

ALTERNATIVE ANALYSIS

AVOIDANCE AND MINIMIZATION

The project has been designed with the smallest footprint practicable to achieve the purpose and need described below. Due to space limitations as a result of compressing the project design, all wetlands within the footprint of the project will be impacted. Expanding the project to a more typical layout would significantly increase the amount of wetland impacts.

EXISTING CONDITION OF PROJECT SITE

The property's vegetation is relatively diverse, the non-wetland areas being dominated by an overstory of loblolly pine (*Pinus taeda*), sweetgum (*Liquidambar styraciflua*), southern red cedar (*Juniperus silicicola*), water oak (*Quercus nigra*) and a relatively dense understory of yaupon (*Ilex vomitoria*), Chinese privet (*Ligustrum sinense*) and Japanese privet (*Ligustrum japonicum*), southern dewberry (*Rubus trivialis*), and catbriar (*Smilax bona-nox*). The herbaceous wetland areas were found to be dominated largely by cattails (*Typha latifolia*) and scattered Chinese tallow (*Triadica sebifera*), but also with giant bulrush (*Schenoplectus californicus*), sedge (*Carex jorii*), and scattered bald cypress (*Taxodium distichum*). Some forested and shrub wetland areas were dominated by Chinese tallow, black willow (*Salix nigra*), baccharis (*Baccharis halimifolia*), and occasional bald cypress and red maple (*Acer rubrum*).

Much of the property has previously been impacted by historical dredged material disposal and other uses. The percentage of invasive species (cattail, willow, Chinese tallow, privet, alligatorweed, *Salvinia*, *Phragmites*, etc.) is high due to previous disturbance of the site and surrounding area. As a result, the value of the wetlands is relatively low (FCIs of 0.3 to 0.5 for interior wetlands and 0.6 to 0.7 for fringe wetlands) (see Mitigation Plan iHGM Analysis).

PURPOSE & NEED

The purpose and need of the new development at the Port of Beaumont (Port) Orange County South Terminal Property is to meet the demand of new and existing business by continuing to expand facilities to accommodate additional capacity. The proposed new docks and tank storage will be used to transfer petroleum products originating by pipeline to the Port's existing facilities, and eventually shipped out by rail, barge, ships or pipelines to various facilities along the Sabine-Neches corridor, throughout the Gulf Coast and internationally. The proposed facility needs to accommodate a minimum of 3.0 million barrels of storage with a throughput rate that will require two ship docks and one barge dock. The ship docks must be able to accommodate Suezmax size vessels (950 ft x 165 ft) and a barge dock to accommodate river inland barges. The minimum storage capacity for the tank farm layout will require a minimum of 30 acres of land. The Sabine Pilots will also require a 1100 ft. diameter turning basin to be included in the design for turning the Suezmax vessels. The river alignment in the area of this project provides for the space to layout the turning basin while limiting the impact to wetland areas.

SITING CRITERIA

The following siting criteria are necessary to achieve the stated purpose and need. The siting criteria has been established as the basis for this alternatives analysis and is applied equally to each alternative being considered. The following siting criteria are not listed in any specific order:

- Use of existing infrastructure and property owned or available to be obtained by the Port of Beaumont.
- Vessel access to the Neches River ship channel.
- Adequate space for two (2) deep-draft ship berths for Suezmax-sized vessels (approximately 950' long x 165' wide)
- Minimum available project area of approximately 30 acres for industrial development considering roadways, tank areas, equipment and infrastructure.
- Proximity to existing development is critical to minimize the length of pipeline required to transfer product to the existing storage terminal from the new marine terminal being proposed in this project. Existing terminal is located 1.4 miles upstream.
- Vehicular access to the site.
- Minimize environmental impacts and mitigation requirements. This includes avoidance or minimization of wetland impacts.
- Access to future pipeline installations.

DESCRIPTION OF ALTERNATIVES

Alternatives considered include a no-action alternative (permit denial), four (4) offsite alternatives, and one (1) onsite alternative. Please see the attached National Wetlands Inventory map for offsite alternative locations and preliminarily identified wetlands areas.

No-action Alternative

If the proposed project were not undertaken, the Port would not be taking advantage of reasonable use of its property and the opportunity for economic expansion. This adverse economic effect would additionally impact the local economy by eliminating new job opportunities, support services growth, and local tax revenues.

Offsite Alternatives

Offsite alternatives were defined as those potential sites furthest from the proposed site identified in the permit application and permit drawings. Certain offsite alternatives - requiring river crossings for product pipelines or less than 30-acres in total size - were not considered as viable potential sites since they would result in the Port's decision to not proceed with the project. The offsite alternatives considered in this analysis include the following:

Offsite Alternative #1: The Port of Beaumont owns additional land (90 acres) that is upstream on the Neches River from the proposed development. This additional land is bordered by the Neches River to the West, BNSF-UP-KCS Railroads to the South, Old Highway 90 to the East and Interstate Highway 10 to the North.

Offsite Alternative #2: The Optimus Steel Mill property (60 acres) in Orange County was considered as a proposed alternate. This property is bordered by Optimus's existing steel processing facility to the West and the Port of Beaumont's property to the East and the Neches River to the South. This offsite alternative is located upstream of the proposed onsite alternative. This facility is currently not available for purchase.

Offsite Alternative #3: The island located downstream on the Neches River from the proposed development is owned by ExxonMobil. This island property (60 acres) is bordered by the Neches River to the West and by wetlands to the North and East.

Offsite Alternative #4: The Port of Beaumont owns additional land (225 acres) that is downstream on the Neches River from the proposed development. This property is bordered by the Neches River to the Southwest and by wetlands to the North and East. This offsite alternative is currently planned as a dredge disposal placement area for the US Army Corp of Engineers.

Onsite Alternative

This proposed site is a largely undeveloped 135 acre tract of land that the Port of Beaumont owns bordered by the Optimus steel mill (formerly Gerdau Ameristeel) to the West, the Neches River to the South, and a canal to the East. The onsite alternative considered in this analysis includes the following:

Onsite alternative (Proposed): This alternative would position the proposed project near the Southeast corner of the proposed site adjacent the Neches River and across from ExxonMobil's facility in Beaumont, Texas.

EVALUATION OF ALTERNATIVES

Offsite Alternative #1

Siting Criteria	Evaluation (YES if siting criteria is met & elaborated if not met)
1 Port Owned Property	YES
2 Vessel Access to Neches River	YES
3 Room for 2 Deep-Draft Berths	NO; The federal deep-draft channel does not extend the full length of the shoreline required for two ship docks.
4 Minimum Available Area of 30 Acres	YES
5 Proximity to Existing Port Development	YES
6 Vehicular Access to the Site	YES Approx. 90-acres
7 Minimize Environmental Impacts	The majority of this area has been used historically for dredged material disposal and is a mix of herbaceous and forested wetlands and forested uplands. Chinese tallow and willow are prevalent in many areas, but red maple, water oak, cypress, and green ash are also prevalent. The wetland areas have 20%+ of invasive species, including Phragmites, alligatorweed, tallow, and cattails. Total acreage of wetlands on this site is estimated at approximately 15 acres based on NWI mapping. The wetlands would score low to intermediate on with iHGM with average FCIs of 0.4 to 0.5.” ¹

NOTES

1. Commentary on quality and function of wetlands provided by Horizon Environmental Services, Inc.

EVALUATION OF ALTERNATIVES (continued)

Offsite Alternative #2

Siting Criteria		Evaluation (YES if siting criteria is met & elaborated if not met)
1	Port Owned Property	NO; This alternative would require the Port to purchase river-front property from the current landowner, Optimus Steel. Optimus Steel operates an existing steel mill on their property and most likely have plans to use this property for their own expansion.
2	Vessel Access to Neches River	YES
3	Room for 2 Deep-Draft Berths	YES
4	Minimum Available Area of 24 Acres	YES
5	Proximity to Existing Port Development	YES
6	Vehicular Access to the Site	NO; This alternative would require a new access road to be developed.
7	Minimize Environmental Impacts	Approx. 54-acre site “This site contains scattered depressional wetlands resultant from historical dredged material placement. The wetland areas are highly invaded by tallow with up to 85% coverage of invasives. Total acreage of wetlands on this site is estimated at approximately 6 acres based on NWI mapping. The wetlands would score low with iHGM (0.4 FCI) due to lack of connectivity and high invasive species. The site contains approximately 5 acres of wetlands based on NWI mapping.” ¹

NOTES

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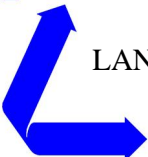
EVALUATION OF ALTERNATIVES (continued)

Offsite Alternative #3

Siting Criteria		Evaluation (YES if siting criteria is met & elaborated if not met)
1	Port Owned Property	YES
2	Vessel Access to Neches River	YES
3	Room for 2 Deep-Draft Berths	YES
4	Minimum Available Area of 24 Acres	YES
5	Proximity to Existing Port Development	NO; This alternative would require pipelines under the river to connect the property to the existing site infrastructure.
6	Vehicular Access to the Site	NO; This alternative would require the addition of roads and a bridge to cross the water to access the site.
7	Minimize Environmental Impacts	Approx. 57-acre site. “ This site is a remnant island surrounded by the Neches River and an oxbow. This site has also been historically used for dredged material disposal and contains a mixture of forested and herbaceous wetlands and uplands. The majority of the wetlands abut the river and have high connectivity. The iHGM value of the fringe wetlands would be expected to have an average FCI of 0.7 to 0.8. the site contains approximately 12 acres of fringe wetlands based on NWI mapping” ¹

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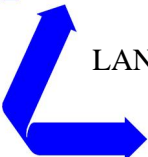
EVALUATION OF ALTERNATIVES (continued)

Offsite Alternative #4

Siting Criteria		Evaluation (YES if siting criteria is met & elaborated if not met)
1	Port Owned Property	YES but this property is currently under an easement for use as a dredge material placement area to the USACE and is not available for development.
2	Vessel Access to Neches River	YES
3	Room for 2 Deep-Draft Berths	YES
4	Minimum Available Area of 30 Acres	YES
5	Proximity to Existing Port Development	NO; This alternative would require pipelines under the river or through wetlands to connect the property to the existing site infrastructure. It is located approximately __ miles away requiring additional infrastructure to access the site.
6	Vehicular Access to the Site	NO; This alternative would require the addition of roads through wetlands to access the site.
7	Minimize Environmental Impacts	Approx. 242-acre site. “This site is a remnant island surrounded by the Neches River and an oxbow (Star Bayou). The site has historically been used for dredged material disposal and is a mixture of wetlands and uplands. Approximately 45% of the site is wetland based on NWI mapping with a combination of forested and herbaceous wetlands. Many of the wetlands are abutting the river and have high connectivity. FCI scores would be expected to be 0.7 to 0.8 for most of the wetlands.” ¹

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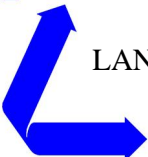
EVALUATION OF ALTERNATIVES (continued)

Onsite alternative #1 (Proposed)

Siting Criteria		Evaluation (YES if siting criteria is met & elaborated if not met)
1	Port Owned Property	YES
2	Vessel Access to Neches River	YES
3	Room for 2 Deep-Draft Berths	YES
4	Minimum Available Area of 30 Acres	YES
5	Proximity to Existing Port Development	YES
6	Vehicular Access to the Site	YES
7	Minimize Environmental Impacts	<p>Approx. 130-acre site with approx. 83-acres of wetlands. Project estimated to impact approx. 20.6-acres of wetlands.</p> <p>“Impacts from the proposed project will include 20.6 acres of wetland, including tidal wetlands (13.72 ac) and non-tidal (6.88 ac) wetlands adjacent to the Neches River. The non-tidal wetlands are generally low quality due to being confined behind existing dredged material containment levees with little hydrological connectivity to the Neches River under normal conditions and a high degree of infestation by invasive species (tallow, giant cane). The 13.72 acres of tidal wetland have direct connectivity to the river, but are also highly infested with invasive species, including Phragmites, alligatorweed, tallow, and cattails. Much of the property has previously been impacted by historical dredged material disposal and other uses. The percentage of invasive species (cattail, willow, Chinese tallow, privet, alligatorweed, <i>Salvinia</i>, <i>Phragmites</i>, etc.) is high due to previous disturbance of the site and surrounding area. As a result, the value of the wetlands is relatively low (FCIs of 0.3 to 0.5 for interior wetlands and 0.6 to 0.7 for fringe wetlands).”¹</p>

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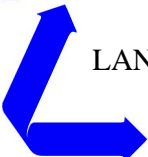


CONCLUSION

Offsite alternatives #1, #3 & #4 fail to meet primary criteria that make them unsuitable to satisfy the stated goal including inadequate deep-draft access (#1), inadequate vehicular access (#3) and unavailable for development due to easements with the USACE (#4). The most reasonable alternative to the Proposed Onsite Alternative is Offsite Alternative #2.

Offsite Alternative #2 meets most of the criteria of the project except that it is not currently owned by the Port and available for development. While this alternative may impact less acreage of wetlands, it would require a substantial cost to purchase and develop vehicular access. This additional cost and time to purchase and develop would hinder the economic development of the area and deprive the Port use of similarly available property.

The decision to pursue the Onsite Alternative over Offsite Alternative #2 is based on the fact that it meets all of the siting criteria and it is available for immediate development.



COMPARISON MATRIX

When evaluating each siting criteria for each alternative, “YES” indicates that the siting criteria is met for this alternative and “NO” indicates that the siting criteria has not been met and additional information is provided.

Siting Criteria	Offsite Alternative #1	Offsite Alternative #2	Offsite Alternative #3	Offsite Alternative #4	Onsite Alternative (Proposed)
1 Port Owned Property	YES	NO; This alternative would require the Port to purchase river-front property from the current landowner, Optimus Steel.	YES	YES but this property is currently under an easement for use as a dredge material placement area to the USACE and is not available for development.	YES
2 Vessel Access to Neches River	YES	YES	YES	YES	YES
3 Room for 2 Deep-Draft Berths	NO; The federal deep-draft channel does not extend the full length of the shoreline required for two ship docks.	YES	YES	YES	YES
4 Minimum Approx. 24-acres	YES	YES	YES	YES	YES
5 Proximity to Existing Port Development	YES	YES	NO; This alternative would require pipelines under the river to connect the property to the existing site infrastructure.	NO; This alternative would require pipelines under the river or through wetlands to connect the property to the existing site infrastructure. It is located approximately 2 miles away requiring additional infrastructure to access the site.	YES
6 Vehicular Access to the Site	YES	NO This alternative would require a new access road to be developed.	NO; This alternative would require the addition of roads and a bridge to cross the water to access the site.	NO; This alternative would require the addition of roads through wetlands to access the site.	YES
7 Minimize Environmental Impacts	Approximately 15 acres of wetland impact – low value wetlands.	Approximately 6 acres of low value wetlands impacted	Approximately 12 acres of moderate to high quality wetlands impacted	Approximately 22 acres of moderate to high quality wetlands impacted	Approximately 20.6 acres of low to moderate quality wetlands impacted