

## **5.0 CONCLUSIONS AND RECOMMENDATIONS**

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

We have determined that construction and operation of the proposed SESH Project would result in limited adverse environmental impacts based on information provided by SESH and data developed from information requests; field investigations; literature research; alternatives analysis; comments from federal, state and local agencies; input from public groups and individual citizens; and the mitigation measures recommended below.

As part of our review, we developed specific mitigation measures that we believe would appropriately and reasonably reduce the environmental impacts resulting from construction and operation of the proposed Project. We believe that environmental impacts would be minimized if the proposed Project is constructed and operated in accordance with applicable laws and regulations, SESH's proposed mitigation, and our additional recommended mitigation measures. We are, therefore, recommending that our mitigation measures be attached as conditions to any authorization issued by the Commission. A summary of the anticipated Project impacts and our conclusions is provided below by resource area.

#### **5.1.1 Geology**

Construction and operation of the proposed Project would have minimal impact on geological resources. The primary effect of Project construction would be disturbances to the existing topography along the proposed pipeline construction right-of-way, but all areas disturbed during pipeline construction would be finish-graded and restored as closely as possible to preconstruction contours during cleanup and restoration. We are recommending that SESH work with NRCS to develop specific construction plans for the areas of erosion-prone soil that characterize the Loess Hills region in western Mississippi (see discussion in Soils below). No bedrock blasting is anticipated for the proposed Project. The proposed Project would be located in a region with a low risk of seismic activity, soil liquefaction, landslide susceptibility, and subsidence. Oil and natural gas extraction is common in the Project area, but construction and operation of the proposed Project would not negatively affect exploitable oil or natural gas resources. The proposed Project would cross one inactive quarry, which is currently crossed by another pipeline. SESH would obtain an easement that would avoid loss of access to this area.

#### **5.1.2 Soils**

The proposed Project would traverse a variety of soil types and conditions, including prime farmland and loess soils. Construction activities associated with the proposed Project, such as clearing, grading, trenching, and backfilling, could adversely affect soil resources by causing erosion, compaction, and the loss of soil productivity and fertility by mixing topsoil and subsoil horizons and changing drainage patterns. Such effects would be of particular concern in agricultural areas. SESH would implement the mitigation measures contained in its Plan to control erosion, ensure successful revegetation, and minimize any potential adverse impacts to soil resources. Specifically, potential soil impacts to agricultural areas would be mitigated through measures such as topsoil stripping, compaction testing and treatment, and monitoring of crop yields to ensure that yields in areas affected by construction were similar to yields in adjacent, undisturbed areas. Loess soils, where encountered, have a high susceptibility to erosion. We are also recommending that SESH conduct additional consultations with NRCS to develop a plan to avoid or minimize impacts to unstable loess soils. Additionally, SESH would further limit potential impacts to soil resources by implementing SESH's SPCC Plan and contaminated materials management plans and would develop location-specific restoration strategies based on

additional consultations with NRCS. Based on SESH's proposal, including implementation of its Plan, and our recommended mitigation, we believe impacts to soils would be minimized.

### **5.1.3 Water Resources**

Construction and operation of the proposed Project would be conducted in accordance with SESH's Plan and Procedures. SESH would avoid impacts to groundwater resources including sole-source aquifers, wellhead protection areas, drinking water wells, and springs by implementing the measures described in its procedures, and SPCC Plan. SESH has also committed to repair or replace wells damaged by construction.

The proposed Project would cross 192 perennial streams, 462 intermittent streams, and 17 ponds/lakes. As proposed, most minor and intermediate water body crossings would be accomplished using open-cut methods. Potential effects to major and sensitive water bodies (including water bodies with contaminated sediments) would be largely avoided through implementation of HDD installation techniques. Thirty-one waterbodies would be crossed using HDDs.

Proposed HDDs would cross 9 major and/or navigable streams (Macon Bayou, Tensas River, Mothiglan Bayou, Mississippi River, Bayou Pierre, Pearl River, Chickasawhay River, Big Black River, and Escatawpa River), 7 NRI-listed streams (Big Black River, Bayou Pierre, Pearl River, Bowie Creek, Okatoma Creek, Leaf River and Chickasawhay River), the rivers most likely to contain habitat for federally listed fish species (the Mississippi River, Bayou Pierre, Pearl River, Turkey Creek, and the Escatawpa River), and 10 impaired water bodies that occur along the proposed Project route. We are also recommending that SESH consult with the FWS and MDWFP regarding its proposed water crossing plans of the Choctaw, Crump, Dry, Gaines, Long, Mill, Silver, Shelton and Thompson creeks, due to the potential existence of habitat for federally listed fish species.

All water body crossings would be accomplished in accordance with SESH's procedures and the terms of any applicable federal or state permits that may be granted for the Project. We are recommending that SESH prepare and file site-specific HDD contingency plans that describe the procedures that would be implemented to monitor for, contain, and clean up any inadvertent releases of drilling fluids during HDD operations. To further minimize the impacts of HDD failures, we are recommending that SESH prepare a site-specific construction plan prior to open-cutting any surface waters previously designated as HDD crossings.

SESH has proposed to use surface waters for hydrostatic testing of the proposed pipeline, though municipal water supplies may be used as test water sources for some prefabricated pipe at aboveground facility sites. SESH would avoid or adequately minimize potential effects to water bodies resulting from hydrostatic testing by implementing SESH's procedures and avoiding the use of potentially toxic test water additives. Additionally, hydrostatic test waters would be sampled and treated, as required by conditions of SESH's state hydrostatic test water discharge permits, prior to discharge. Prior to construction, SESH would identify all intake and discharge locations for hydrostatic test waters.

Based on SESH's proposal, including implementation of its Plan and Procedures and our recommended mitigation, we believe impacts to water resources would be minimized and not significant.

#### **5.1.4 Wetlands**

Construction of the proposed Project would affect 267 wetland areas resulting in a total of approximately 238.8 acres of wetland disturbance, including approximately 159.8 acres of forested wetlands and approximately 78.9 acres of scrub-shrub or emergent wetlands. Sensitive wetland areas crossed include forested wetlands and potential pitcher plant bogs. SESH proposes permanent fill in wetlands associated with the pig receiver/Gulfstream meter site, PAR-RRL1, and the Rock Road meter site at the end of the Rock Road lateral. Construction of these facilities would result in conversion of 6.6 acres of PFO wetlands to uplands. SESH is currently evaluating ways to reduce the footprint of these facilities to minimize impacts. To reduce or avoid potential permanent impacts to wetlands, we are recommending that SESH file a plan to address construction of the aboveground facilities that would be located within wetland WE124, prior to the end of the DEIS comment period. The plan would include site-specific drawings illustrating the aboveground facilities' locations in relation to the wetland and a description of measures that would be implemented to reduce the amount of wetlands lost. In addition, the plan would describe potential facility alternative sites. SESH would avoid and minimize wetland impacts by reducing the construction right-of-way width through wetlands to 75 ft and reducing the maintained portion of the permanent pipeline right-of-way in wetlands to 30 ft. Following construction, affected wetlands located outside the maintained portion of the permanent pipeline right-of-way would be allowed to revert to preconstruction conditions. Impacts to emergent and scrub-shrub wetlands would be minor because regeneration to preconstruction conditions would occur rapidly in these areas and maintenance of the permanent pipeline right-of-way would not result in a permanent conversion of emergent wetlands. Impacts to forested wetlands would be either permanent or long-term due to the slow regeneration time of forested areas. The ADCNR identified one whitetop pitcher plant community as potentially existing in the project area. The MDWFP expressed concern about pitcher plant bogs. We are recommending that SESH coordinate with the ADCNR and MDWFP to develop a plan to minimize impacts on any pitcher plant bog communities.

The proposed project alignment would cross lands in the WRP. These lands are considered by the NRCS as jurisdictional wetlands. SESH is continuing to work with NRCS to avoid WRP lands to the greatest extent possible. We are recommending that SESH coordinate with the NRCS to develop procedures for crossing WRP lands that cannot be avoided.

SESH would minimize unavoidable wetland impacts by completing all wetland crossings in accordance with SESH's procedures 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. SESH is coordinating its proposed project activities with TNC, NRCS, and the FWS as discussed in Section 5.1.8.

Based on SESH's proposal, including implementation of its Plan and Procedures and our recommended mitigation, we believe impacts to wetlands would be minimized.

#### **5.1.5 Vegetation**

In addition to wetlands, construction and operation of the proposed Project would affect four upland vegetative communities: upland forest, pine plantation, agricultural land, and open lands. Approximately 54 percent of the upland vegetation resources affected during construction would consist of pine plantation and upland forest, with agricultural and open lands making up the remainder. Several extensive forested tracts and areas containing exotic and/or invasive plant species would also be crossed by the proposed pipeline route. Vegetative communities of special concern may be crossed by the pipeline including a potential whitetop pitcher plant community in Alabama and long-leaf pine ecosystems in

Mississippi and Alabama. We are recommending additional coordination with the ADCNR and the FWS to develop a plan to minimize impact on these communities.

SESH would restore all disturbed vegetated areas in accordance with its Plan and Procedures and the specific recommendations of local agencies and soil conservation services. 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 right-of-ways and through other previously disturbed areas to the extent practical. Additionally, many of the large forested tracts crossed by the proposed Project are subject to some disturbance associated with timber management programs. Given these measures and our recommendations for SESH to reduce impacts to vegetation communities of special concern and to develop plans to control the spread of invasive plant species in areas affected by construction, effects to upland vegetation would be minimized.

Based on SESH's proposal, including implementation of its Plan and Procedures and our recommended mitigation, we believe impacts to vegetation would be adequately minimized.

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

The wetlands and upland vegetation communities crossed by the proposed Project route support habitats that provide cover and forage for a variety of wildlife species including birds, mammals, reptiles, and amphibians. Physical disturbance, displacement, and clearing of herbaceous upland and wetland habitats would affect wildlife at or near the time of construction, but such effects would be largely temporary and many habitats would generally recover quickly following construction. Upland and wetland forested habitats would be affected due to a long-term conversion of wooded areas to successional stages in the temporary construction right-of-way and a permanent conversion to scrub-shrub or herbaceous levels within the permanent pipeline right-of-way. A bird rookery is located near MP 18.19 on the proposed route. To minimize impacts, we are recommending that SESH conduct a survey prior to constructing between February 16 and September 16 to verify the presence of birds at this location.

The water bodies that would be traversed by the proposed Project provide habitat for a variety of aquatic species including warm water fish and mussels. Potential impacts to fisheries and aquatic habitats would include sedimentation and turbidity, loss of cover, introduction of pollutants into the aquatic environment, potential blockage of fish migrations and interruptions of spawning, and entrainment or loss of stream flow during hydrostatic testing. As described above, all water body crossings would be accomplished in accordance with SESH's procedures and the terms of any applicable federal or state permits that may be granted. Direct impacts would be avoided by the use of HDD installation at many water body crossings. Aquatic habitat impacts at other crossing locations would be largely temporary as crossings would be completed in less than 48 hours in most instances. Additionally, intake screening to limit entrainment of fish and maintenance of adequate stream flow rates to protect aquatic life during hydrostatic test water withdrawals would further ensure that any Project-related impacts to aquatic species would be minor.

Based on SESH's proposal, including implementation of its Plan and Procedures and our recommended mitigation, we believe impacts to wildlife and aquatic resources would be adequately minimized.

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

Based on consultations with the FWS, 14 federally listed T&E species and 2 candidate species occur or potentially occur near the proposed Project.

We have determined that construction and operation of the proposed Project may affect, but is not likely to adversely affect, or would result in no affect to 13 of the federally listed endangered or threatened species. We are continuing to consult with the FWS concerning potential project effects to the federally listed gopher tortoise. Our assessment is that construction and operation of the proposed project would not significantly affect the two identified candidate species.

Based on consultation with the FWS and to further reduce potential impacts to and protect the eastern indigo snake, bald eagle, interior least tern, RCW, and Louisiana black bear, we are recommending additional impact minimization and mitigation measures.

This DEIS serves as our biological assessment for the proposed Project. Based on this assessment, we are requesting the initiation of formal consultation for the proposed Project. Because effects on the gopher tortoise require the initiation of formal consultation with the FWS and this consultation is incomplete, we are recommending that SESH not begin construction of the proposed Project until Section 7 consultation is complete.

In addition to federally listed species, other special-status species, including migratory bird species, colonial nesting water birds, and an additional 13 species listed as endangered, threatened, imperiled, or rare by the states of Louisiana, Mississippi, and Alabama, were identified through consultations with the MDWFP, ADCNR, and the LDWF. To ensure that these species are adequately protected, we are recommending that SESH continue to coordinate with these state agencies and identify its Plan to minimize or avoid potential impacts to state-listed or special-status species.

With the implementation of SESH's proposed mitigation, along with our recommended measures, we believe impacts on special-status species would be minimized. A biological opinion would be prepared by the FWS to address our analysis of the construction and operational impacts on the federally listed gopher tortoise.

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

Construction of the proposed Project would affect approximately 4,021.20 acres of land, including 3,354.70 acres for the pipeline construction right-of-way, 103.73 acres for the aboveground facilities and access roads, and 562.77 acres for extra work areas (extra workspaces, and pipe storage and contractor yards). Approximately 45 percent (or 1,831.62 acres) of the land that would be affected by construction is forest, 23 percent is agricultural, 20 percent is open land, and 8 percent is pine plantation. The remaining land-use categories (residential, industrial, and open water) make up less than 4 percent of the project area. 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 permanent pipeline right-of-way, aboveground facilities, and permanent access roads would encumber approximately 1,697.10 acres.

SESH proposes to use 125-ft-wide construction right-of-way for the entire length of its 42-inch-diameter pipeline. Other similar projects in Mississippi and Alabama propose to use a 100-ft-wide right-of-way for 42-inch-diameter pipeline. To minimize land disturbance to vegetative and environmentally sensitive areas (as identified in Table 3.5.1-2 and discussed in Section 3.5.2.1 of this DEIS), we are recommending that, prior to the end of the DEIS comment period, SESH file additional information

justifying the need for wider than 100-ft-wide construction right-of-way in environmentally sensitive areas. SESH proposed a 10-ft-wide buffer between its permanent right-of-way and that of the other utility corridors that the project would parallel. To further reduce the width of construction-related disturbance, we are recommending that SESH eliminate their proposed buffer zone and overlap the construction corridor with existing utility easements.

Six residential structures exist within 50 ft of the proposed Project's construction work space. One mobile home would be acquired through a purchase option contract. ESH has entered into an agreement with the landowner to purchase one residential property (MP 0.26) that would be permanently converted land classified as residential to the industrial/commercial land classification for construction and operation of the Delhi Compressor Station. Another mobile home would be avoided during the crossing of the Mississippi River by HDD. Three structures are located within the construction work space due the constraints of a former landfill on the west side of the right-of-way. We are recommending that site-specific construction plans be developed for these three structures and filed prior to the end of the comment period on the DEIS.

Several electric power lines would be constructed to serve the three new compressor stations and the two new booster stations proposed by SESH. Although we consider these facilities to be outside the Commission's jurisdiction, they are directly related to the Project. Therefore, to fully comply with NEPA requirements, we are recommending SESH not begin service to its project until staff receives comments from the FWS and SHPO regarding the proposed electric service lines and it receives written notification from the Director of OEP that service may begin.

Although the Project would not directly cross the Tensas NWR, SESH proposes to cross fee title land and conservation easements managed by the Tensas NWR. In addition SESH would cross land adjacent to the Pascagoula WMA, which is owned by the Mississippi Chapter of TNC. SESH has not provided plans crossing these areas, so we are recommending that SESH file plans for crossing these areas. The Project would also cross the Natchez Trace Parkway, which is managed by the NPS. A separate environmental analysis has been prepared to assess the potential impacts to the Parkway (Appendix G). The NPS concludes that, based on the selected route and crossing location of the Parkway; the resources present; potential impacts, including cumulative impacts; and mitigation measures, construction and operation of the proposed Project would not have a significant effect on the Natchez Trace Parkway. Highway 90 (The Old Spanish Trail) in Mobile County, Alabama, would be crossed using a bore technique; no adverse impact would result from this crossing.

SESH proposes to cross CRP, CREP, and WRP lands and would continue to consult with the applicable agencies and landowners regarding potential Project-related effects to these lands. We are recommending that SESH consult with the FSA and NRCS, prior to the end of the DEIS comment period, to develop a plan that would avoid or minimize impacts on these lands and justify why or why not SESH would adopt these measures. In addition, SESH's Project crosses lands that are enrolled in the FWS' Partners Program. SESH is currently coordinating easement agreements with landowners and the FWS for crossing these lands. We are recommending that SESH consult with the FWS, prior to the end of the DEIS comment period, to develop a plan that would avoid or minimize impacts on these lands and justify why or why not SESH would adopt any recommended measures.

Coastal zone consistency statements would be required where the Project crosses designated coastal zones in Alabama and Mississippi. SESH has submitted information to the agencies for evaluation, but has not yet received determination regarding the Project's consistency with the state coastal management programs. We are recommending that SESH file a copy of the CZMA consistency determinations for Alabama and Mississippi prior to construction.

Visual resources along the proposed Project route would be affected by the installation of some aboveground facilities and alteration of existing vegetative patterns associated with clearing and maintenance of the construction and permanent pipeline rights-of-way. However, the impact is not expected to be significant. Existing and proposed vegetation would provide a visual screen of these facilities.

Based on SESH's proposal, along with our recommended measures to reduce impacts on special-interest lands, land use, and land requirements, we believe impacts to land use, special interest areas, and visual resources would be minimized.

### **5.1.9 Socioeconomics**

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 effects would be offset by increased tax revenues to local governments. The proposed Project would have positive impacts on local spending, employment, and tax income during construction and operation, but such contributions would likely be minimal.

### **5.1.10 Cultural Resources**

SESH conducted cultural resource surveys at the proposed pipeline, ATWS areas, associated aboveground facilities, access roads, and pipe yards and ware yards of the proposed Project route through Louisiana, Mississippi, and Alabama. In Louisiana, two previously identified archeological sites that meet the criteria to be listed on the NRHP would be avoided through modified construction techniques. Three newly identified archeological sites potentially eligible for the National Register are being tested further to verify their eligibility. In Mississippi, SESH identified three potentially eligible archeological sites. These sites are also being tested further to verify their eligibility. No potentially eligible archeological sites were identified in Alabama. No historic cemeteries or historic structures are located near the proposed Project. Continued consultation with the SHPOs is recommended to verify the status of the potentially eligible sites. If significant historic properties cannot be avoided, treatment plans would be developed and implemented to ensure recovery of any information that might be lost to construction impacts. We are recommending that SESH defer construction until surveys and evaluations of areas not previously accessed 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**

Air quality impacts associated with construction of the proposed Project would include emissions from fossil-fueled construction equipment and fugitive dust. However, such air quality impacts would generally be temporary and localized and are not expected to cause or contribute to a violation of applicable air quality standards. The proposed compressor stations would emit air pollutants as a result of combustion of natural gas to drive the compressor units and the periodic operation of auxiliary generators. The air emissions associated with the operation of the Delhi, Gwinville, and Lucedale compressor stations would meet federal or state ambient air quality standards. Initial screening modeling of the Collins and Petal booster stations indicates that air emissions could generate impacts that would cause exceedances of federal ambient air quality standards. We are recommending that, prior to the end of the DEIS comment period, a refined air modeling analysis be conducted to better predict and evaluate impacts for these two stations.

Impacts to noise quality associated with construction of the proposed Project would generally be temporary, minor, and limited to daylight hours except at HDD sites where drilling and related construction equipment would likely operate on a continuous basis. In its application, SESH stated it would perform noise analyses to determine potential impacts to NSAs from HDD activities. When HDD locations are finalized, SESH would determine the nearest NSAs within 0.5 mile of each HDD. We are recommending that, prior to the end of the DEIS comment period, SESH file its HDD noise analysis for all finalized HDD entry and exit locations with NSAs within 0.5 mile.

The proposed compressor stations would also generate noise on a continuous basis during operations. However, the predicted noise levels attributable to operations of the new compressor stations would not result in significant effects on the NSAs nearest to those facilities. Additionally, we have included recommendations for completion of post-construction noise surveys and implementation of additional mitigation measures, if required, to ensure that actual noise levels resulting from Project operations would not exceed significant or existing levels.

With the implementation of SESH's proposed mitigation and our recommendations, we believe impacts on air quality and noise would be minimized.

#### **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, SESH 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**

We identified seven past, present and reasonably foreseeable future projects, all of which are natural gas transmission pipeline projects planned or proposed in Louisiana and Mississippi that would potentially result in a cumulative impact when considered with the proposed project. One of these is already approved by the Commission and has been constructed (Carthage to Perryville Project, CP06-85). Two projects are currently filed at the Commission (Gulf South's ETM Expansion Project (CP06-446) and Gulf South's Southeast Expansion Project (CP07-32). The other four projects are being planned and are undergoing the Commission's pre-filing process: Ozark East End Expansion Project (PF06-34), Gulf Crossing Project (PF07-1), Fayetteville/Greenville Expansion Project (PF07-2), and Midcontinent Express Project (PF07-4). Construction of these projects is projected to occur between the years 2006 through 2009.

Each of these projects would result in temporary and minor effects during construction, but each project would be designed to avoid or minimize impacts on the human environment and to wetlands, water bodies, protected and special-status species, and other sensitive resources. Additionally, significant unavoidable impacts to sensitive resources resulting from these projects would be mitigated. Mitigation generally leads to the avoidance or minimization of cumulative impacts. We, therefore, consider that the potential cumulative impacts of the already constructed Carthage to Perryville Project would be minimized. Any of the other proposed or planned projects that would come before the Commission would also be the subject of our NEPA review to avoid or minimize impacts.

We believe that impacts associated with the proposed Project would be relatively minor overall, and we have included recommendations in this DEIS to further reduce the environmental impacts associated with the Project. The environmental impacts associated with the SESH Project would be minimized by careful project routing, use of HDD techniques to avoid or minimize impacts on sensitive

resources, and implementation of appropriate mitigation measures. Consequently, a small but insignificant cumulative effect is anticipated when the impacts of the proposed Project are added to past, present, or reasonably foreseeable future projects in the area.

#### **5.1.14 Alternatives**

As an alternative to the proposed action, we evaluated the no action or postponed action alternatives, system alternatives, route alternatives, route variations, and aboveground facility site alternatives. While the no action alternative would eliminate the short- and long-term environmental impacts identified in this DEIS, the objectives of the proposed Project would not be met, and SESH would not be able to provide a new source of natural gas to markets that can be accessed through the proposed pipeline interconnects.

Our analysis of system alternatives included an evaluation of whether existing and proposed natural gas pipeline systems would meet the proposed Project objectives while offering an environmental advantage over the proposed Project. While two existing pipeline systems are located in the general vicinity of the proposed Project, none of these have sufficient available capacity to carry the volumes of the proposed Project without substantial system upgrades, such as new or increased compression, new pipeline looping, or greenfield pipeline.

We evaluated two modified system alternatives that would involve new pipeline connection to the existing 30-inch-diameter Transco Line, which runs north to south for the length of Alabama (Transco Alternative 1 and Transco Alternative 2). The Transco alternatives offered some environmental advantages to reduce the amount of greenfield pipeline construction. These alternatives would require additional compression (a permanent environmental impact) and posed other engineering constraints. Staff is preparing a data request to further investigate whether a SESH-Transco combined system is viable from an operational standpoint, and our analyses of these alternatives are not complete. If the staff finds that the Transco's system alternatives are not viable, we do not object to the construction and operation of SESH's proposal, because our conclusion in this DEIS finds that SESH's proposal, with our recommendations, would have a limited adverse impact.

We also evaluated the alternative route analysis that SESH used to design the proposed route. SESH attempted to avoid or significantly reduce impacts on sensitive resources in its initial planning and siting of its proposal. Additionally, route variations were identified to resolve or reduce construction impacts to localized, specific resources and to accommodate landowner requests during the pre-filing and scoping periods for the proposed Project. More than 70 variations were incorporated in the proposed route because of comments received during the NEPA process. Due to the changes already made in the routing and the lack of significant resource impacts, no additional route variations or alternatives were identified. We anticipate that minor alignment shifts would be made prior to and during construction to accommodate other such site-specific circumstances and landowner concerns.

We also 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. Because the location of the aboveground facilities would be linked to the location of the pipeline, the search for alternatives was constrained to sites located adjacent to the proposed Project route. However, two alternative locations for aboveground facilities were selected to reduce impacts to the environment. We did not identify any alternative sites for the proposed M&R or mainline valve facilities that would offer a significant environmental advantage to the proposed sites. In conclusion, we have determined that the proposed SESH Project, as modified by our recommended mitigation and minor route variation, is the preferred alternative.

## 5.2 FERC STAFF'S RECOMMENDED MITIGATION

If the Commission issues a Certificate for the proposed Project, we recommend that the Commission's Order include the following specific conditions. We believe that these measures would further mitigate the environmental impacts associated with the construction and operation of the proposed Project.

1. SESH shall follow the construction procedures and mitigation measures described in its application, supplemental filings (including responses to staff information requests), and as identified in the EIS, unless modified by the Order. SESH 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**, SESH 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 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**, SESH 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.

SESH's 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. SESH's right of eminent domain granted under NGA Section 7(h) does not authorize it to increase in the size of its 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. SESH 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, 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, 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 the following:

- 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**, SESH shall file an initial Implementation Plan with the Secretary for review and written approval by the Director of OEP describing how SESH will implement the mitigation measures required by the Order. SESH must file revisions to the plan as schedules change. The plan shall identify:
    - a. how SESH 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 SESH 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 SESH's organization having responsibility for compliance;
    - f. the procedures (including use of contract penalties) SESH will follow if noncompliance occurs; and

- g. for each discrete facility a Gantt or Program Evaluation and Review Technique (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. SESH 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. SESH 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 scheduling 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 SESH from other federal, state, or local permitting agencies concerning instances of noncompliance and SESH's response.
9. SESH must receive written authorization from the Director of OEP **before commencing service** for each phase of the Project. Such authorization will only be granted following a determination that rehabilitation and restoration of areas affected by the Project are proceeding satisfactorily.
10. **Within 30 days of placing the certified facilities in service**, SESH 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 SESH has 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.
11. SESH 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**, SESH shall mail the complaint procedures to each landowner whose property would be crossed by the Project.
  - a. In its letter to affected landowners, SESH shall:
    - (1) provide a local contact that the landowners should call first with their concerns; the letter should 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 SESH's Hotline; the letter should indicate how soon to expect a response; and
    - (3) instruct the landowners that if they are still not satisfied with the response from SESH's 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, SESH shall include in its 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.
12. **SESH shall not begin service until** the staff receives comments from the Fish and Wildlife Service and SHPO regarding the proposed electric service lines to compressor stations, the staff completes

formal consultation with the FWS and SHPOs, if required, and SESH has received written notification from the Director of OEP that service may begin. (*Section 1.0*)

13. **Prior to the end of the draft EIS comment period**, SESH shall modify its project right-of-way requirements and file with the Secretary revised figures and alignment sheets to reflect removal of the proposed 10-foot buffer between the edge of the permanent right-of-way and foreign pipeline rights-of-way. In addition, SESH shall evaluate and file written documentation for the use of at least 10 feet of any adjacent pipeline right-of-way as part of its construction right-of-way and for any additional temporary workspaces that are needed. Where this is not possible, SESH shall identify the locations by milepost and provide site-specific information explaining why the adjacent right-of-way cannot be used. (*Section 2.0*)
14. **Prior to the end of the draft EIS comment period**, SESH shall file with the Secretary additional information justifying any need for wider than 100-foot construction right-of-way and associated workspace in sensitive locations such as large relatively nonfragmented forested tracts, unique or sensitive vegetative communities, (as referenced in Tables 3.5.1-2 and 3.6.1-2). As applicable, SESH shall identify site specific locations, by milepost, where a greater than 100-foot-wide construction right-of-way would be necessary. (*Section 3.5.2.1*)
15. **Prior to the end of the draft EIS comment period**, SESH shall file with the Secretary a plan developed in consultation with the NRCS regarding the management of loess soils. This plan shall indicate any NRCS recommendations to minimize or mitigate impacts to loess soils and state whether or not these recommendations would be adopted and if not, explain why. (*Section 3.2*)
16. SESH shall not begin an open-cut crossing of any of the waterbodies proposed to be crossed using HDD until the HDD attempt has failed and it files an amended crossing plan with the Secretary for review and written approval by the Director of OEP. The amended crossing plan shall include site-specific drawings identifying all areas that would be disturbed using the proposed alternate crossing method. SESH shall file the amended crossing plan concurrent with the appropriate state and federal applications required for implementation of the plan. (*Section 3.3.2.4*)
17. **Prior to the end of the draft EIS comment period**, SESH shall file with the Secretary a report summarizing consultations with the MDWFP and the FWS regarding the proposed sensitive waterbody crossings of Choctaw, Crump, Dry, Gaines, Long, Mill, Silver (West and East Prong), Shelton and Thompson Creeks. (*Section 3.3.2.1*)
18. **Prior to construction**, SESH shall file with the Secretary, for review and written approval by the Director of OEP, a detailed HDD Contingency Plan for the Project (e.g. alternative construction measures, agency and emergency contact information, required equipment and materials). (*Section 3.3.2.4*)
19. **Prior to the end of the draft EIS comment period**, SESH shall file with the Secretary, its site-specific plan for constructing and installing the aboveground facilities that would be located within wetland WE124. This plan shall include site-specific drawings that illustrate the aboveground facilities' locations in relation to the wetland and include a description of measures that SESH would implement to reduce the amount of wetlands lost. The plan shall also describe potential facility alternative sites that SESH considered during its planning of the aboveground facilities. (*Section 3.4.3.1*)
20. **Prior to construction**, SESH shall file with the Secretary for review and written approval by the Director of OEP, a Pitcher Plant Bog Plan, developed in consultation with the MDWFP and ADCNR

NHP that describes how SESH would identify pitcher plant bogs during construction, and the measures, in addition to those in SESH's Procedures, SESH would implement to minimize impacts to these areas. (*Section 3.4.3.1*)

21. **Prior to construction**, SESH shall file with the Secretary for review and written approval by the Director of OEP, a Longleaf Pine Vegetative Community Plan, developed in consultation with the FWS that describes how SESH would identify longleaf pine vegetative communities during construction, and the measures, in addition to those in SESH's Plan and Procedures, SESH would implement to minimize impacts to these areas. (*Section 3.5.2.1*)
22. **Prior to construction**, SESH shall file with the Secretary, for review and written approval by the Director of OEP, an Exotic and Invasive Species Control Plan developed in consultation with the FWS, LDWF, MDWFP, and ADCNR. This plan shall identify the specific measures that SESH would implement during construction and operation to control exotic and invasive plant species. (*Section 3.5.2.4*)
23. SESH shall not construct near the bird rookery at MP 18.19 between February 16 and September 1 until a rookery survey is filed with the Secretary for review and written approval of the Director of OEP. (*Section 3.6.1.5*)
24. SESH shall adhere to the following eastern indigo snake protection measures:
  - a. If an eastern indigo snake is sighted during construction, the contractor will be required to cease all operation(s) which might cause harm to the snake.
  - b. If the snake does not move away from the construction area, a state or federal biologist will be contacted to capture and relocate the snake to suitable habitat either adjacent to the Project area or off-site to an acceptable donor site.
  - c. If an eastern indigo snake is killed or found dead within the construction area, the snake shall be frozen and the FWS Jackson Field Office notified immediately. (*Section 3.7.1.11*)
25. SESH shall immediately notify the FERC staff and the FWS if bald eagles or their nests are observed within 1,500 feet of work activities prior to or during construction. (*Section 3.7.1.13*)
26. SESH shall immediately notify the FERC staff and the FWS if interior least terns are observed within 650 feet of proposed waterbody crossings prior to or during construction. (*Section 3.7.1.14*)
27. **Prior to the end of the draft EIS comment period**, SESH shall develop, in consultation with the FWS, a Red Cockaded Woodpecker Management Plan. This plan shall include the results of additional site specific surveys for red cockaded woodpeckers and measures that SESH would implement to avoid impacts to red cockaded woodpeckers. (*Section 3.7.1.15*)
28. **Prior to the end of the draft EIS comment period**, SESH shall develop a Louisiana Black Bear Management Plan in consultation with the FWS. This plan shall identify potential Louisiana black bear habitat and describe construction and operation measures SESH would implement to avoid impacts to this species. (*Section 3.7.1.16*)
29. SESH shall **not begin construction** activities until:
  - a. the staff completes Section 7 consultations with the FWS; and

- b. SESH has received written notification from the Director of OEP that construction or use of mitigation may begin. (*Section 3.7.1.17*)
30. **Prior to construction**, SESH shall consult further with the LDWF, MDWFP and the ADCNR regarding the need for additional surveys or mitigation to further minimize or avoid potential impacts to state listed species. SESH shall file the results of its consultation, and indicate whether it would adopt any mitigation measures recommended by the agencies, and, as applicable, explain why measures were not adopted. (*Section 3.7.2*)
31. **Prior to the end of the draft EIS comment period**, SESH shall file a site-specific plan for the residences at MP 261.9. The plan shall include:
- a. a description of construction techniques to be used (such as reduced pipeline separation, centerline adjustment, use of stove-pipe or drag-section techniques, working over existing pipelines, pipeline crossover, bore, etc.), and include a dimensioned site plan that shows:
    - i. the location of the residence in relation to the new pipeline and, where appropriate, the existing pipelines;
    - ii. the edge of the construction work area;
    - iii. the edge of the new permanent right-of-way; and
    - iv. other nearby residences, structures, roads, or waterbodies
  - b. the location of the residence in relation to the new pipeline and, where appropriate, the existing pipelines; a description of how SESH will ensure the trench is not excavated until the pipe is ready for installation and the trench is backfilled immediately after pipe installation; and
  - c. evidence of landowner concurrence if the construction work area and fencing will be located within 10 feet of a residence. (*Section 3.8.3.1*)
32. **Prior to construction**, SESH shall file with the Secretary a plan, developed in consultation with the FWS, for the crossing of the fee title and conservation easement lands near MP 5.6 to 6.0. (*Section 3.8.5*)
33. **Prior to construction**, SESH shall file with the Secretary a plan, developed in consultation with The Nature Conservancy, to cross the property between MP 209.1 and MP 210.5. (*Section 3.8.5*)
34. **Prior to the end of the draft EIS comment period**, SESH shall file with the Secretary, a plan developed in consultation with the FWS for crossing FWS Partners Program lands. This plan shall indicate any avoidance, minimization, and mitigation measures identified by the FWS, state whether or not these measures would be adopted, and explain as applicable the justification for not adopting these measures. (*Section 3.8.5*)
35. **Prior to the end of the draft EIS comment period**, SESH shall file with the Secretary, plans developed in consultation with the FSA for crossing CRP and CREP lands and the NRCS regarding the crossing of WRP lands. These plans shall indicate any avoidance, minimization, and mitigation measures identified by the FSA and/or the NRCS, state whether or not these measures would be adopted, and explain as applicable the justification for not adopting these measures. (*Section 3.8.5*)

36. **Prior to construction**, SESH shall file with the Secretary documentation of concurrence from the Mississippi Department of Marine Resources and the ADEM that the proposed Project is consistent with the Mississippi and Alabama Coastal Zone Management Plans. (*Section 3.8.5*)
37. SESH 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. SESH files with the Secretary cultural resources survey and evaluation reports; any necessary treatment plans; and the Louisiana, Mississippi and Alabama 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 SESH 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*)

38. SESH shall file noise surveys with the Secretary **no later than 60 days** after the authorized units at each new compressor and booster station is placed into service. If the noise levels attributable to unit operations exceed an LDN of 55 dBA at any nearby NSAs, SESH shall file a report on what changes are needed and shall install the additional noise controls to satisfy the required noise level **within one year of the in-service date**. To confirm compliance with the above requirement, SESH shall file a second noise survey with the Secretary **no later than 60 days** after additional noise controls are installed. (*Section 3.11.2.3*)
39. **Prior to the end of the draft EIS comment period**, for each HDD entry and exit location within 0.5 mile of NSAs, SESH shall file its noise analysis. (*Section 3.11.2.2*)
40. **Prior to the end of the draft EIS comment period**, SESH shall perform a refined air modeling analysis, for the Collins Booster Station and Petal Booster Station to quantify emission impacts to air quality in the region. The Collins Booster station shall be modeled for NO<sub>x</sub> and PM<sub>2.5</sub> and the Petal Booster Station shall be modeled for PM<sub>2.5</sub>. The refined modeling shall include emissions from all sources at the facilities. SESH shall also discuss the feasibility of emission controls and demonstrate compliance with NAAQS. (*Section 3.11.1*)