

## **4.0 ALTERNATIVES**

We evaluated alternatives to the proposed SESH Project to determine whether they would be reasonable and environmentally preferable to the proposed action. We considered the no action or postponed action alternative, system alternatives, major route alternatives, route variations, and aboveground facility site alternatives. Identification of alternatives to the proposed Project incorporated public comments and input received from federal, state, and local regulatory agencies.

We used the following evaluation criteria to determine whether or not alternatives would be environmentally preferable:

- whether the alternative would provide a significant environmental advantage over the proposed Project,
- the ability of the alternative to meet the proposed Project objectives, and
- whether the alternative was technically and economically feasible and practicable.

SESH participated in FERC's pre-filing process during the preliminary design stage for the proposed Project. This process emphasized identification of potential stakeholder issues early in the development of a project and identification and evaluation of alternatives that may avoid or minimize these issues. As SESH conducted preliminary analyses of possible routes, it identified issues of concern, and multiple stakeholders provided SESH and the FERC with comments as route planning progressed.

### **4.1 NO ACTION OR POSTPONED ACTION ALTERNATIVE**

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

SESH's objective for the proposed Project is to provide a direct connection between growing onshore natural gas supplies and the growing Florida and southeastern market(s). The proposed Project would enhance the energy reliability, flexibility, and security of the pipeline grid in the Gulf Coast region as well as in the northeastern and southern United States. The proposed Project would also increase access to supplies and markets, thereby increasing healthy competition via new firm transportation services.

The proposed Project would provide access to diverse sources of natural gas including emerging basins of new supply such as Barnett Shale, Bossier Sands, and Arkoma and Fayetteville shales, as well as providing access to traditional Gulf Coast supplies. Access to these diverse supply sources would provide additional reliability and flexibility to the growing markets. The proposed Project would be capable of moving approximately 1.14 Bcfd, with receipts from the Perryville Hub in northeastern Louisiana and delivery into Gulfstream Natural Gas System (Gulfstream), SONAT, Mobile Gas Services, and the FGT. In addition, the proposed Project would act as a virtual header system capable of receiving and delivering natural gas to the customers of Columbia Gulf Transmission (Columbia Gulf), CEGT, Gulf South, TETLP, SONAT, Transco, Tennessee Gas, FGT, Mobile Gas Services, and Gulfstream. The interconnections would also provide access to multiple high-deliverability storage projects. In the aggregate, this result would be increased competition in the market areas.

SESH designed the proposed Project so that it would enhance the seasonal demand requirements of multiple regional markets. Depending on the season, the proposed Project, via its interconnections with

multiple interstate transmission systems, would help to offset a portion of the declining supply from the shallow water GOM continental shelf while maintaining peak day deliveries to northeastern and southeastern customers. In addition, the SESH system would be a reliable source of supply to the Florida market during the summer as SESH mainly sources its gas from the Perryville Hub, which is not sensitive to inclement weather. Consequently, the proposed Project would provide multiple shippers with additional capacity and enhanced reliability and consumers with increased opportunities for price competition.

Absent this project, SESH would not be able to meet its customers' need for capacity and would not increase the flexibility and reliability of the pipeline grid and access to supplies and markets in the Gulf Coast region. As designed, the proposed pipeline would have a daily design capacity of 1,140 million cubic feet (MMcf) per day from Delhi near the Perryville Hub in Louisiana, to Coden, Alabama.

If the FERC denies SESH's application, the short-term and long-term environmental impacts identified in this DEIS would not occur. If the Commission postpones action on the application, the environmental impacts identified in this DEIS would be delayed, or if SESH decided not to pursue the proposed Project, the impacts would not occur at all. However, if the FERC were to select the no action or postponed action alternatives, 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 pipeline interconnects.

Although it would be purely speculative and beyond the scope of this analysis to attempt to predict what actions might be taken by policy makers or end users in response to the no action or postponed action alternatives, it is likely that potential end users would make other arrangements to obtain natural gas service (e.g., LNG-derived natural gas or non-LNG-derived natural gas from another project) or make use of alternative fossil-fuel energy sources (e.g., fuel, oil, or coal), other traditional long-term fuel source alternatives (e.g., nuclear power or hydro power), or renewable energy sources, such as wind power, to compensate for the reduced availability of natural gas that would be supplied by the proposed Project. It is also possible that energy conservation practices would be used to offset the demand for natural gas in the markets that would be supplied by the proposed Project.

To the limited extent that other fuels could be used to serve the energy needs for the customers of the interconnecting pipelines, the use of oil, coal, or nuclear fuels has intrinsic environmental disadvantages when compared to natural gas. These disadvantages include the degradation of air quality and potential for spills or leaks. The use of solar, geothermal, or other alternative energy sources has not been developed such that these alternative sources would be viable options for replacing the natural gas supply provided by the proposed SESH Project.

In light of the preceding analyses, we do not recommend the no action alternative or the postponed action alternative.

## **4.2 SYSTEM ALTERNATIVES**

System alternatives are those alternatives that could replace all or part of the proposed Project by making use of existing natural gas pipeline facilities to meet the stated objectives of the proposed Project. Although a system alternative would make it unnecessary to construct all or part of the proposed Project, modifications or additions to an existing pipeline system or an entirely new system would be required to increase capacity and carry the proposed volumes as proposed in SESH's application. These modifications or additions likely would result in environmental impacts that could be less than, similar to, or greater than those associated with construction of the proposed Project. The purpose of identifying and evaluating system alternatives is to determine whether potential environmental impacts associated with

construction and operation of the proposed facilities would be avoided or reduced by using another pipeline system while still meeting the objectives of the proposed Project.

The following analysis examines one existing and one proposed natural gas system that currently or would eventually serve the markets targeted by the proposed Project and considers whether those systems would meet the proposed Project objectives while offering an environmental advantage over the proposed Project.

#### **4.2.1 Gulf South System Alternative**

SESH presented one pipeline-system alternative, using the existing Gulf South Pipeline system. Gulf South currently operates an interstate pipeline system in Texas, Louisiana, Mississippi, Alabama, and Florida. The Gulf South system is connected from the Perryville Hub to Coden through a single 30-inch-diameter pipeline of relatively low pressure compared to the proposed SESH facilities. The Gulf South system spans several states for about 470 miles and the pipe diameter is smaller. Due to the smaller diameter pipe, the capacity of the Gulf South system is limited to approximately 400 to 500 MMcf per day. Currently, Gulf South has a commitment of at least 50 percent of that capacity for its existing customers, thus rendering only 200 to 250 MMcf per day to the incremental market at Coden. In addition, the interconnections with other pipelines are limited to receipt or delivery only; thus, the existing Gulf South system is unable to operate as a virtual pipeline header like the proposed SESH system. The existing Gulf South system cannot achieve the goals of reliability enhancement and market and supply flexibility. Based on these design considerations, we believe the existing Gulf South system would not meet the objectives of the proposal, and we eliminated it from further consideration.

#### **4.2.2 Gulf South System Alternative (Proposed East Texas to Mississippi Expansion Project)**

Gulf South has proposed to construct and operate a pipeline that would traverse Louisiana and southwestern Mississippi. As shown in Figure 4.2-1, the easternmost portion of this proposed pipeline would be located in the general vicinity of a portion of the proposed Project. We are currently evaluating the Gulf South ETM Expansion Project (Docket No. CP06-446-000). The Gulf South Project, as proposed, would include 242 miles of 42-inch-diameter pipeline from Keatchie in Desoto Parish, Louisiana, to Harrisonville in Simpson County, Mississippi, where it would tie into the existing 30-inch-diameter Gulf South pipeline system. Gas would be delivered into the 30-inch system at a relatively low MAOP of 680 to 935 psig, consistent with its limited capacity. For the proposed Gulf South ETM Expansion Project to deliver the volumes of gas proposed by SESH, we estimate that an additional 174 miles of medium- to large-diameter, high-pressure pipeline would have to be built to extend delivery from the Harrisonville area to Coden, in Mobile County. In addition, Gulf South's proposed expansion is designed to serve specific customers, and it is unlikely that Gulf South's expansion could effectively serve SESH's customers along with its own contractual commitments without the construction of additional looping, greenfield<sup>2</sup> pipeline, and compression. Even if Gulf South were to construct these facilities, SESH's project objectives of reliability enhancement and market supply optionality would not be achieved. Therefore, we believe the proposed Gulf South expansion alone would not meet the project objectives, and we eliminated it from further consideration.

#### **4.2.3 Transco System Alternatives**

Two system alternatives (Transco System Alternatives 1 and 2) were identified that would follow or use a portion of the Transco Mobile Bay lateral to transport gas in an attempt to minimize the amount of greenfield pipeline associated with SESH's proposal.

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<sup>2</sup> Greenfield land is a term used to describe a piece of undeveloped land, either currently used for agriculture or just left to nature.

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Figure 4.2-1  
Proposed Gulf South System Alternative**

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#### **4.2.3.1 Transco Alternative 1 (Delhi to Butler to Coden)**

Transco System Alternative 1 deviates from the proposed Project at approximate MP 51.0, traveling due east from that point for approximately 150 miles to tie into the existing 30-inch-diameter Transco Mobile Bay lateral (Transco line) at Compressor Station 85, near Butler in Choctaw County, Alabama (see Figure 4.2-2). From this point, SESH would use a 123.5-mile section of the Transco line to transport gas to Coden. Under this alternative, SESH would need a 15-mile loop of 36-inch pipeline (new right-of-way) near Compressor Station 85. According to SESH, the Transco System Alternative 1 would have the same operational flexibility and pipeline connectivity as the proposed Project, and, if built, potentially it would be able to meet SESHs' current capacity requirements.

The corridor construction of this alternative would result in approximately 54 less miles of new greenfield right-of-way than the proposed Project (165 miles of new greenfield right-of-way versus 219 miles under the proposed Project). Our review of the alternative route indicates the lands crossed contain a higher percentage of forested land on average per mile than the proposed Project. We calculate that forested land affected would be approximately 15 miles (or 227 acres) less than the proposed Project. The amount of forested land was calculated using the ratio of forested to nonforested land from the Gulf South Southeast Expansion Project DEIS (Docket No. CP07-32-000).

The construction and operation of this alternative system would require additional pipeline loop and new compression. Based on the information that SESH has provided, the alternative would be 70.5 miles longer than the proposed Project, and the last 123.5 miles of pipeline would be 30 inches in diameter. In addition, the operation of the pipeline would require 33,650 hp of additional compression at two new compressor stations and 47,000 hp added at three of Transco's existing stations. The alternative would operate with five compressor stations compared to three for the proposed Project. The Delhi Compressor Station would remain at its current location, while the Gwinville Compressor Station would move to the new pipeline alignment. The Lucedale Compressor Station and Petal and Collins booster stations would be eliminated and three existing Transco Compressor Station sites (Stations 82, 83, and 85) would be upgraded and used. It is likely that additional acreage would be acquired and would be permanently maintained at each of the three existing stations.

SESH indicates that, over the life of the project, providing gas thru-put from Delhi to Coden equivalent to that of the proposal would require 65 percent greater fuel usage and an associated increase in air emissions. In addition, the need for more compression under the alternative renders it equipment heavy and subject to more frequent breakdowns. Consequently, SESH indicates the alternative would be less reliable than the proposed Project and would have higher operation and maintenance costs. In addition, use of the Transco line would constrain the expandability of the SESH system. The Transco line is already at design capacity of 1 Bcf/d. Any expansion beyond this level would require extensive looping and additional compression, potentially rendering the incremental rate economically unfeasible for SESH. Finally, to provide firm service to its customers, SESH would have to lease capacity over the entire length of the Transco line, further increasing the cost of service compared to the proposed route.

#### **4.2.3.2 Transco Alternative 2 (Delhi to Citronelle to Coden)**

Transco System Alternative 2 (Delhi to Citronelle to Coden) deviates from the proposed Project at approximate MP 193.0, traveling southeast from that point for approximately 30 miles to tie into the existing 30-inch-diameter Transco Mobile Bay lateral at its intersection with the FGT pipeline, at Compressor Station 83 near Citronelle in Mobile County, Alabama (see Figure 4.2-3). From this point, SESH would use the southernmost 53-mile section of the Transco line to transport gas to Coden. Transco

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Figure 4.2-2  
Transco System Alternative 1  
Delhi to Butler to Coden**

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System Alternative 2 would have the same operational flexibility and pipeline connectivity as the proposed Project, and both would be able to meet their current capacity requirements.

This alternative would use approximately 47 less miles of new right-of-way corridor than the proposed Project (223 miles of new right-of-way versus 270 miles under the proposed Project). Our review of the alternative route indicates the lands crossed contain a higher percentage of forested land on average per mile than the proposed Project. We calculated that the forested land affected would be approximately 8 miles (or 121 acres) greater than the proposed Project. The amount of forested land was calculated using the ratio of forested to nonforested land (4:1) from the Southern Resources Southern Pines Energy Center and Expansion environmental assessments (Docket No. CP02-229-000).

The construction and operation of this alternative system would require additional pipeline loop and compression. The alternative would be 7 miles longer than the proposed Project, and the last 53 miles of Transco line pipeline is 30 inches in diameter. SESH points out that operation of the pipeline would require 16,040 hp of additional compression at one of two new compressor stations and 16,040 hp added at one existing compressor station (Transco Station 82) (for a total of four compared to three for the proposed Project). The Delhi and Gwinville Compressor Stations would remain at their current locations. The Lucedale Compressor Station would be eliminated, and two existing Transco Compressor Stations (Stations 82 and 83) would be upgraded and used. It is likely that additional acreage would have to be acquired and permanently maintained at both of these stations to provide the required increases in compression. Therefore, over the life of the project, providing gas thru-put from Delhi to Coden equivalent to that under the proposed Project would require 31 percent greater fuel usage and an associated increase in air emissions. In addition, the need for more compression under the alternative renders it equipment heavy and subject to more frequent breakdowns. Consequently, SESH indicates the alternative is less reliable than the proposed Project and would have higher maintenance costs. In addition, use of the Transco line constrains the expandability of the proposed SESH system. The Transco line is already at design capacity of 1 Bcf/d. Any expansion beyond this level would require extensive looping, potentially rendering the incremental rate economically unfeasible. Finally, to provide firm service to its customers, SESH indicates it would have to lease capacity over the entire segment of pipeline from Compressor Station 83 to Coden, further increasing the cost of service compared to the proposed Project.

### **Staff's Conclusions about Transco System Alternatives**

SESH indicates that there are operational risks, reliability issues, and additional costs associated with the Transco alternatives. Staff is preparing a data request to investigate whether a SESH-Transco combined system is viable from an operational standpoint, and our system analysis for these alternatives is not complete. However, based on our preliminary engineering and environmental analyses, we believe that the construction and operation of either one of the Transco alternatives presented here could accomplish the stated goals of the proposed action, and both alternatives appear to be environmentally preferable. However, project cost, although not an environmental factor, can cause a system alternative to not be practicable or feasible, particularly if costs are transferred to public and private customers. In the event 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. As reported in this DEIS, with the implementation of appropriate mitigation measures and our recommendations, construction of SESH's proposed Project would be an environmentally acceptable action.

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Transco System Alternative 2  
Delhi to Cintronelle to Coden**

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### 4.3 PIPELINE ROUTE ALTERNATIVES

Pipeline route alternatives are analyzed for their potential to avoid or significantly reduce impacts on environmentally sensitive resources, such as large population centers, scenic areas, conservation areas (such as Wildlife Refuges), wetlands, and waterways that would be crossed by the proposed pipeline. Shorter deviations from the proposed pipeline routes are discussed as route variations in Section 4.4.

During the pre-filing process for this proposal, SESH initially planned its route by first drawing a straight line, taking into consideration its origin and terminus for the project. The “straight line” route was modified, as needed, to accommodate interconnects proposed by SESH. Only the FGT interconnect required a deviation from the route. To access the FGT interconnect, the alignment was adjusted slightly northward from the Delhi Compressor Station to about MP 207, at which point it was oriented more to the south, continuing on this path through the FGT interconnect to Coden (see Figure 4.3-1). The comparison of the “straight line” route to the proposed Project is shown in Table 4.3-1.

The “straight line” route results in a shorter length (243 miles versus 269 miles for the proposed Project). Significant issues with this route identified during the pre-filing process included:

- identification of a feasible Mississippi River crossing location,
- impact to sensitive federal and state lands,
- adherence to NPS guidelines for the Natchez Trace Parkway crossing,
- impact to developed urban areas,
- impact to forest/forested wetland,
- crossing of steeply sloping terrain,
- lack of other utility rights-of-way in which to collocate, and
- specific landowner requests.

The “straight line” crossing of the Mississippi River was problematic. Early consultation with the COE indicated that the HDD would have to occur within the confines of the levees because of concerns related to levee integrity. The current crossing location of the Mississippi River now addresses the COE concerns. It offers the shortest crossing distance of all locations providing sufficient room within the levees to position the HDD working areas.

The “straight line” crossed sensitive federal and state lands, including the Tensas NWR, the DeSoto National Forest, and the Leaf River WMA. Avoiding these environmentally sensitive resources was a priority and was discussed among the agencies. In addition, if SESH had pursued the “straight line” as a proposed route, the responsible agencies could have imposed restrictions on the project that would have compromised one or more of its primary objectives.

Early consultation with the NPS revealed that it would likely not approve the “straight line” crossing of the Natchez Trace Parkway. The route was modified (from MP 44.86 to MP 73.40, a distance of 28.5 miles) to accommodate NPS recommendations for the crossing. The reroute deviated a distance of over 3 miles from the “straight line” alignment.

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Most Direct Route Alternative  
Delhi to Lucedale to Coden**

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Comparative Category	Unit	Most Direct Route	Preferred Route
<b>Land Requirements<sup>b</sup></b>			
Total length	miles	242.9	268.9
Construction right-of-way	acres	2,944.2	3,260.0
Permanent right-of-way	acres	1,472.1	1,630.0
<b>Environmental Considerations</b>			
Stream crossings <sup>c</sup>	number	275	247
Open water crossed <sup>c</sup>	miles	6.3	10.6
Federal lands crossed <sup>d</sup>	miles	31.1	0.1
State lands crossed <sup>e</sup>	miles	0.0	0.0
Municipalities	miles	17.0	0.2
Adjacency to existing rights-of-way <sup>f</sup>	miles	0.0	35.0
<b>Notes:</b>			
<sup>a</sup> Values reported are based on published data and mapping; therefore, the values shown may differ from actual values provided elsewhere in individual resource reports.			
<sup>b</sup> Land requirements reported assume a 100-ft-wide construction right-of-way and a 50-ft-wide permanent right-of-way.			
<sup>c</sup> Streams and Open Water source: National Hydrography Dataset based off of USGS topographic map symbology, includes marsh/swamp lands; Federal Lands source: United States National Atlas Federal Lands (640 acres or more).			
<sup>d</sup> Includes the Tensas NWR, Natchez Trace Parkway, and DeSoto National Forest			
<sup>e</sup> Includes the Leaf River WMA			
<sup>f</sup> Includes transmission line and pipeline rights-of-way			
ft = foot/feet			
NWR = National Wildlife Refuge			
WMA = Wildlife Management Area			

Several major routing adjustments were conducted to avoid major residential areas, such as the one in Covington County, Mississippi (from MP 145.9 to MP 153.06, a distance of 7.16 miles), where the reroute varied over 0.7 mile from the main alignment; and the one in Madison Parish, Louisiana (from MP 18.90 to MP 24.57, a distance of 5.67 miles), implemented to avoid residences and multiple stream crossings. A major reroute to avoid forested wetlands along the Bowie River in Covington County, Mississippi, was 5.8 miles long (MP 131.56 to MP 137.36) and varied from the “straight line” alignment by 845 ft.

In an effort to avoid rough terrain, SESH implemented a 6.27-mile reroute in Copiah County, Mississippi (MP 74.90 to MP 81.17, Table 4.4-1), with the reroute diverging almost one-half mile from the “straight line” alignment.

Some reroutes, like the one between MP 36.60 and MP 44.86 in Warren County, Mississippi (8.26 miles long), served multiple purposes such as, in this case, avoiding residences, a pond, areas presenting constructability issues, hunting camps, and a lake.

SESH also adjusted the “straight line” as needed to collocate, to the maximum extent practicable, with other utility rights-of-way, thereby reducing the amount of new pipeline corridor associated with the SESH Project. For example, in Perry County, Mississippi, between MPs 176.56 and MP 190.57, two such reroutes, totaling 4.98 miles in length, were implemented. While most landowner requests resulted in

relatively minor variations in routing the pipeline (see route variations discussion below), the refusal of a landowner in Madison Parish, Louisiana, to grant an easement to SESH resulted in a 5.14-mile route realignment of the proposed route (MP 7.16 to MP 12.30).

In conclusion, because of the Commission's pre-filing process, no other route alternatives were identified because SESH attempted to avoid or significantly reduce impacts on sensitive resources in its initial planning and siting of its proposal.

#### **4.4 ROUTE VARIATIONS**

Route variations differ from system or major route alternatives in that they are identified to resolve or reduce construction impacts to localized, specific resources such as cultural resource sites, wetlands, recreational lands, residences, landowner requests, and terrain conditions. While route variations may be a few miles long, most are relatively short and in proximity to the proposed route. Because route variations are identified in response to specific local concerns, they are usually the result of landowner comments. However, a variety of factors are considered in identifying and evaluating route variations including length, land requirements, and potential for reducing or minimizing impacts to natural resources.

As part of its proposed Project development and route selection process, SESH identified over 70 minor route variations to address landowner requests, avoid or minimize water body and wetland crossing, avoid cultural resource sites, parallel existing right-of-ways, and improve constructability (see Table 4.4-1). We have evaluated each of these minor route variations and considered their associated environmental impacts as part of our environmental analysis of the proposed Project.

In addition to the route variations shown in Table 4.4-1, it is anticipated that minor alignment shifts would be required prior to and during construction to accommodate currently unforeseeable site-specific constraints related to engineering, landowner, and environmental concerns. All such alignment shifts would first be subject to post-Certificate review and approval by the FERC.

#### **4.5 ABOVEGROUND FACILITY ALTERNATIVES**

We evaluated the proposed locations of the aboveground facilities for the proposed Project to determine whether environmental impacts would be reduced or mitigated by use of alternative facility sites. Our evaluation involved inspection of aerial photographs and maps as well as site visits along the proposed Project corridor. The aboveground facilities for the proposed Project include 3 new mainline compressor stations, 2 booster stations, and 13 M&R stations. All pig launcher/receiver facilities would be located within the confines of the proposed compressor station and/or M&R station sites; therefore, we did not consider siting alternatives for those facilities.

The proposed regional distribution of compressor and booster stations along the proposed Project alignment and their capacities were chosen based on the hydraulic requirements of the SESH system. The general location of each compression facility was largely dictated by the proposed interconnection with another gas system with which it was collocated (see Figure 4.5-1). These general locations optimally facilitate the receipt and delivery of gas at a wide range of operating pressures.

**TABLE 4.4-1  
Route Variations Adopted for the SESH Project**

Mileposts		Variation <sup>a</sup> (Feet)	County/Parish, State	Reason for Adoption	Land Use
Start	End				
1.00	3.00	+530	Madison Parish, LA	Landowner request	Agricultural, forested
4.20	5.87	+105	Madison Parish, LA	Landowner request	Agricultural, forested
7.16	12.30	-260	Madison Parish, LA	Landowner request	Agricultural, open land, open water
12.19	12.66	+105	Madison Parish, LA	Extended away from waterbody to avoid sensitive site	Agricultural
17.43	18.90	-260	Madison Parish, LA	Avoid paralleling bayou	Agricultural, forested, industrial/commercial, open water
18.90	24.57	+790	Madison Parish, LA	Avoid residences and multiple creek crossings	Agricultural, forested, industrial/commercial
24.94	27.00	+530	Madison Parish, LA	Avoid cultural site (Indian mound) and residences	Agricultural
32.24	33.98	0	Madison Parish, LA	Avoid streams and parallel road	Agricultural, open water
34.00	35.06	-210	Madison Parish, LA	Alignment for drill	Forested, pine plantation
35.16	36.63	+55	Madison Parish, LA/Warren County, MS	Straighten for HDD	Forest, industrial/commercial
36.60	42.85	+900	Warren County, MS	Avoid residences and pond; constructability issues (better road crossing of US 61)	Agricultural, forested, industrial/commercial, open land, open water, residential
42.86	44.86	+1,056	Warren County, MS	Avoid hunting camps and lake	Agricultural, forested, open land, open water
47.93	48.40	-55	Claiborne County, MS	Reroute to avoid multiple stream crossings	Forest
44.86	73.40	+16,470	Claiborne County, MS	Rerouted to locate a suitable crossing within an existing easement across Natchez Trace	Agricultural, forested, pine plantation, open land, open water, residential
72.61	73.07	0	Copiah County, MS	Straighten for HDD	Open land, forest
74.90	81.17	+2,430	Copiah County, MS	Avoid rough terrain	Agricultural, forested, pine plantation, industrial/commercial, open land
81.19	82.46	-105	Copiah County, MS	HCA avoidance and landowner request	Forest
82.40	83.20	+4,224	Copiah County, MS	Avoid pond	Forested, Industrial/ Commercial, Open Water
84.11	85.17	-105	Copiah County, MS	Straighten alignment of route	Forest
86.54	88.18	+686	Copiah County, MS	Avoid residences	Agricultural, forested, industrial/commercial, open land
89.36	89.70	+210	Copiah County, MS	Landowner request	Forested, open land, residential
96.53	97.12	-315	Copiah County, MS	Landowner request	Forest
100.50	101.20	+125	Lawrence County, MS	Environmental reroute	Forested, open land, residential
109.00	109.75	+610	Lawrence County, MS	Environmental reroute and constructability issues	Forested, pine plantation, open land
109.75	110.36	+55	Lawrence County, MS	Landowner request	Forest
112.30	112.90	+100	Lawrence County, MS	Eliminate side cuts	Forested, open land
114.52	116.37	+315	Lawrence County, MS	Relocation of Gwinville Compressor Station	Forest, open land
114.62	116.33	-370	Lawrence County, MS	Landowner request	Forested, pine plantation, industrial/commercial, open land, residential
115.54	115.73	+135	Lawrence County, MS	Avoid residences	Forested, industrial/commercial, open land
116.49	116.79	0	Jefferson Davis County, MS	Reroute to avoid a pond	Forest
118.22	118.54	0	Jefferson Davis County	Reroute to avoid a pond	Open land
125.60	126.00	+180	Jefferson Davis County, MS	Avoid residences	Forested, residential
130.31	130.48	-55	Covington County, MS	Landowner request	Forest
130.70	130.77	+55	Covington County, MS	PI straightening	Forest

**TABLE 4.4-1  
Route Variations Adopted for the SESH Project**

Mileposts		Variation <sup>a</sup> (Feet)	County/Parish, State	Reason for Adoption	Land Use
Start	End				
131.56	137.36	-845	Covington County, MS	Avoid swamplands along Bowie River	Agricultural, forested, pine plantation, open land, residential
138.35	138.52	+100	Covington County, MS	Avoid existing compressor station	Forested, pine plantation, industrial/ commercial, residential
142.80	144.66	+50	Covington County, MS	Angle for road crossing	Forested, pine plantation, open land
150.73	151.04	0	Covington County, MS	Straighten for HDD	Forest
152.63	152.71	0	Covington County, MS	Reroute to avoid pond	Forest
145.90	153.06	+3,800	Covington County, MS	Avoid major residential area	Agricultural, forested, pine plantation, industrial/ commercial, open land, open water, residential
153.30	153.84	-55	Jones County, MS	Landowner request	Open land
155.60	161.02	-264	Jones County, MS	Avoid proposed residential area	Agricultural, forested, industrial/ commercial, open land, open water
161.38	162.72	+316	Forrest County, MS	Avoid residences	Agricultural, forested, industrial/ commercial, residential
162.28	163.16	-210	Forest County, MS	Avoid encroachment of transmission line easement	Forest
163.93	164.50	+100	Forrest County, MS	Avoid residences	Forested, residential
164.52	166.39	+264	Forrest County, MS	Avoid landfill and residences	Agricultural, forested, industrial/ commercial, residential
166.17	167.67	0	Forest County, MS	Relocation of Petal Booster Site	Forest, open land
169.07	169.44	+211	Perry County, MS	Avoid residences and lake	Forested, pine plantation, open land forest
170.35	170.85	+105	Perry County, MS	Straighten for HDD	forested, pine plantation, residential
171.50	171.22	+210	Perry County, MS	Avoid residences	forested, pine plantation, open land
172.84	174.70	+950	Perry County, MS	Avoid cemetery, cell tower, pond, and residence	forested, pine plantation, open land
176.56	178.29	-52	Perry County, MS	Move to parallel existing right-of-way	forested, pine plantation, industrial/ commercial, open land
179.25	179.67	-55	Perry County, MS	Increase distance from barn	Forest, agricultural
181.57	181.75	-55	Perry County, MS	Landowner request	Forest
187.32	190.57	+210	Perry County, MS	Move to parallel existing right-of-way	Agricultural, forested, pine plantation, industrial/ commercial, open land, open water
190.50	190.93	+100	Perry County, MS	Avoid residence	Forested, industrial/ commercial, residential
191.53	191.71	+150	Perry County, MS	Avoid multiple crossings of a creek	Forested, industrial/ commercial, open land
191.85	192.25	+80	Perry County, MS	Move to parallel existing right-of-way	Forested, open land
195.34	197.00	-160	Greene County, MS	Avoid terrain (ravines)	Forested, pine plantation, open land
199.77	201.57	+1,267	Greene County, MS	Avoid terrain (ravines)	Forested, industrial/ commercial, open land
201.68	202.28	+210	Greene County, MS	Move to parallel existing right-of-way	Forested, pine plantation, open land
203.62	204.46	+260	Greene County, MS	Avoid ponds and multiple creek crossings	Forested, open land
207.72	208.24	+75	Greene County, MS	Avoid residence, water well, and septic system	Forested, pine plantation
208.03	208.84	+150	Greene County, MS	Move to avoid area where insufficient space is available to construct between existing right-of-way and road	Forested, industrial/ commercial, open land
210.89	211.38	+300	George County, MS	Avoid wetland and residence	Agricultural, forested, industrial/ commercial, open land, open water, residential
212.20	212.72	+270	George County, MS	Reroute to interconnect to a more suitable site for proposed compressor station	Forested, pine plantation, industrial/ commercial

**TABLE 4.4-1  
Route Variations Adopted for the SESH Project**

Mileposts		Variation <sup>a</sup> (Feet)	County/Parish, State	Reason for Adoption	Land Use
Start	End				
213.77	214.05	-55	George County, MS	Construction-reduced crossing length of foreign pipelines	Forest, open land
218.22	218.93	+55	George County, MS	Avoid residence, landowner request	Forest
218.78	219.05	+100	George County, MS	Avoid residence	Agricultural, forested, industrial/commercial, residential
219.33	220.15	+86	George County, MS	Avoid residence	Agricultural, forested, industrial/commercial, residential
221.30	223.04	-1370	George County, MS	Avoid residences and ponds	Agricultural, forested, open land, open water
223.07	223.84	-105	George County, MS	Avoiding Pond	Forest
225.60	226.00	+60	George County, MS	Avoid residences and ponds	Agricultural, forested, open water
227.57	227.84	+150	George County, MS	Avoid residence	Pine plantation, residential
229.77	230.08	+90	George County, MS	Avoid residences, barn, and orchard	Agricultural, forested
231.47	235.00	+475	George County, MS	Avoid residences	Agricultural, Forested, Open Land, Residential
235.22	236.23	-55	George County, MS	Straighten for HDD	Forest
235.00	238.29	+580	George County, MS	Avoid residences and multiple crossings of a creek	Agricultural, forested, open land, open water, residential
243.07	246.37	+690	Mobile County, AL	Avoid swamps and multiple creek crossings	Agricultural, forested
247.17	248.39	+370	Mobile County, AL	Move to parallel existing right-of-way	Agricultural, forested, pine plantation, open land, open water, residential
249.96	252.87	-290	Mobile County, AL	Avoid existing meter station and residences	Agricultural, forested, open land, residential
252.52	253.91	0	Mobile County, AL	Reroute to avoid HCA	Agricultural
256.11	256.85	+75	Mobile County, AL	Move to parallel Deb Busby Road	Agricultural, forested, open land
257.17	259.05	+210	Mobile County, AL	Avoid residential development and barns	Agricultural, forested, industrial/commercial, open land
260.80	262.53	-1,900	Mobile County, AL	Avoid major wetlands	Agricultural, forested, industrial/commercial, open land, residential
261.41	262.56	-210	Mobile County, AL	Avoid landfill	Open land, forest
266.61	266.78	0	Mobile County, AL	Straighten line	Forest
268.79	269.09	+790	Mobile County, AL	Reroute to accommodate new Gulf South M&R location	Forest

<sup>a</sup>This column refers to the amount the pipeline was lengthened (+) or shortened (-) by the incorporation of a reroute.

HCA = high consequence area  
HDD = horizontal directional drill  
M&R = meter/regulator

# **NON-INTERNET PUBLIC**

**DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR THE PROPOSED SOUTHEAST  
SUPPLY HEADER PIPELINE PROJECT  
Docket No. CP07-44-000 and CP07-45-000**

**Page 4-16  
Section 4.5  
Figure 4.5-1  
Compression and Interconnect Facilities**

**Public Access for the above information is available only through the Public Reference Room, or by  
e-mail at  
[public.referenceroom@ferc.gov](mailto:public.referenceroom@ferc.gov)**

SESH states that after identifying potential parcels in the immediate vicinity of the particular interconnect, it screened, evaluated, and selected the optimal compressor facility location by considering the following factors:

- Proximity to alignment and interconnections: Sites were considered based on their proximities to the proposed pipeline alignment as such locations would best meet engineering design requirements and minimize the need for additional lateral pipeline connects and possible reroutes.
- Parcel size and availability: Only those parcels that were large enough to accommodate the proposed facilities and were available for lease or purchase were considered.
- Access: Parcels in close proximity to major access routes were considered first because available access would minimize construction and operational impacts.
- Constructability: Where possible, difficult or steeply sloping topography was avoided.
- Sensitive environmental resources: Parcels containing sensitive environmental resources (e.g., wetlands, water bodies, and cultural resources) were avoided wherever possible.
- Noise-sensitive areas: Where possible, sites were considered based on their potential impact to NSAs.

The following sections describe the implementation of SESH's screening and evaluation process and our review of alternative sites of the proposed compressor stations.

#### **4.5.1 Delhi Compressor Station, Richland Parish, Louisiana**

##### **4.5.1.1 Proposed Site**

The first mainline compressor station for the proposed Project must be located at the beginning of the pipeline (in the vicinity of MP 0.22) because CEGT would deliver gas to the SESH line at a relatively low MAOP (770 psig). Location of this facility anywhere else would require more compression, which would require greater fuel consumption and would increase operation and maintenance costs.

The proposed Delhi Compressor Station site is situated on the eastern side of Highway 17 in Richland Parish, Louisiana. The site is 14.28 acres, located just south of an existing compressor station. The parcel is characterized by a mix of agricultural and residential land (one dwelling) and includes some forested land and a stream that flows into Bayou Macon. SESH has entered into an agreement with the resident/landowner to acquire the property including the residence at MP 0.26 through a purchase option contract. As shown on the plot plan in Appendix D of the FERC filing, the parcel is large enough to allow SESH to position the compressor station facilities away from the onsite stream. The nearest NSAs are residences located 0.35 mile west/southwest of the site. With the recommended mitigation measures proposed for this station (see Section 3.11), noise levels at the nearest NSA will be less than 55 dBA. The proposed site poses minimal environmental concerns and meets the engineering requirements of the Project.

##### **4.5.1.2 Alternative Sites**

Given the engineering requirements of the system, candidate parcels for the Delhi Compressor Station were limited in geographical scope. An alternative site, located in agricultural land just south of

the preferred site, was evaluated and rejected on both engineering and environmental grounds. The site is located further from the existing pipeline facilities, and its development would, therefore, require additional lateral construction with associated environmental impacts. Given these factors, we eliminated this site from further consideration.

#### **4.5.2 Gwinville Compressor Station, Jefferson Davis County, Mississippi**

##### **4.5.2.1 Proposed Site**

The currently proposed site for the Gwinville Compressor Station was originally the alternative site. The site is 18.90 acres in size, is located on the east side of Parkman Cemetery Road approximately 2,100 ft southwest of the proposed SESH pipeline alignment at MP 115.7. Approximately 1.85 miles of pipeline would have to be rerouted to accommodate the use of the site. The site is predominantly forested. Field surveys of the new preferred site revealed that no federally listed species or cultural resources are located on the property. The nearest NSA is located approximately 800 ft from the proposed compressor station location. SESH indicates it is conducting acoustical analyses to identify recommended mitigation measures needed to ensure that noise levels at the nearest NSA will be less than 55 dBA. While this site fulfills proposed Project engineering requirements, SESH initially rejected it because it lies further from the proposed Project alignment, and its development would result in increased impacts and cost associated with pipeline construction. However, it was adopted because of concerns with flooding of the alternate site, as discussed below.

##### **4.5.2.2 Alternative Sites**

The alternative site is adjacent to the SESH pipeline alignment at MP 115.40 on the western side of Parkman Cemetery Road in Jefferson Davis County, Mississippi. The 37.67-acre site is bisected by the SESH line and is characterized as open land. Several pipeline rights-of-way, including the SONAT pipeline, cross the tract. This site was originally proposed for the Gwinville Compressor Station because it facilitates the interconnection between the proposed SESH header and the SONAT system, thereby allowing SESH to exchange gas with SONAT at a wide range of operating pressures.

No sensitive environmental features were found on the property. The nearest NSA, a residence, is located approximately 0.25 mile east/southeast of the site. With the recommended mitigation measures proposed for this station (see Section 3.11), noise levels at the NSA would be less than 55 dBA. Additionally, a dense forested area lies between the site and the NSAs, providing a natural visual and acoustic buffer. A small pond lies within the site boundary; however, it would not be affected by station construction or operation (see plot plan in Appendix D of the FERC filing). In addition, although SESH has determined that this location is not within a designated 100-year floodplain, recent discussions with local landowners and subsequent SESH evaluation have revealed that the site is prone to flooding during heavy rains. Given this information and after considering the construction constraints imposed by the several pipeline corridors that cross the property, SESH chose the currently proposed site.

#### **4.5.3 Collins Booster Station, Covington County, Mississippi**

##### **4.5.3.1 Proposed Site**

SESH states it selected the proposed site for the Collins Booster Station because it minimizes environmental impacts and optimally facilitates the interconnection between the proposed SESH header and the Transco system, thereby allowing SESH to exchange gas with Transco at a wide range of operating pressures. Any substantial deviation from this location would increase environmental

disturbance and proposed Project costs because additional pipeline construction would be needed to manage the transfer of gas between SESH and Transco.

The proposed Collins Booster Station site is located in Covington County, Mississippi, at MP 138.22. It is optimally located on the northwestern side of an existing utility corridor and due west of an existing meter station. The site, which measures 19.73 acres, is characterized as a mix of open land (including scrub-shrub vegetation) and forest. There are no known sensitive environmental resources on this site. The nearest NSA is located 0.2 mile to the southeast of the site. With our recommended mitigation measures proposed for this station, noise levels at the NSA would be less than 55 dBA. This site poses minimal environmental concerns and fully meets the engineering requirements of the project.

#### **4.5.3.2 Alternative Sites**

No other sites were identified in the general vicinity of the Transco interconnection that came close to providing the combination of engineering benefits and minimization of environmental concerns offered by the preferred site. Any other available parcels were located further from the alignment, and their development would require construction of pipeline laterals that would increase both environmental impacts and costs.

#### **4.5.4 Petal Booster Station, Forrest County, Mississippi**

##### **4.5.4.1 Proposed Site**

The currently proposed Petal Booster Station site was originally an alternative site. The site is located just south of Old Richton Road in Forrest County, Mississippi, approximately 800 ft north of the SESH pipeline alignment at MP 166.83. 1.39 miles of pipeline would have to be rerouted to accommodate the use of this site. This 19.09-acre site is currently in agricultural use. There are no known sensitive environmental resources on the property. The nearest NSA is located 0.25 mile northeast of the alternative station location. SESH indicates that acoustical analyses are being conducted to identify mitigation measures needed to ensure that noise levels at the NSA do not exceed 55 dBA. Although this site fulfills system requirements, SESH initially rejected it because it lies further from the proposed Project alignment, and its development would result in increased impacts and costs associated with pipeline construction. However, as noted below, the site avoids an impact to a forested wetland and provides more adequate space.

##### **4.5.4.2 Alternative Sites**

This alternative site is adjacent to the SESH pipeline alignment at MP 166.83. Situated at the intersection of the TGP pipeline and an aboveground utility corridor, the 8.42-acre site is optimally placed. This site was originally proposed for the Petal Booster Station because it facilitates the interconnection between the proposed SESH header and the TGP system, thereby allowing SESH to exchange gas with TGP at a wide range of operating pressures.

The parcel is characterized by forest and open land. The nearest NSA is a residence located approximately 0.5 mile to the northeast of the proposed station location. While site screening revealed no sensitive environmental resources, detailed ecological field surveys identified that a portion of this parcel contains a forested wetland. While the preliminary station design indicates that impacts to this wetland could be avoided, development would be constrained by the relatively small amount of remaining available acreage. Because of the constraints of the property, we eliminated it from further consideration.

## **4.5.5 Lucedale Compressor Station, George County, Mississippi**

### **4.5.5.1 Proposed Site**

The Lucedale Compressor Station site is located in George County, Mississippi, at MP 212.34. SESH selected this 22.28-acre parcel because it did not contain sensitive environmental resources and was located in proximity to the FGT pipeline corridor, which minimizes construction impacts associated with transfer of gas between the proposed SESH header and the FGP interconnect. The site, which is largely forested, contains no sensitive environmental resources. The nearest NSA is a residence located 0.5 mile southeast of the proposed site (see plot plan in Appendix D of the FERC filing). With the recommended mitigation measures proposed for this station (see Section 3.11), noise levels at the NSA would be less than 55 dBA. The site poses minimal environmental concerns and fully meets the engineering requirements of the proposed Project.

### **4.5.5.2 Alternative Sites**

Our analysis identified no other available parcels in the general vicinity of the FGT interconnection. SESH indicates that no sites can provide the combination of engineering benefits and minimization of environmental concerns offered by the preferred site. All other available parcels were located further from the alignment, and their development would require construction of pipeline laterals that would increase both environmental impacts and costs.