

Detailed Alternatives Analysis

Alternative Analysis Nederland Terminal Buildout Project

1.0 INTRODUCTION

Sunoco Partners Marketing & Terminals LP (Sunoco) proposes to construct and operate the Nederland Terminal Buildout Project (Project). The proposed Project consists of the expansion of the existing Nederland Terminal in Nederland, Texas. The Project includes the construction of a finger pier ship dock capable of accommodating two deep draft vessels (Dock 7/8), the modification of the existing Dock C to accommodate deep draft vessels, and the construction of new terminal infrastructure including storage tanks, processing units, and supporting infrastructure.

Pursuant to Section 404(b)(1) of the Clean Water Act, the U.S. Army Corps of Engineers defines practicable alternatives as those which are "...available and capable of being done after taking into consideration cost, existing technology, and logistics in light of the overall project purpose." Sunoco evaluated a no-action alternative as well as several site alternatives to determine the most feasible design that would also meet the Project purpose and need. The no-action alternative as well as the site alternatives are discussed below along with justification for selection of the Preferred Alternative.

1.1 Project Purpose and Need

The purpose of the Project is to build new and modernize existing infrastructure that will allow for storage and transfer of petroleum products onto deep draft vessels bound for export markets. U.S. exports of crude oil and petroleum products are anticipated to increase with the continued development of key oil-producing basins (e.g., Permian, Bakken, etc.) and emerging international markets. The Project will serve to meet the rapidly growing customer demand for crude oil and petroleum product storage and transfer capacity. With the continued development of key oil producing basins, crude oil and petroleum product throughput volumes at the Nederland Terminal are continually increasing. These increasing throughput volumes require additional storage and transfer capacity to accommodate increasing commercial demands.

2.0 NO-ACTION ALTERNATIVE

Under the no-action alternative, Sunoco would not construct the proposed Project. If the proposed Project is not constructed, Sunoco would not be able to increase the storage capacity and transport of petroleum products onto deep draft vessels for export. The Project is crucial to meet growing customer demand. The no-action alternative would not meet the purpose and need of the Project; therefore, this alternative was dismissed from further consideration.

3.0 SITE ALTERNATIVES

3.1 Siting Criteria

Several factors were considered when selecting a site for the Project. In order to be considered practicable, a site must satisfy all of the siting criteria described below. Prior to development of siting criteria, Sunoco identified a geographic search area. The geographic search area was defined by proximity to Sunoco's Nederland Terminal and encompasses either side of the deep water portion of the Neches River. The geographic search area is identified on the mapping exhibit presented in **Appendix A**.

Practicable sites within the geographic search area meet the following siting criteria:

1. Located along the federally maintained portion of the Neches River
 - a. The Project must be sited in proximity to existing Sunoco infrastructure (Nederland Terminal) in order to meet the purpose and need of the Project to increase the storage capacity of the existing Sunoco system for export.
2. Minimum of 285 contiguous acres available for development
 - a. Based on the Project scope, 285 contiguous acres is the minimum area necessary to safely construct the Project facilities. Only contiguous tracts of land were evaluated, as numerous pipelines would be required to connect non-contiguous tracts reducing the efficiency and reliability of the Project facilities and increasing impacts.
3. Deep water port access with a minimum of 1,400 feet of shoreline available for constructing a finger pier capable of accommodating two Aframax Tankers
 - a. To meet the purpose and need of the Project, construction of docks/facilities capable of receiving three additional deep draft vessels is necessary to accommodate the increased export capacity of the Nederland Terminal. The largest vessel planned to call on the proposed facility is the Aframax Tanker at Dock 7/8 with a length of 935 ft and an Afra-max Tanker at Dock C with a length of 760 feet. If the docks were constructed so that the tankers were oriented parallel to the Neches River, over 2,630 feet of shoreline would be required. In order to minimize impacts, Sunoco proposes to construct a finger pier (inset in the shoreline) and modify its existing Dock C to allow for deep draft vessels up to 760 feet in length. These assumptions were considered for each of the off-site alternatives; therefore, sufficient shoreline to meet the purpose and need of the Projects is 1,400 linear feet. I.e., the length of shoreline necessary to accommodate the construction of two deep draft vessels berths, perpendicular to the Neches River.
4. Property is available for purchase and development

- a. Properties in which the current owner is unable or unwilling to sell to Sunoco cannot practicably be developed. Further, sites with zoning restrictions or other use limits (e.g., significant buried underground utilities) were also excluded from consideration.

The criteria listed above are the minimum necessary to make an alternative practicable. A total of six sites were identified within the geographic scope. Each site was assessed based on the siting criteria to determine practicability for Project use and development. All of the on-site alternatives and one of the off-site alternatives meet all four siting criteria (refer to **Table 1**). No other practicable or available sites were identified within the geographic search area. A map identifying the location of each alternative considered is presented in **Appendix A**.

Table 1									
Analysis of Siting Criteria									
Category	Preferred Alternative	On-site Alternative 1	On-site Alternative 2	On-site Alternative 3	Off-site Alternative 1	Off-site Alternative 2	Off-site Alternative 3	Off-site Alternative 4	Off-site Alternative 5
Siting Criteria									
1. Located along the Neches River	X	X	X	X	X	X	X	X	X
2. Minimum of 285 contiguous acres available for development	X	X	X	X	X	X	X	X	X
3. Deep water port access with 1,400 feet of available shoreline	X	X	X	X	X	X	X	X	X
4. Property available for purchase and development	X	X	X	X	X	-- ^a	-- ^b	-- ^c	-- ^c
<p>^a Off-site Alternative 2 is Placement Area 23 and is an active dredge material placement area owned by the Sabine-Neches Navigation District and utilized by the United States Army Corps of Engineers. Therefore, this alternative was not considered further.</p> <p>^b Off-site Alternative 3 is owned by Exxon and is not available for purchase. Therefore, this alternative was not considered further.</p> <p>^c Off-site Alternatives 4 and 5 are also located within an active dredge material placement area (Placement Area 24) owned by the Sabine-Neches Navigation District and utilized by the United States Army Corps of Engineers. Further Off-site Alternative 5 is located within a site crossed by multiple buried utilities near the shoreline where the dock would need to be sited and is not suitable for development. Therefore, these alternatives were not considered further.</p>									

3.2 Analysis of Alternatives

Sunoco considered and evaluated both on-site and off-site alternatives. Based on review of the geographic search area, five alternatives met all four siting criteria, as identified in Table 1. Other factors that were considered for sites meeting all of the siting criteria, include impacts on wetlands and waterbodies, distance from the residences (greater distance is preferable), impacts on navigation, number of landowners affected, and, distance from existing Nederland Terminal (greater distance would require greater length of pipelines to interconnect with existing Sunoco infrastructure). These additional factors were utilized to determine which of the alternatives would be the least environmentally damaging practicable alternative under the Section 404(b)(1) Guidelines. A total of five alternatives designated Off-site Alternative 1, On-site Alternative 1, On-site Alternative 2, On-site Alternative 3, and the Preferred Alternative were identified and evaluated for the Project. A quantitative analysis of each site is presented in Table 2 and further discussed below.

Category	Preferred Alternative	Off-site Alternative 1	On-site Alternative 1	On-site Alternative 2	On-site Alternative 3
Total Site Size (acres)	285	316	296	285	285
Waterbody Impacts (linear feet)^a	589	2,653	2,533	589	589
Wetland Impacts (acres)^a	256	256	281	270	256
Distance from nearest residences (feet)	2,450	525	2,450	2,450	2,450
Impacts on Navigation Channels	No	No	No	No	Yes
Additional Landowners Affected	0	1	0	0	0
Distance from Existing Nederland Terminal (feet)	0	1,200	0	0	0
^a The National Wetlands Inventory and National Hydrography Dataset was utilized to estimate wetland and waterbody impacts for the off-site alternatives. Field delineation data was utilized to estimate wetland and waterbody impacts for the Preferred Alternative and on-site alternatives. The length of the Neches River shoreline is not included.					

3.2.1 Preferred Alternative

The Preferred Alternative is a 285-acre site located immediately adjacent to the existing Nederland Terminal on land owned by Sunoco. Dock 7/8 would be located between Sunoco’s existing Docks 4 and 5. The proximity of the Preferred Alternative to the Nederland Terminal would require the minimum length of pipelines necessary to interconnect with the existing Sunoco infrastructure when compared to the off-site alternatives presented in Table 2 and further discussed in Section 3.2.1. The Preferred Alternative would result in the permanent conversion of 285 acres of undeveloped land to industrial use, including

256 acres of wetlands and 589 linear feet of waterbodies (excluding the Neches River shoreline). Further, the Preferred Alternative would be approximately 2,450 feet from the nearest residences. In addition, the Preferred Alternative is on a property already owned by Sunoco and would not require the acquisition of additional land; thereby minimizing the number of landowners affected by the Project.

While the Preferred Alternative would result in comparable wetland impacts to Off-site Alternative 1, the Preferred Alternative has significantly fewer waterbody impacts and is much further removed from residential areas. Therefore, the Preferred Alternative was considered the least environmentally damaging practicable alternative.

3.2.2 Off-site Alternatives

Off-site Alternative 1

Off-site Alternative 1 would utilize the same area for Dock 7/8 as the Preferred Alternative but would be located approximately 1,200 feet west of the existing Nederland Terminal on property owned by the City of Port Neches. As Off-site Alternative 1 is not currently owned by Sunoco, the acquisition of the property would result in additional landowner impacts as compared to the Preferred Alternative. Due to the distance from the Nederland Terminal, additional pipelines would be necessary to connect to existing Sunoco infrastructure. Off-site Alternative 1 would result in comparable wetland impacts to the Preferred Alternative; however, it would have greater impacts on waterbodies, resulting in the fill of approximately 2,892 linear feet of National Hydrography Dataset (NHD) waterbodies. Further, Off-site Alternative 1 would be much closer to residences than the Preferred Alternative resulting in increased noise and light disturbance on residential areas. Due to increased landowner impacts, distance from the Nederland Terminal, increased waterbody impacts, and impacts on nearby residential areas, Off-site Alternative 1 was not considered the least environmentally damaging practicable alternative.

3.2.3 On-site Alternatives

On-site alternatives were considered to be alternative sites within the same property as the preferred alternative, including alternative layouts that were assessed during the design phase.

On-site Alternative 1

On-site Alternative 1 includes the development of the entire 296-acre property owned by Sunoco, including the area between Dock 7/8 and the North Development Area. During the design phase, Sunoco minimized impacts on wetlands and canals in this area by removing it from the workspace. As a result, On-site Alternative 1 would impact 25 acres of additional wetlands and 1,944 linear feet of additional

waterbodies when compared to the Preferred Alternative. Due to these additional environmental impacts, On-site Alternative 1 was not considered the least environmentally damaging practicable alternative.

On-site Alternative 2

On-site Alternative 2 would utilize a reduced footprint when compared to On-site Alternative 1, including minimizing the workspace between Dock 7/8 and the North Development Area. The overall footprint of On-site Alternative 2 would be 285 acres, 10 acres more than the Preferred Alternative. In addition, development of the Preferred Alternative reduced impacts by further limiting workspace in wetlands between Dock 7/8 and the North Development Area. As a result, On-site Alternative 2 would result in 14 acres of additional wetland impacts. Due to these additional environmental impacts, On-site Alternative 2 was not considered the least environmentally damaging practicable alternative.

On-site Alternative 3

On-site Alternative 3 involves an alternative layout for the modernization of Dock C and does not consider onshore development alternatives within the same property. Under this alternative, the existing Dock C would be repurposed to accommodate the larger vessels up to 760 feet in length and meet the purpose and need of the Project but would not be demolished and rebuilt landward of its current location as proposed in the Preferred Alternative. Dredging and upgrades to the existing fendering system would occur, but the fender line at Dock C would remain as it is today. In this scenario, larger deep draft vessels calling on Dock C would be less than 300 feet from the maintained Neches River channel.

As identified in Table 2 and discussed above, impacts resulting from On-site Alternative 3 would only differ from the Preferred Site in the configuration of Dock C. Sunoco met with the Sabine-Neches Pilots Association, who expressed concerns regarding placement of the dock less than 300 feet from the navigation channel while moored. By maintaining the current location of the fendering line, Dock C would continue to be less than 300 feet off the Neches River channel, potentially creating unsafe conditions for passing vessels. In order to accommodate this set-back, modifications to the Dock C fendering system are necessary. As the Dock C configuration proposed under the Preferred Alternative would not result in impacts on navigation, On-site Alternative 3 was dismissed from further consideration.

4.0 CONCLUSION

After reviewing the three site alternatives and the no-action alternative for the proposed Project, Sunoco concluded that the Preferred Alternative is the only practicable alternative that is also the least environmentally damaging alternative.