

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 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 emphasizes identification of potential stakeholder issues early in project development 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 (no action alternative), or 3) postpone the action pending further study (postponed action alternative).

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 markets. 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 the 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, the 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 Gulf of Mexico 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 would provide 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 to construct the proposed Project, the short-term and long-term environmental impacts identified in this EIS would not occur. If the Commission postpones action on the application, either the environmental impacts identified in this EIS would be delayed or the postponement could result in SESH deciding not to pursue the proposed Project and 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 and smaller pipe diameter compared to the proposed SESH facilities. The Gulf South system spans several states for about 470 miles. 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, greenfield² 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.

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

NON-INTERNET PUBLIC

**FINAL ENVIRONMENTAL IMPACT STATEMENT FOR THE PROPOSED SOUTHEAST
SUPPLY HEADER PIPELINE PROJECT
Docket Nos. CP07-44-000 and CP07-45-000**

**Page 4-4
Section 4.2
Figure 4.2-1
Proposed Gulf South System Alternative**

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

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.

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's March 2007 FERC filing, the Transco System Alternative 1 would have the same operational flexibility and pipeline connectivity as the proposed Project. If built, it would potentially be able to meet SESHs' current capacity requirements.

As originally identified, 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. However, 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.

Since the issuance of the DEIS, we have obtained additional information on Transco's system and we have identified several engineering reasons why this system alternative is not a reasonable one. First, all of Transco's firm capacity on its Mobile Bay Lateral from Station 85 to Coden, Alabama is fully subscribed meaning that, SESH would not be able to contract for capacity on this line. Instead SESH would at a minimum, have to loop the entire 123.5 mile Mobile Bay Lateral. However, the gas in the Mobile Bay Lateral now flows from the south to the north, where as SESH requires transportation from the north to the south. This means that SESH would actually have to build a parallel pipeline rather than a loop to transport the gas. The system alternative would require the construction of 324.5 miles of new

NON-INTERNET PUBLIC

**FINAL ENVIRONMENTAL IMPACT STATEMENT FOR THE PROPOSED SOUTHEAST
SUPPLY HEADER PIPELINE PROJECT
Docket Nos. CP07-44-000 and CP07-45-000**

**Page 4-6
Section 4.2
Figure 4.2-2
Transco System Alternative 1
Delhi to Butler to Coden**

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

pipeline rather than the 269 miles of pipeline planned by SESH. It also means that even more compression may be required since SESH would not be able to make use of Transco existing compression which would be needed by Transco to transport its gas on the existing Mobile Bay Lateral. Therefore, we believe the use of this system alternative is not a reasonable alternative.

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.

According to SESH's March 2007 FERC filing, Transco 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.

Since the issuance of the DEIS, we have obtained additional information on Transco's system and we have identified several engineering reasons why this system alternative is not a reasonable one. First, all of Transco's firm capacity on its Mobile Bay Lateral from Station 85 to Coden, Alabama is fully subscribed meaning that, SESH would not be able to contract for capacity on this line. Instead SESH would at a minimum, have to loop the entire 123.5 mile Mobile Bay Lateral. However, the gas in the Mobile Bay Lateral now flows from the south to the north, where as SESH requires transportation from the north to the south. This means that SESH would actually have to build a parallel pipeline rather than a loop to transport the gas. The system alternative would require the construction of 324.5 miles of new pipeline rather than the 269 miles of pipeline planned by SESH. It also means that even more compression may be required since SESH would not be able to make use of Transco existing compression which would be needed by Transco to transport its gas and the existing Mobile Bay Lateral. Therefore, we believe the use of this system alternative is not a reasonable alternative.

NON-INTERNET PUBLIC

**DRAFT FINAL ENVIRONMENTAL IMPACT STATEMENT FOR THE PROPOSED
SOUTHEAST SUPPLY HEADER PIPELINE PROJECT
Docket Nos. CP07-44-000 and CP07-45-000**

**Page 4-8
Section 4.2
Figure 4.2-3
Transco System Alternative 2
Delhi to Citronelle to Coden**

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

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 from the origin to the terminus for the project. The “straight line” route was modified to accommodate requested interconnects. 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 while still providing sufficient room within the levees to position the HDD working areas.

The “straight line” route 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. 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.

TABLE 4.3-1			
Comparison of “Straight Line” Route and Proposed Project As a Result of Pre-filing^a			
Comparative Category	Unit	Most Direct Route	Preferred Route
Land Requirements^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
Environmental Considerations			
Stream crossings ^c	number	275	247
Open water crossed ^c	miles	6.3	10.6
Federal lands crossed ^d	miles	31.1	0.1
State lands crossed ^e	miles	0.0	0.0
Municipalities	miles	17.0	0.2
Adjacency to existing rights-of-way ^f	miles	0.0	35.0
Notes:			
^a Values reported are based on published data and mapping; therefore, the values shown may differ from actual values provided elsewhere in individual resource reports.			
^b Land requirements reported assume a 100-ft-wide construction right-of-way and a 50-ft-wide permanent right-of-way.			
^c 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).			
^d Includes the Tensas NWR, Natchez Trace Parkway, and DeSoto National Forest			
^e Includes the Leaf River WMA			
^f Includes transmission line and pipeline rights-of-way			
ft = foot/feet			
NWR = National Wildlife Refuge			
WMA = Wildlife Management Area			

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.

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.

NON-INTERNET PUBLIC

**FINAL ENVIRONMENTAL IMPACT STATEMENT FOR THE PROPOSED SOUTHEAST
SUPPLY HEADER PIPELINE PROJECT
Docket Nos. CP07-44-000 and CP07-45-000**

**Page 4-11
Section 4.3
Figure 4.3-1
Most Direct Route Alternative
Delhi to Lucedale to Coden**

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

Some reroutes, like the one between MP 36.60 and MP 44.86 in Warren County, Mississippi (8.26 miles long), served multiple purposes, 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 route planning done during the Commission’s pre-filing process, no other major 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. Accordingly, the proposed route is the preferred alternative.

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.

Identified Route Variations

We have identified and evaluated 12 additional route variations based on comments provided by the public, an agency and an organization. These variations affect a total of eighteen landowners. Table 4.4-2 below identifies the landowners, mileposts (MP) associated with the comments, and the comment identification number as it appears in Appendix K of the FEIS.

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

Mileposts		Variation ^a (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, MS	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

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

Mileposts		Variation ^a (Feet)	County/Parish, State	Reason for Adoption	Land Use
Start	End				
130.70	130.77	+55	Covington County, MS	PI straightening	Forest
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	Forrest 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	Forrest 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
170.35	170.85	+105	Perry County, MS	Straighten for HDD	Forest
171.50	171.22	+210	Perry County, MS	Avoid residences	Forested, pine plantation, residential
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 Proposed SESH Project**

Mileposts		Variation ^a (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

^aThis 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

Each route variation was compared to the route of the proposed pipeline to determine if additional environmental benefits would be gained. The evaluation included consideration of landowner concerns, lengths of routes, number of landowners affected, construction and permanent impacts, as well as environmental impacts. The following pages address the comments and requests by each of the identified landowners and the disposition of any requested route variations. Tables 4.4.1-3 – 4.4.14-1 provide comparisons between landowner requested routes and the SESH Original Route. SESH indicated easement negotiations are not yet finalized for the variations; however, all adjacent landowners affected by a final route variation have also been contacted and have agreed to the proposed changes in the route.

TABLE 4.4-2
Landowner Route Variations for the Proposed SESH Project

Landowner	Mileposts (approximate)	Appendix K Comment ID
Myers	MP 90.0 – 91.6	IND20
Wyatt	MP 93.4 – 95.7	IND19, IND8
Beasley	MP 96.5 – 97.1	PM1-3
Herrin	MP 141.7 – 143.6	IND4
The Nature Conservancy	MP 209.1 – 210.7	ORG1
Whitehead – Leonard/ Seward/Middleton	MP 236.0 – 241.8	IND13, IND14
Springdale Stores	MP 243.0 – 245.8	IND25
Brigham/McGowin/Hill	MP 251.8 – 256.4	IND1, IND7, IND12, IND18
Seignious	MP 259.0 – 259.5	IND17
Barnes	MP 261.6 – 262.8	IND16
Alabama Department of Transportation	MP 263.8 – 266.3	No Comment
Woolwine	MP145.0 – 146.5	IND10

4.4.1 Myers Route

The Myers Route was suggested by landowners to avoid impact to a stream and wetland complex and the viewshed from their residence. It would diverge from the Original Route between MP 90.0 and MP 91.6 (See Figure 4.4.1 1). The Myers' proposed route would increase the pipeline length by 0.1 mile, increase number of affected landowners by three, and require construction in a steep side hill area (Table 4.4.1-1). The route variation would reduce the number of stream crossings from 6 to 2 and the linear feet of wetland from 370 to 200. The route variation would eliminate impacts to the landowner by shifting the pipeline corridor south off the Myers property. Other landowners and a deer camp would be affected.

SESH has suggested a different variation in this area, the Myers Route Variation. The Myers Route Variation that would diverge from the Original Route between MP 90.6 and MP 91.0. This route variation would reduce stream crossing by two, two more than would be crossed by the Myers Route. It would also impact the same amount of wetlands as the proposed route. It would shift the pipeline to the south on the Myers property, increasing distance between the pipeline and the stream when compared to the Original Route.

We note that the Myers route would entail side hill construction but would eliminate some side hill construction on the Original Route. The Myers Route would affect more landowners, but would avoid impact to a wetland area, passing instead through a pine plantation. The route proposed by the Myers appears preferable. However, see staff conclusion regarding this route variation at the end of this section.

NON-INTERNET PUBLIC

**FINAL ENVIRONMENTAL IMPACT STATEMENT FOR THE PROPOSED SOUTHEAST
SUPPLY HEADER PIPELINE PROJECT
Docket Nos. CP07-44-000 and CP07-45-000**

**Page 4-17
Section 4.4.1
Figure 4.4.1-1
Myers Route and Myers Route Variation**

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

TABLE 4.4.1-1 Comparison of the Myers Route Variation and the Myers Route to the Original Route			
Evaluation Criteria	Original Route	Myers Route	Myers Route Variation
Total Length (miles)	1.5	1.6	1.5
Landowners Affected (#)	2	5	2
Construction Impacts (acres)	22.73	24.24	22.73
Permanent Easement (acres)	9.90	9.70	9.09
Paralleled Rights-of-Way (miles)	0	0	0
Stream Crossings (#)	6	2	4
Wetland Impacts (linear feet)	370	200	370
Land Use Type	Open land, Forested	Open land, Forested	Open land, Forested

4.4.2 Wyatt Route Variation

The Wyatt Route Variation was proposed by the landowner to reduce the number of impacted landowners, eliminate impacts to his hunting and fishing lodge operation, and to avoid impacts to a 44 acre lake on the property. He also suggested several construction/design modifications to reduce these impacts. The Wyatt Route Variation diverges from the Original Route at MP 93.4 and runs north and east of the landowner's tracts and rejoins the Original Route at MP 95.7 (See Figure 4.4.2 1). The variation traverses similar topography but would transfer associated impacts to adjacent landowners.

The Wyatt Route Variation would increase the pipeline length by 0.1 mile and increase number of affected landowners by one. It would reduce the number of stream crossings by three (Table 4.4.2-1). No wetlands would be affected with either route and both route corridors would affect forested vegetation. SESH has indicated that it has agreed to several minor modifications to address the landowner's concerns.

Although the Wyatt Route Variation would alleviate the concerns raised by the landowner, by eliminating impacts to the Wyatt property, it would increase temporary and permanent land disturbance and the variation would affect eight new property owners, resulting in the transfer of alignment impacts to other landowners. For these reasons, we believe that adoption of the Wyatt Route Variation would not be preferable to the Original Route.

NON-INTERNET PUBLIC

**FINAL ENVIRONMENTAL IMPACT STATEMENT FOR THE PROPOSED SOUTHEAST
SUPPLY HEADER PIPELINE PROJECT
Docket Nos. CP07-44-000 and CP07-45-000**

**Page 4-19
Section 4.4.2
Figure 4.4.2-1
Wyatt Route Variation**

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

**TABLE 4.4.2-1
Comparison of the Wyatt Route Variation to the Original Route**

Evaluation Criteria	Original Route	Wyatt Route Variation
Total Length (miles)	2.3	2.4
Landowners Affected (#)	7	8
Construction Impacts (acres)	34.85	36.36
Permanent Easement (acres)	13.94	14.55
Paralleled Rights-of-Way (miles)	0	0
Stream Crossings (#)	5	2
Wetland Impacts (linear feet)	0	0
Land Use Type	Forested	Forested

4.4.3 Beasley Route Variation

Since the incorporation of the Beasley Route Variation, the landowner has requested that the pipeline be moved several thousand additional feet from their house (Figure 4.4.3-1). SESH believes that they have addressed the Beasley’s concerns with the incorporation of the Beasley Route Variation and that any further movement of the route would add additional length and additional impacts to adjacent landowners and environmental resources (Table 4.4.3-1). SESH is continuing to work with the landowners in an attempt to address their safety concerns pertaining to construction of the proposed Project across their property (See also our response to Carolyn Hudson, IND2 and 3 and Barbara Newell, PM1-3 in Appendix K). We agree with SESH that its proposed Beasley Route Variation is the preferred route.

**TABLE 4.4.3-1
Comparison of the Beasley Route Variation to the Original Route**

Evaluation Criteria	Original Route	Beasley Route Variation
Total Length (miles)	0.57	0.65
Landowners Affected (#)	3	3
Construction Impacts (acres)	8.6	9.9
Permanent Easement (acres)	3.4	3.96
Paralleled Rights-of-Way (miles)	0	0
Stream Crossings (#)	3	2
Wetland Impacts (linear feet)	380	0
Land Use Type	Forested	Forested

NON-INTERNET PUBLIC

**FINAL ENVIRONMENTAL IMPACT STATEMENT FOR THE PROPOSED SOUTHEAST
SUPPLY HEADER PIPELINE PROJECT
Docket Nos. CP07-44-000 and CP07-45-000**

**Page 4-21
Section 4.4.3
Figure 4.4.3-1
Beasley Route Variation**

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

4.4.4 Herrin Route Variation

The Herrin Route Variation was proposed by the landowner to minimize impacts to timber operations on his property. The Herrin Route Variation would diverge from the Original Route between MP 141.7 and MP 143.6 (See Figure 4.4.4 1). The variation would move the proposed pipeline corridor to the northern boundary of the property.

The Herrin Route Variation would increase the total length of the pipeline by 0.2 mile and increase the construction right-of way and permanent easement land requirements by approximately 2.4 acres and 1.2 acres, respectively compared to the Original Route (Table 4.4.4-1). The number of affected landowners would not change. The number of stream crossings would be reduced by two and there would be no wetlands impacted by either route. According to the landowner one less landowner is affected by the variation route. Although the Herrin Route Variation would impact slightly more right-of-way by length it would decrease the impact to two streams and one landowner. Further, the landowner proposed variation better accommodates the landowner’s timber management plans and a more perpendicular crossing of Highway 589 can be achieved with the variation. For these reasons, it appears that the Herrin Route Variation would be preferable to the Original Route. However, see staff conclusion regarding this route variation at the end of this section.

**TABLE 4.4.4-1
Comparison of the Herrin Route Variation to the Original Route**

Evaluation Criteria	Original Route	Herrin Route Variation
Total Length (miles)	1.9	2.1
Landowners Affected (#)	4	3
Construction Impacts (acres)	23.03	25.45
Permanent Easement (acres)	11.52	12.73
Paralleled Rights-of-Way (miles)	0	0
Stream Crossings (#)	3	1
Wetland Impacts (linear feet)	0	0
Land Use Type	Forested	Open land, Forested (immature pine plantation)

NON-INTERNET PUBLIC

**FINAL ENVIRONMENTAL IMPACT STATEMENT FOR THE PROPOSED SOUTHEAST
SUPPLY HEADER PIPELINE PROJECT
Docket Nos. CP07-44-000 and CP07-45-000**

**Page 4-23
Section 4.4.4
Figure 4.4.4-1
Herrin Route Variation**

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

4.4.5 The Nature Conservancy Route Variation

The Nature Conservancy Route Variation was developed in response to the landowners request to have the proposed pipeline avoid crossing the property. The Nature Conservancy Route Variation would follow an existing pipeline easement associated with the Destin Pipeline on the Conservancy's managed lands between MP 209 and 210.6 (Figure 4.4.5-1). The variation would reduce the impacts to the property by paralleling an existing pipeline right-of-way.

The Nature Conservancy originally requested that the proposed pipeline completely avoid crossing its lands. A reasonable variation around all of the multiple tracts of local Conservancy lands could not be identified. According to SESH the two parties have agreed in principle to The Nature Conservancy Route Variation. For these reasons, we believe that the adoption of The Nature Conservancy Route Variation would be preferable to a variation around the Conservancy's managed lands in the area.

4.4.6 Whitehead- Leonard, Seward, Middleton Route Variation

The Original Route crossing the Seward, Middleton and Whitehead-Leonard properties has a pipeline length of 6.0 miles, much of which is farm land. In the course of discussions, review of maps, and aerial photographs with SESH and FERC staff, each landowner mapped out alternative routes to minimize impacts to their properties. Harry K. Seward and Steve Seward were concerned that the Original Route bisected their property and was too close to their home, office, shop, cattle facility and "agri-tainment" business. James H. Middleton was concerned that the Original Route divided his property in half and would reduce crop yields. Walt Whitehead and Dr. Lynne Leonard were concerned that the Original Route went through the heart of their property.

The Whitehead-Leonard Route Variation diverges from the Original Route between MP 237.5 and MP 238.8 (Figure 4.4.6-1). The variation traverses similar topography, would impact additional forest land but no wetlands. It would traverse the northeast corner of the Whitehead-Leonard land. This variation would follow the edge of the tree line and minimize impacts. The route would add 0.1 mile of pipeline length, increase land disturbance by 1 acre, and cross the same number of streams. There would be no change in number of affected landowners (Table 4.4.6-1). It would exit the Whitehead-Leonard property onto the Seward's property near a residence. It is not acceptable to the Swards.

The Swards asked that SESH implement the northern Seward/Middleton/Whitehead-Leonard Route 1 or (less optimally) the southern Seward/Middleton/Whitehead-Leonard Route 2 (Figure 4.4.6-1) instead of the Original Route. Route 1 avoids all three landowners' properties and thus eliminates any impacts to their properties; however, the route would add 4.0 miles to the pipeline length and affect five additional landowners. Further, the route would increase land disturbance by approximately 24 acres and 2,400 feet of wetlands. Route 1 would minimize impacts by paralleling an existing right-of-way for 3.4 miles and the number of stream crossings would remain the same.

Route 2 follows the western edge of the Whitehead-Leonard property and western and southern edge of the Seward property. It would affect five additional landowners, add 1.2 miles to the pipeline length, increase land disturbance by approximately 15 acres and 3,044 feet of wetlands, and cross five additional streams. Route 2 would avoid the Middletons, but the Whitehead-Leonard landowners are concerned about the effect to a forested part of their property.

NON-INTERNET PUBLIC

**FINAL ENVIRONMENTAL IMPACT STATEMENT FOR THE PROPOSED SOUTHEAST
SUPPLY HEADER PIPELINE PROJECT
Docket Nos. CP07-44-000 and CP07-45-000**

**Page 4-25
Section 4.5.1
Figure 4.4.5-1
The Nature Conservancy Route Variation**

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

**TABLE 4.4.6-1
Comparison of the Seward/Middleton/Whitehead- Leonard Route Variations to the Original Route**

Evaluation Criteria	Original Route	Seward/Middleton/Whitehead-Leonard Route 1	Seward/Middleton/Whitehead-Leonard Route 2	Middleton Route	Whitehead-Leonard Route
Total Length (miles)	6.0	8.0	7.2	6.9	6.1
Landowners Affected (#)	23	28	17	33	23
Construction Impacts (acres)	72.72	96.97	87.27	83.64	73.74
Permanent Easement (acres)	36.36	48.48	43.64	41.82	36.97
Paralleled Rights-of-Way (miles)	0	3.45	0	0	0
Stream Crossings (#)	10	10	15	19	10
Wetland Impacts (linear feet)	441.1	2,680.8	3,485.6	2,035.8	0
Land Use Type	Forested, Open land	Forested, Open land	Forested, Open land	Forested, Open land	Forested, Open land

The Middletons requested that SESH implement the Middleton Route instead of the Original Route. This route would affect 10 additional landowners, add 0.9 miles to the length, increase land disturbance by approximately 11.5 acres and 1,600 feet of wetlands, and cross nine additional streams.

Each of the landowner requested routes result in additional pipeline lengths of 0.9 mile to 4.0 miles over the Original Route. Each route evaluated would have additional environmental impacts except the Whitehead-Leonard Route (no wetland impacts).

SESH would continue to work with the affected landowners to try to reasonably accommodate their concerns by adjusting the route, to the degree practical, to follow field boundaries, avoid stands of older trees, and be as far as possible from residences and structures. However, see staff conclusion regarding this route variation at the end of this section.

NON-INTERNET PUBLIC

**FINAL ENVIRONMENTAL IMPACT STATEMENT FOR THE PROPOSED SOUTHEAST
SUPPLY HEADER PIPELINE PROJECT
Docket Nos. CP07-44-000 and CP07-45-000**

**Page 4-27
Section 4.4.6
Figure 4.4.6-1
The Whitehead-Leonard Route Variation**

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

4.4.7 Springdale Stores Route Variation

The Springdale Stores Variation was developed in response to the landowner’s request for the SESH pipeline to minimize impacts (crossing of Big Creek) and not bisect their property. The Springdale Stores Variation would diverge from the Original Route between MP 243.0 and MP 245.8 (See Figure 4.4.7 1). The variation would co-locate the proposed pipeline adjacent to an existing pipeline easement.

The Springdale Stores Variation would increase the pipeline length by 0.3 mile, add a stream crossing, increase the acreage impacted by 4.4 acres and impact 67 more linear feet of forested wetlands (Table 4.4.7-1). The pipeline route would be co-located with an existing pipeline corridor for 3.1 miles and no new landowners would be affected by the variation.

Although the variation would slightly increase temporary and permanent land disturbance, the Springdale Stores Variation affects the same landowner and the pipeline would be co-located adjacent to an existing right-of-way, and is acceptable to the landowner. For these reasons we agree with SESH that the Springdale Stores Variation is preferable.

TABLE 4.4.7-1 Comparison of the Springdale Stores Route Variation to the Original Route		
Evaluation Criteria	Original Route	Springdale Stores Route Variation
Total Length (miles)	2.8	3.1
Landowners Affected (#)	1	1
Construction Impacts (acres)	33.94	37.58
Permanent Easement (acres)	16.97	18.79
Paralleled Rights-of-Way (miles)	0	3.1
Stream Crossings (#)	2	3
Wetland Impacts (linear feet)	1,734.7	1,802.6
Land Use Type	Forested	Forested

4.4.8 Brigham/McGowin/Hill Route Variation

The Brigham/McGowin/Hill Route Variation was developed in response to comments from three neighboring landowners requesting that an existing pipeline easement be followed by the proposed pipeline. The Brigham/McGowin/Hill Route Variation diverges from the Original Route between MP 251.3 and MP 256.5 (Figure 4.4.8-1). The variation traverses similar topography but would not impact wetlands. The landowners requested that the pipeline be buried as deep as the Gulf South pipeline to facilitate future crossing of the easement with roads and utilities.

NON-INTERNET PUBLIC

**FINAL ENVIRONMENTAL IMPACT STATEMENT FOR THE PROPOSED SOUTHEAST
SUPPLY HEADER PIPELINE PROJECT
Docket Nos. CP07-44-000 and CP07-45-000**

**Page 4-29
Section 4.4.7
Figure 4.4.7-1
The Springdale Stores Route Variation**

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

NON-INTERNET PUBLIC

**FINAL ENVIRONMENTAL IMPACT STATEMENT FOR THE PROPOSED SOUTHEAST
SUPPLY HEADER PIPELINE PROJECT
Docket Nos. CP07-44-000 and CP07-45-000**

**Page 4-30
Section 4.4.8
Figure 4.4.8-1
The Brigham/McGowin/Hill Route Variation**

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

The Brigham/McGowin/Hill Route Variation would have the same length of pipe and amount of land disturbance and affect six fewer landowners when compared to the Original Route (Table 4.4.8-1). The route variation would also parallel 4.7 miles of existing right-of-way (Gulf South) and eliminate the impact to 1,840 feet of wetland (no wetland impacts) when compared to the Original Route.

The Brigham/McGowin/Hill Route Variation would alleviate the routing concerns raised by the landowners by paralleling the existing Gulf South right-of-way easement and eliminates wetland impacts. The route variation reduces the number of landowners affected by six, but affects three new landowners. However, SESH has discussed the routing of the pipeline with the new landowners and they have agreed in principle to the route. For these reasons, we believe that the Brigham/McGowin/Hill Route Variation would be preferable to the Original Route. In addition, SESH committed to bury the pipeline with a minimum of four feet of cover on land with actively rotated crop.

TABLE 4.4.8-1 Comparison of the Brigham/McGowin/Hill Route Variation to the Original Route		
Evaluation Criteria	Original Route	Brigham/McGowin/Hill Route Variation
Total Length (miles)	5.0	5.0
Landowners Affected (#)	14	8
Construction Impacts (acres)	60.61	60.61
Permanent Easement (acres)	30.30	30.30
Paralleled Rights-of-Way (miles)	0	4.7
Stream Crossings (#)	1	2
Wetland Impacts (linear feet)	1,840	0
Land Use Type	Agricultural, Open land, Forested	Agricultural, Open land, Forested

4.4.9 Seignious Route Variation

SESH proposed the Seignious Route Variation in response to the landowner's concern that the SESH pipeline would adversely impact future development of their property. The Seignious Route Variation deviates from the Original Route between MP 259.1 and MP 259.6 (See Figure 4.4.9-1). The variation would cross additional forested land and move the pipeline route to the north of the landowner's property.

The landowners proposed a route (Seignious Route) that would deviate from the Original Route between MP 258.4 and MP 260.8 (See Figure 4.4.9-1). The route would reduce the pipeline length by 0.2 mile, reduce land disturbance by 3.2 acres, and parallel 1.8 miles of existing right-of-way compared to the Original Route (Table 4.4.9-1). The landowner proposed route would not impact any streams but would impact 408 feet of wetland. Ten additional landowners would be affected by the route compared to the Original Route. This route would cross residential and industrial lands and a highway clover leaf.

The Seignious Route Variation would increase the length of the pipeline by less than 0.1 mile, increase the corresponding land disturbance by 0.3 acres and add a stream crossing compared to the Original Route. No wetlands would be impacted or existing right-of-way easements used. SESH indicates that the route is acceptable to the Seignious and the landowner to the north. We agree with SESH that the Seignious Route Variation would be the preferred route.

Evaluation Criteria	Original Route	Seignious Route (landowner)	Seignious Route Variation (SESH)
Total Length (miles)	2.47	2.2	2.5
Landowners Affected (#)	13	23	13
Construction Impacts (acres)	29.94	26.67	30.30
Permanent Easement (acres)	14.94	13.33	15.15
Paralleled Rights-of-Way (miles)	0	1.87	0
Stream Crossings (#)	0	0	1
Wetland Impacts (linear feet)	0	408.6	0
Land Use Type	Forested, Open land	Open land, Residential, Industrial, Forested	Forested, Open land

NON-INTERNET PUBLIC

**FINAL ENVIRONMENTAL IMPACT STATEMENT FOR THE PROPOSED SOUTHEAST
SUPPLY HEADER PIPELINE PROJECT
Docket Nos. CP07-44-000 and CP07-45-000**

**Page 4-33
Section 4.4.9
Figure 4.4.9-1
The Seignious Route Variation**

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

4.4.10 Barnes Route Variation

The Barnes Route Variation was proposed by the landowner to remove the impact of the proposed Project from their commercial property. The Barnes Route Variation diverges from the Original Route between MP 261.9 and MP 262.0 (Figure 4.4.10-1). The variation would traverse some similar topography.

The Barnes Route Variation and the Original Route would have similar pipeline lengths, affected landowners, and land disturbance acreages; however an approximately 400 additional feet of forest land would be impacted by the variation (Table 4.4.10-1). The variation would reduce one stream crossing and impact less wetlands (1,800 feet). The route would impact several hundred feet of the decommissioned Irvington Sanitary Municipal Landfill. SESH advises that the Alabama Department of Environmental Management (ADEM) have stated that they would have serious opposition to a subsurface pipeline within this capped landfill for safety reasons.

Although the Barnes Route Variation would alleviate the landowner’s concerns, it would increase the temporary and permanent land disturbance, would affect an additional landowner, and cut into a decommissioned landfill. For these reasons, we believe that adoption of the Barnes Route Variation would not be preferable to the Original Route.

TABLE 4.4.10-1 Comparison of the Barnes Route Variation to the Original Route		
Evaluation Criteria	Original Route	Barnes Route Variation
Total Length (miles)	0.2	0.2
Landowners Affected (#)	4	4
Construction Impacts (acres)	2.42	2.42
Permanent Easement (acres)	1.21	1.21
Paralleled Rights-of-Way (miles)	0	0
Stream Crossings (#)	3	2
Wetland Impacts (linear feet)	6,090	4,200
Land Use Type	Forested, Open land	Forested, Open land

4.4.11 Alabama Department of Transportation (DOT) Route Variation

The Alabama DOT Route Variation was developed in response to a request from the managing state agency to move the Original Route to the western edge of its wetland mitigation property to minimize impacts. The Alabama DOT Route Variation diverges from the Original Route between MP 263.8 and MP 266.3 (Figure 4.4.11-1). The Alabama DOT Route Variation would increase the total pipeline length by 0.1 mile and increase temporary and permanent land disturbance impacts by 1.2 acres and 0.6 acres, respectively. No additional landowners, wetlands or streams would be affected Table (4.4.11-1). We agree that the Alabama DOT Route Variation would be the preferred route.

NON-INTERNET PUBLIC

**FINAL ENVIRONMENTAL IMPACT STATEMENT FOR THE PROPOSED SOUTHEAST
SUPPLY HEADER PIPELINE PROJECT
Docket Nos. CP07-44-000 and CP07-45-000**

**Page 4-35
Section 4.4.10
Figure 4.4.10-1
The Barnes Route Variation**

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

NON-INTERNET PUBLIC

**FINAL ENVIRONMENTAL IMPACT STATEMENT FOR THE PROPOSED SOUTHEAST
SUPPLY HEADER PIPELINE PROJECT
Docket Nos. CP07-44-000 and CP07-45-000**

**Page 4-36
Section 4.4.11
Figure 4.4.11-1
The Alabama Department of Transportation Route Variation**

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

TABLE 4.4.11-1 Comparison of the Alabama DOT Variation to the Original Route		
Evaluation Criteria	Original Route	Alabama DOT Route Variation
Total Length (miles)	2.5	2.6
Landowners Affected (#)	3	3
Construction Impacts (acres)	30.30	31.52
Permanent Easement (acres)	15.15	15.75
Paralleled Rights-of-Way (miles)	0	0
Stream Crossings (#)	0	0
Wetland Impacts (linear feet)	792	792
Land Use Type	Forested	Forested

4.4.12 Woolwine Variation

The Woolwine Property is located between MP 145.0 and MP 146.5. The landowner commented on the COE notice of SESH's COE permit application regarding the routing of the pipeline on the Woolwine's property. According to the landowner, the property is the site of a future planned community. SESH would continue to work with the landowner to address their comments and ensure they are reasonably accommodated. However, see staff conclusion regarding this route variation at the end of this section.

Staff Conclusions Regarding Route Variations

After review of the 12 route variations that were received in response to the DEIS, we acknowledge that SESH has agreed to incorporate six of the route variations into its final alignment, and concur with their use; and we do not recommend use of two of the variations and prefer the proposed route. The remaining four route variations have not been fully analyzed partly because they were received late during the development of this FEIS, and have not had public involvement and additional environmental surveys may be required. Therefore, we are not recommending use of these remaining variations at this time; however, SESH can request use of these variations or others pursuant to environmental recommendation number 5 of this FEIS.

In particular, SESH has agreed to incorporate the following route variations into its final alignment: Variations in Table 4.4-1 of this FEIS; Beasley, Nature Conservancy, Springdale Stores, Brigham/McGowin/Hill, Seignious Route Variation, and the Alabama DOT route variations.

After our analysis, as described above (Section 4.4), we do not recommend use of the following four route variations, and prefer the proposed route: Myers, Herrin, Whitehead-Leonard/Seward/Middleton, and Woolwine.

Finally, for reasons described above (Section 4.4), we are not recommending use of four variations. SESH has indicated it would continue to work with its landowners to finalize its alignment for its pipeline. Therefore, in order to give SESH additional opportunity to resolve and investigate further its route alignment with affected property owners, **we recommend that:**

- **SESH should finalize its route alignment across the Myers (MP 90.0 to 91.6); Herrin (MP 141.7 to 143.6); Whitehead-Leonard/Seward/Middleton (MP 236.0 to 241.8); and Woolwine properties (MP 145.0 to 146.5) in consultation with the landowners. Final alignments shall be filed with SESH's Implementation Plan for the Project and shall include the status of landowner concurrences.**

4.5 ABOVEGROUND FACILITY ALTERNATIVES

We evaluated the locations of the aboveground facilities in 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.

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 proximity to the proposed pipeline alignment, as close proximity 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.

NON-INTERNET PUBLIC

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

**Page 4-39
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**

- 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 for 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, 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 is conducting acoustical analyses to identify 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 selected the proposed site for the Collins Booster Station because it minimizes environmental impacts and optimizes 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, totaling 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. Rerouting of 1.39 miles of pipeline would be necessary 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.