Section 3.7.1*)
30. **Prior to construction**, Gulf Crossing shall file the complete American burying beetle survey report with the Tulsa FWS and the Secretary. (*Section 3.7.1*)
31. **Prior to construction**, Gulf Crossing shall file with the Secretary the applicable levee crossing permits and authorizations issued by the Red River, Ouachita River, and Little Boeuf Bayou Levee Districts, Louisiana Levee Board, Louisiana Department of Transportation and Development, and COE. (*Section 3.8.4*)
32. **Prior to construction**, Gulf Crossing shall file with the Secretary the applicable documentation of meetings, special considerations, and agreements reached as a result of consultation with the Louisiana Management District regarding methods used to traverse the Richard Adcock and W.W. Farms tracts. (*Section 3.8.4*)
33. **Prior to construction**, Gulf Crossing shall continue to consult with the NRCS and FWS regarding special considerations and agreements for crossing the affected WRP special project area from MP 340.4 to MP 341.1. Gulf Crossing shall file with the Secretary for review all applicable documentation of meetings, special considerations, and agreements reached as a result of consultation with the FWS and NRCS regarding construction activities on the this WRP in Madison Parish. (*Section 3.8.4*)
34. **Prior to construction**, Gulf Crossing shall file with the Secretary for review and written approval by the Director of the OEP, final site screening plans for the Sherman and Paris Compressor Stations. Include copies of any screening plan agreements and correspondence with community groups. (*Section 3.8.6.2*)
35. Gulf Crossing shall file with the Secretary **no later than 60 days after placing the Sherman, Paris, Mira, and Sterlington Compressor Stations into service** compressor station noise surveys. If the noise attributable to the operation of the Sherman, Paris, Mira, or Sterlington Compressor Stations at full load exceeds an  $L_{dn}$  of 55 dBA at any nearby NSAs, Gulf Crossing shall file a report on what changes are needed and shall install the additional noise controls to meet the level **within 1 year of the in-service date**. Gulf Crossing shall confirm compliance with the above requirement by filing a second noise

survey with the Secretary **no later than 60 days after it installs the additional noise controls.** (*Section 3.11.2.3*)

36. Gulf Crossing shall incorporate the Everhart Route Variation II (MP 27.7 to 29.8) into the Gulf Crossing pipeline route. Gulf Crossing shall file with the Secretary for written review and approval by the Director of OEP, revised construction alignment sheets that show the modified route and workspaces, **prior to construction** in this area. (*Section 4.4.3*)
37. Gulf Crossing shall incorporate the Fannin County WRP Route Variation (MP 45.1 to 48.7) into the Gulf Crossing pipeline route. Gulf Crossing shall file with the Secretary, for written review and approval by the Director of OEP, revised construction alignment sheets that show the modified route and workspaces, **prior to construction** in this area. Further, Gulf Crossing shall consult with the NRCS regarding proposed crossing methods and mitigation measures for the Fannin County WRP located between MPs 46.7 and 47.8. Gulf Crossing shall file for review all applicable documentation of meetings, special considerations, and agreements reached as a part of consultation. (*Section 4.4.5*)
38. Gulf Crossing shall incorporate the Stonebridge Estates II Route Variation (MP 295.5 to 297.8) into the Gulf Crossing pipeline route. Gulf Crossing shall file with the Secretary, for written review and approval by the Director of OEP, revised construction alignment sheets that show the modified route and workspaces, **prior to construction** in this area. (*Section 4.4.9*)
39. Gulf South shall file with the Secretary **no later than 60 days after placing the authorized units at the Harrisville Compressor Station into service** compressor station noise surveys. If the noise attributable to the operation of the authorized units exceeds an  $L_{dn}$  of 55 dBA at any nearby NSAs, Gulf South shall file a report on what changes are needed and shall install the additional noise controls to meet the level **within 1 year of the in-service date.** Gulf South shall confirm compliance with the above requirement by filing a second noise survey with the Secretary **no later than 60 days after it installs the additional noise controls.** (*Section 3.11.2.3*)