3.0 ALTERNATIVES INCLUDING THE PROPOSED ACTION

3.1 INTRODUCTION
The identification and evaluation of alternative methods of accomplishing the purpose and need for the Proposed Action are two of the most important elements of the EIS process. Only alternatives that would reasonably meet the defined purpose and need for the Proposed Action require detailed analysis in this EIS. From a practical standpoint, the alternatives should use existing ASPA property with minimal or no acquisition, and they must produce cost savings sufficient to attract traffic from the projected increases in container traffic as well as from other ports. Reasonable alternatives include those that are practical or feasible from the technical and economic standpoint and make common sense. NEPA requires evaluation of the No-Action Alternative in addition to the Proposed Action and other reasonable alternatives that would accomplish its purpose and need.

3.2 No-Action Alternative
The No-Action Alternative must be considered for projects being reviewed under Section 10 of the Rivers and Harbors Act and Section 404 of the CWA. The Choctaw Point Terminal project cannot be constructed without a DA permit. The No-Action alternative for a permit application is “denial of the permit.” With this alternative, land use and development trends in the study area would continue as though the project never existed. The ASPA would continue to market the upland portions of the Gharrows Bend tract for industrial development. No Section 10 or Section 404 permits would be required since wetlands and navigable waters would not be affected. The ASPA would also seek other water-dependent industries for the site. Other types of water-dependent activities would require evaluations in a NEPA process and permits for implementation. The No-Action Alternative is used to establish a baseline against which the Proposed Action is evaluated.

3.3 Proposed Action
On December 17, 2001, the ASPA submitted a Joint Permit Application and Notification to the USACE, Mobile District, and ADEM. Subsequently, the USACE and ADEM issued a Joint Public Notice (Public Notice Number AL01-04269-U) for the proposed project on January 28, 2002. Agency and public scoping meetings were held on February 6, 2002, and February 21, 2002, respectively. Information related to the project was gathered at these meetings and through other contacts with agencies and the public during the scoping process. Environmental studies and additional engineering analyses, including conceptual design, have also been conducted since submittal of the Joint Permit Application. This has led to adjustments and refinements to the project in the interest of such considerations as:

- **Navigation Safety**

  Navigation safety issues with the original berthing configuration were identified by the Mobile Bar and Harbor Pilots. The original plan berthed ships on Choctaw Point perpendicular to the Mobile Ship Channel. The Mobile Bar and Harbor Pilots pointed out that the narrow space between
Choctaw Point and McDuffie Island does not allow sufficient space to safely maneuver and berth ships at this location. The original configuration also caused safety concerns related to maneuvering ships into high currents in the ship channel, especially during high river discharges. For these reasons, the berth configuration was changed as shown on Figure 3-1. The change in the berthing configuration discussed above would increase filling water bottoms from approximately 17 to 29 acres, all of which have been previously impacted by navigation dredging activities.

- **Avoidance and Minimization of Impacts to Aquatic Resources**
  The original configuration in the Joint Permit Application included a 60-acre treatment wetland and green space area that extended into Garrows Bend. After further engineering and analyses, the ASPA modified its plan to eliminate this concept. This configuration will avoid direct impacts to that area and eliminate potential conflicts with the Federal Garrows Bend Restoration Project. The containment dike parallel to Garrows Bend has been moved further to the west. Design constraints associated with the alignment of the railroad tracks in the proposed intermodal rail yard require the dike to be located as shown on Figure 3-1. The Southern Drain will be bridged rather than filled to avoid impacts to wetlands and water bottoms. These project modifications reduce the filling of wetlands and water bottoms by approximately 51 acres. Other design considerations may also have the potential to produce minor adjustments to the final total of impacted acreage.

- **Operational Efficiencies**
  Refinements in the project design have improved the overall operational efficiency of the proposed project. These refinements include changes in the layout of the intermodal rail yard, intermodal container yard, and traffic control areas. The current layout of the proposed project is shown on Figure 3-1, and the original layout is shown on the original permit application in Appendix C.

- **Mitigation Plan**
  The development of a mitigation plan for impacts to wetlands and water bottoms has evolved during the EIS process. The proposed Mitigation Plan (Appendix I) was developed utilizing a collaborative interagency process to evaluate the impacts and to determine appropriate mitigation measures.
3.3.1 Proposed Choctaw Point Terminal Project

The location of the proposed project is shown on Figure 1-1. The proposed project would be constructed in three stages as described in the following paragraphs. A plan view of the proposed Choctaw Point Terminal project is shown on Figure 3-1. It is estimated that approximately 4 million cubic yards of fill material will be required for the proposed project. Fill material for the proposed project would come from existing USACE/ASPA Dredged Material Disposal Areas (DMDAs) used for the Mobile Harbor Project, USACE DMDAs on the Alabama and/or Tombigbee Rivers, from excavation required to construct wetland mitigation areas, or from commercial sources or other stockpiles. The material in the USACE DMDAs on the Alabama and Tombigbee Rivers has already been tested and found to be clean. The U.S. Bureau of Mines has analyzed material from the USACE disposal areas most likely to be used for this project and found the material to be mostly sands (<2% fines) that pass Toxic Characteristic Leaching Procedure (TCLP) testing (Appendix O). Possible use of material from the ASPA McDuffie Island DMDA will also be considered. If the material is suitable for use as fill, additional capacity would be made available at the DMDA. Specific DMDAs or other sources that will provide the source of “clean” fill material will be selected during the design phase of the project based on factors including quantity, quality, and cost. Approximately 700,000 cubic yards of fill may come from excavation required to construct mitigation areas for the proposed project. Additional testing of the fill material will be conducted during the design phase, and the results will be provided to ADEM. Material with a high percentage of sand would be generally used for fill. Materials with a greater percentage of fines may be used if appropriate soil stabilization measures such as wick drains and surcharge can effectively consolidate the material in a timely and cost-effective manner. Consideration is also being given to utilizing a light-weight material that is a by-product of power plants for a special backfill application behind the wharf complex. Sample tests of this material indicate it passes the TCLP criteria. Select fill material from commercial sources may also be utilized as required. Major elements of the proposed project are described in the following paragraphs.

3.3.1.1 Docking Facilities – Dredging, Wharves, and Cranes

The Proposed Action includes construction of a 2,000-foot wharf parallel to the Mobile Ship Channel as shown on Figure 3-1. The entire cellular cofferdam retention system (2,000 feet) and 1,000 feet of the wharf structure supported on top of the cofferdam would be constructed during Stage I of the proposed project. The remaining 1,000 feet of the wharf structure would be constructed during Stage II. Construction of the cellular cofferdam retention system could require dredging the entire area under the bulkhead to -55 feet to remove extremely soft soils. Approximately 350,000 cubic yards of material would be mechanically dredged and transported for disposal. The material to be dredged has been tested for contamination and determined to be suitable for normal disposal operations in the Gaillard Island Dredged Material Disposal Area (MACTEC 2003a) (Appendix M). It has also been determined that the disposal operation would comply with State water quality standards (MACTEC 2003a). The MACTEC report is presented in Appendix M. The USACE has developed a disposal
concept, including appropriate environmental protection measures, to utilize Gaillard Island for disposal of the material. The disposal concept includes measures to protect existing vegetation, water quality, and bird nesting. No dredging-related activities would be allowed on Gaillard Island between March 31 and August 31 due to bird nesting activities (see Appendix B). The use of Gaillard Island for disposal of dredged material will be coordinated with the USACE to determine any adjustment in the disposal concept that may be required at the time of the disposal operations.

Two alternative methods for constructing the wharf structure are being considered during the design phase. Both methods would eliminate the need for dredging the extremely soft soils. Either method would avoid the environmental impacts associated with dredging and disposal of the soft soils. The first method involves the construction of larger coffer cells (78 feet vs. 60 feet in diameter) that would allow in-place consolidation of the soft soils. The second method involves construction of sheet pile bulkhead with a pile supported wharf on the ship channel side of the bulkhead. This innovative design would require the use of select light-weight fill material (bottom ash) behind the bulkhead to reduce pressure on the bulkhead. The selection of the wharf structure design would be made during the design phase.

An adequate number of cranes of sufficient size would be provided to service the container ships expected to call on the Choctaw Point Terminal. The number of cranes would increase over time in proportion to the number of containers moving through the terminal. Initially, two rail-mounted container cranes would be installed at the terminal, eventually increasing to five or six as demand and terminal throughput approaches its maximum capacity.

3.3.1.2 Container Yard and Support Facilities
Initially, the ASPA plans to develop the area adjacent to the wharf for container processing and storage, support and operations facilities, control gate access, and roadways as shown on Figure 3-1. These facilities would be constructed in three stages (Figure 3-2). Stages I, II, and III would cover 75, 25, and 20 acres, respectively. The 120 acres includes approximately 29 acres of water bottoms that would be filled, as described above.

3.3.1.3 Intermodal Yard
The ASPA plans to develop an intermodal rail yard, as shown on Figure 3-1. The primary infrastructure would be constructed in Stage I. The north end of the project site would serve as the water-truck interface, and the truck-rail interface would be located near the south end. Track extensions would allow container unit trains to be accommodated off the rail mainlines. Rail connections would be constructed at the south and north limits of the site to offer maximum train handling flexibility and minimum conflict with the existing rail traffic to McDuffie Island. The two operational terminals would be linked through a grade-separated roadway, designed to minimize transfer time and costs in a manner that cannot be readily duplicated at competing ports in the region. The grade separation of the roadway and railroad would provide unimpeded access to the area. The rail yard would be connected to the existing rail lines adjacent to the
western boundary of the site as shown on Figure 3-1. Truck access to the Interstate highway system would be via the Broad and Virginia Street I-10 interchanges. Initially, approximately 88 percent of the containers are projected to move by rail and 12 percent by truck. This ratio is projected to shift to 75 percent by rail and 25 percent by truck in 2020, reflecting the anticipated growth of the local market (M&N 2002).

The dike for the intermodal rail yard must be constructed across some very soft soils that are not structurally suitable for dike construction. Some of the soft soils also contain contamination. Two alternative construction methods are being considered to address this problem. The first method involves excavating the soft soils and back filling the area with clean fill that is structurally suitable. The soft soils are being tested for chemical contamination. The soft soils would be disposed of in the proper classification of landfill, depending upon the level of contamination found in the sediments. The second alternative method would involve construction of the dike across the soft soils using reinforced geotech fabric and wick drains to consolidate the soft soils in-place. This method would eliminate the need for excavating the soft soils and would provide a clean cap on top of any contaminated soils. The soft soils would be tested to determine if any treatment of water from the wick drains would be required. Both of these methods would be addressed during the design phase, and appropriate measures would be incorporated into the construction plans to ensure that all Federal, state, and local environmental requirements are addressed.

The large percentage of TEUs projected to move by rail accentuates the necessity and economic efficiency of locating the intermodal yard as an integral component of the container port complex. As noted in Section 2.2, more efficient land transportation with increased use of rail conforms with the 1998 guidelines for port terminal designs and operations. These guidelines were developed to address the implications of larger vessels entering the container fleet (USDOT 1998). The adjacent location of the intermodal rail and roadway intermodal facilities to the deep water marine terminal also meets the goals for efficient intermodal transfers to support the growth demands of the MTS (USDOT 1999). The location of the intermodal rail yard on Garrows Bend, with dedicated and controlled access to the docking and other terminal facilities, would provide a functional and efficient port complex that integrates the essential intermodal aspects (deep draft navigation, rail, and truck) into effective container transfer and handling relationships.

3.3.1.4 Stormwater Management Facilities

It is anticipated that site drainage systems for the proposed facilities would consist of trench drains, inlets with underground pipe systems, channelization improvements, and a combination thereof. All off-site tributaries to the site would be accommodated in the site design and conveyed to outfalls in Garrows Bend and the Mobile River. On-site drainage associated with site development would also be conveyed to either Garrows Bend or the Mobile River.

The Choctaw Point Terminal site will fall under the EPA’s NPDES Phase II Stormwater Program. Therefore, State and Federal regulations require that an NPDES permit be obtained for both the construction and post-construction phases
of the project. NOI forms, backup data and calculations, and appropriate fees, will be required for permit submission with both permits.

The NPDES permit for construction requires that a Construction Best Management Practices Plan (CBMPP) be prepared and fully implemented with the intent of minimizing impacts to State waters caused by stormwater runoff. As part of the CBMPP, erosion and sediment control measures would be applied throughout the construction process. The “Alabama Handbook for Erosion Control, Sediment Control, and Stormwater Management on Construction Sites and Urban Areas” (June 2003) shall be used for guidelines on designing and implementing the construction phase stormwater control structures. During construction, it is anticipated that monitoring on-site rainfall and discharges from any stormwater control structure will be executed. To avoid impact to State waters, the increase in background turbidity levels of the receiving waters from the site must not exceed 50 nephelometric turbidity units (NTU).

For the post-construction phase, ADEM requires that the site owner and/or operator obtain a general NPDES permit authorizing discharges associated with the developed site. The ASPA and/or their lessee would be responsible for complying with NPDES permit requirements. Based on the currently envisioned land use for the facilities, the most applicable NPDES permit for the Choctaw Point Terminal facilities is a general industrial type permit for a transportation facility. The general NPDES transportation permit is form ALG140000, which authorizes the discharge of stormwater from most transportation terminals and warehousing activities. This permit requires that an effective Best Management Plan (BMP) for stormwater management and control be prepared no later than the effective date of coverage.

Under NPDES permit number ALG140000 for transportation, there are a number of requirements for maintaining the stormwater control which are expected to apply to the proposed sites. The permit requires that discharges from the sites be monitored and results be reported to ensure adequate control measures are in place. The specific discharge monitoring requirements which may apply to the sites are listed under DSN001, DSN002, and DSN010 in the Permit Application. The frequency of these monitoring requirements is once every six months. It is also important to note that the permit requires that the sampling be completed within the first thirty (30) minutes of the beginning of discharge in order to determine BMP treatment levels of the first flush. In addition, there is a discharge limitation for oil and grease of 15 mg/l which must be measured and reported once every six months. The permit also requires that the discharge have no sheen and no discharge of visible oil, floating solids, or visible foam other than in trace amounts. The permit limitations regarding velocity are not anticipated to be applicable at Choctaw Point where deep water will dissipate energy almost immediately with no downstream erosion impacts. Energy dissipaters are planned for the stormwater discharge into Garrows Bend and for the relocated Tennessee Street Drain because these areas are shallow and subject to erosion.

The stormwater control measures proposed for the post-development phase of the proposed facilities include proprietary underground on-line and off-line BMPs.
The proposed stormwater treatment facilities would be used to treat stormwater runoff from the project site prior to its discharge to the Mobile River or Garrows Bend. The proposed facilities would include the use of advanced oil and grit separator technology to efficiently remove grit, contaminated sediments, hydrocarbons, and floating contaminants from surface runoff. The possible use of the proposed system was discussed with ADEM at a May 6, 2003, meeting and in subsequent discussions. The BMPs are acceptable as long as they can be designed to meet permit requirements. Specific requirements for the design and construction of stormwater treatment facilities can be found in the Alabama Handbook.

It is anticipated that both the Choctaw Point Terminal and the Garrows Bend ICTF will have bulk petroleum storage to allow periodic refueling of equipment that operates at the facilities. The size of the storage will be approximately 10,000 gallons at each site. Each facility will have a valid Spill Prevention Control and Countermeasures (SPCC) Plan pursuant to 40 CFR 112. Discharges from the facility must be inspected and recorded annually to receive an SPCC certification. The fuel storage tanks will have secondary containment around them to prevent groundwater pollution.

3.3.1.5 Public Access
The ASPA currently intends to provide public access and public use amenities on or in the proximity of the project area. Early in the Master Plan development for the Choctaw Point Terminal project, the ASPA identified the opportunity to enhance public waterfront access to the western shore of Mobile Bay complementing the proposed Crepe Myrtle Trail (CMT) which is an ongoing civic movement to provide linear parks and recreational facilities that celebrate the history and past of the region. The ASPA is evaluating alternatives regarding public access near the proposed Choctaw Point Terminal site.

An alternative being considered would complete a defined section of the proposed CMT. In 2002, the City of Mobile adopted a feasibility study that refined a recommended route for bikes and pedestrians for the CMT along the western shore of Mobile Bay contiguous to the proposed Garrows Bend ICTF (GS&P 2002). The ASPA, in conjunction with the Mobile Airport Authority (MAA), Mobile Transit Authority (MTA), and the SARPC, has identified the potential to complete an extensive section of the proposed CMT as part of the Choctaw Point Terminal public access plan. The project would consist of the construction of 4,100 feet of a bicycle path and pedestrian walkway from near the Broad Street entrance to Brookley Field (Arlington Point) on the south to the existing Broad Street/I-10 interchange to the north. The proposed alignment of the bicycle path and pedestrian walkway is on the east side of Broad Street.

Arlington Cove is the potential location for a rest area, limited parking, a new and improved transit stop, and greenspace setting of approximately 48 acres for expanded public use amenities. The eastern portion of the MAA property at Arlington Cove is proposed as a wetland mitigation site (see Appendix I). The development of the Arlington Cove properties, owned and maintained by the MAA and the USCG would require the participation and consent of these entities.
The development of public access and public use facilities would be coordinated with the City of Mobile. It is envisioned that the City of Mobile might participate in the development, maintenance, and operation of the public access and public use facilities. Public use facilities would be planned and designed to be compatible with the wetland mitigation site. Vegetative plantings would be selected to provide habitat as well as to improve the aesthetics of the area. The ASPA has entered into a Memorandum of Agreement (MOA) with the MAA and initiated discussions with local government officials/agencies regarding opportunities for the potential project at Arlington Cove. The ASPA is willing to actively participate in the consideration of reasonable efforts to enhance such waterfront access and facilities.

### 3.3.1.6 Value-Added Facilities

The proposed plan envisions the construction of commercial, value-added distribution and warehousing facilities on the remaining property west of the rail yard as shown on Figure 3.1. Value-added services are activities performed to increase the potential resale value of the commodities being handled, such as bar-coding, kitting, product manipulation, “pick and pack,” and assembly of components and marketing materials. Peripherally associated activities, such as product returns handling, may also exist. Locating value-added services on under-utilized land immediately adjacent to gateway ports throughout the world strengthens ports’ competitiveness and would do the same for Mobile. These facilities would be constructed and operated by private companies on land leased from the ASPA. Guidelines are being developed to control the site plans and structures for the value-added facilities to assure appropriate set-backs, stormwater management, and aesthetic treatments.

### 3.3.1.7 Navigation Improvements

The 2,000-foot-long berthing area between the ship channel and the wharf would require deepening of approximately 15 acres of previously dredged river bottom to -42 feet to accommodate the container ships initially expected to call on the Port of Mobile. The existing depth within the 15-acre area ranges from approximately 40 feet to five feet near McDuffie Island. Approximately 350,000 cubic yards of material would be mechanically dredged from the berthing area and transported for disposal. The material to be dredged has been tested for contamination and determined to be suitable for normal disposal operations in the Gaillard Island DMDA (MACTEC 2003a). It has also been determined that the disposal operation would comply with state water quality standards (MACTEC 2003a) (see Appendix M). Approximately 70,000 cubic yards of material would be hydraulically dredged from the berthing area each year and placed in the McDuffie Island DMDA. The maintenance dredged material would be managed along with the 125,000 cubic yards of material placed in the disposal area each year from the McDuffie Terminal facility.

The existing 45-foot navigation channel currently extends up Mobile Bay to the north end of the McDuffie Terminal immediately south of the proposed project. On May 29, 1998, the ASPA requested that the USACE, Mobile District, provide assistance with actions necessary to extend the 45-foot Bay channel northward 2,100 feet. The requested Limited Reevaluation Report (LRR) was completed in
January 2000 and was approved by USACE, Headquarters, in July 2000 (USACE 2000). The LRR included an Environmental Assessment (EA) of the 2,100-foot deepening project that resulted in a Finding of No Significant Impact (FONSI). The LRR, EA, and FONSI are incorporated into this EIS by reference. An additional 1,200-foot extension of the 45-foot channel to serve the Mobile River Terminal just upstream of the Choctaw Point Terminal project has also been evaluated. The LRR for the 1,200-foot extension was approved by the USACE in March 2002.

3.3.1.8 Tennessee Street Drain Relocation

It is proposed that the Tennessee Street Drain be relocated to direct the stormwater to the Southern Drain to alleviate recurring flooding and to minimize penetration(s) in the proposed dike at Garrows Bend. The proposed relocation would create a new channel that diverts flows away from the existing undersized underground box culvert that is located under the Armstrong World Industries (AWI) warehouse and ties into the existing Southern Drain just south of the AWI loop road. A portion of the existing box culvert would be removed, and an open channel would be constructed upstream of the AWI culvert to carry up to 5,000 cubic feet per second (cfs) to the Southern Drain (Figure 3-3). The initial sizing of the channel shows that it provides adequate conveyance to limit upstream, rainfall-generated flooding based on a conservative preliminary analysis of the drainage area and the associated discharges for a 100-year storm event. The channel would require a 60-foot-wide base width with 1.5:1 rip-rap lined side slopes. Outfall velocities for the channel are anticipated to be between 10 and 14 feet per second under extreme conditions. It is anticipated that adequate energy dissipaters would be provided near the discharge point to prevent downstream erosion of the bottom sediments in the Southern Drain under extreme events. Details of the proposed relocation, including the channel design and the flow dissipation features would be addressed during the design phase.

The Tennessee Street Drain relocation would only transfer low flow to the Southern Drain since high flow already enters the Southern Drain through the Tennessee Street Drain Floodway. The relocation would impact a small amount (less than 0.2 acre) of fringe wetlands adjacent to the Southern Drain. Vegetation within the wetland primarily consists of a zone of cattails (Typha sp.) within the littoral zone and a broad expanse of common reed (Phragmites australis) occurring between the tidal areas and the uplands at the site. The common reed is the dominant vegetation present. Other vegetation noted within and along the upland edge of these wetlands includes scattered Chinese tallow (Sapum sebiferum), saltbush (Baccharis halimifolia), Japanese honeysuckle (Lonicera japonica), white mulberry (Morus alba), elderberry (Sambucus Canadensis), pepper vine (Ampelopsis arborea), and trumpet creeper (Campsis radicans). The precise amount will not be known until a more detailed design has been completed. The proposed wetland mitigation plan would be adjusted if required to maintain a minimum one-to-one ratio for wetland mitigation. Over time, a sediment delta would likely develop at the outfall of the relocated channel. The dredged pit located at the outfall was once used by AWI as a water source for fire protection. The pit would be expected to gradually fill with sediment and would likely become vegetated with wetland species similar to existing Southern Drain
wetlands. No impacts to navigation would be expected from the relocation. Also, the relocation would divert flow from one discharge point to another and would not be expected to exacerbate water quality problems.

Additionally, the existing AWI culvert provides stormwater conveyance for the AWI site, and it would need to remain operational if the existing culvert is blocked at the upper end and flow is diverted. It is proposed that AWI site drainage would be accommodated by construction of a diversion channel along the east boundary of the AWI property as shown on Figure 3-3. The diversion channel would flow into the Southern Drain at the location shown on Figure 3-3. It is anticipated that velocities would again require that an energy dissipater be provided to prevent erosion of the bottom sediments in the Southern Drain under extreme flow events. Design details would be addressed during the design phase.

3.3.1.9 Proposed Mitigation Measures
Mitigation measures that could become part of the Proposed Action are discussed in the appropriate sections of the EIS. Measures will be incorporated to mitigate for project impacts to resources such as air quality, water quality, wetlands, EFH, water bottoms, and cultural resources.

3.4 Terminal Location Alternatives Considered
Only alternatives that would reasonably meet the defined purpose and needs for the Proposed Action require detailed analysis in this EIS. A tiered alternative screening and evaluation approach was utilized to identify potential reasonable alternative sites for development. All of the areas in close proximity to the Mobile Harbor and Theodore Ship Channels were initially considered because these areas could potentially meet the deep draft navigation requirement for the proposed project. These areas can generally be considered in three segments: (1) Mobile Harbor East Bank, (2) Mobile Harbor West Bank, and (3) the Theodore Ship Channel area. The east bank segment was eliminated from consideration because of the lack of rail access and lack of undeveloped land. The remaining segments were screened for potentially available property. Five potential terminal sites (Figure 3-4) were initially identified and assessed against site selection criteria to identify the potential alternatives to be analyzed in detail in this EIS.

The site selection process is described in the following paragraphs.

3.4.1 Selection Criteria
Site selection criteria were developed based upon USDOT guidelines (USDOT 1998) and other considerations. The site selection criteria are:

- Sufficient land available for mid-term requirements;
- Use of existing ASPA property with minimum or no acquisition;
- Deep water access available or can be provided for present and future container vessels;
- Rail, Interstate highway, and local road access in close proximity to site;
- Cost savings must be sufficient to attract traffic; and
- Avoids port use conflicts.
3.4.2 Evaluation of Candidate Sites

3.4.2.1 Middle Bay Port

The site of the former Navy Homeport on the Theodore Ship Channel contains a 600-foot pier, two 350-foot barge berths on the quay walls, and approximately 150 acres of backland. The site, owned by the ASPA, is on the 40-foot Theodore Ship Channel. Only two buildings are available for conversion to value-added warehouses and/or distribution facilities. One of these buildings and a 13-acre parcel of the site were recently leased to Kvaerner Oilfield Products, Inc. with an option to lease another 15+ acres.

This site would require demolition of the 600-foot pier to allow construction of two new 1,000-foot berths parallel to the shoreline. The new berths would impact a natural forested area that was avoided during Homeport development. The berthing area and the former 600-foot Navy turning basin would require expansion to handle ships up to 1,000 feet long. A breakwater would also be required to address the potential wave action on container ships berthed in this location, which is relatively unprotected. A rail spur extends to Cedar Point Road, approximately 3,300 feet west of the site, but the site configuration cannot accommodate unit trains which can be up to 8,000 feet long. Unit trains would block public roads and other businesses. The site is approximately seven miles from the Interstate highway system, and the last two+ miles of roadway transit residential areas, including elementary school crossings (M&N 2002).

Subsequent to the issuance of the DEIS, the ASPA executed a three-year agreement to sell Middle Bay Port to Exxon Mobil Gas, Inc., as a proposed site for a Liquefied Natural Gas receiving terminal.

The Middle Bay Port site has potential but also has some severe limitations and constraints. These constraints include its inadequate size (150 acres) and configuration, relatively large dredging and disposal requirements, inability to handle unit trains, inadequate highway and rail access, port use conflicts, and impacts to wetlands and a natural forested area. To be considered further, additional land would be required for an intermodal facility; the option agreement with Exxon Mobil Gas would have to be addressed; and the other limitations and constraints would have to be addressed.

3.4.2.2 Bulk Plant

The existing Bulk Plant was evaluated as a potential site for terminal development. The site covers approximately 22 acres and offers an efficient two-berth layout that would not interfere with other port activities. The ASPA Sibert Intermodal Rail Yard, CSX, Burlington Northern, and other intermodal facilities are located within half of a mile of the site. Connection to the rail yards/terminal would require complete restructuring of existing rail interchanges and the ASPA internal road system. The Sibert Intermodal Rail Yard and CSX Rail Yards are already operating at capacity (M&N 2002).

A significant disadvantage of the site is the relatively small size of the land available for terminal development. It is not possible to expand south into the existing general cargo open storage areas and maintenance facilities without the
loss of existing business. General cargo historically represents approximately 30 percent of ASPA gross revenues (M&N 2002).

The Bulk Plant site is not a reasonable alternative site for the proposed project because of its inadequate size (22 acres), lack of expansion capability, inability to handle unit trains, and port use conflicts. Its location north of the Bankhead and Wallace tunnels precludes deepening beyond a depth of 40 feet in the future. This location eliminates the possibility of accommodating larger classes of container vessels in the future.

3.4.2.3 Berth 2
The existing container handling area at Berth 2 is small at approximately 16 acres, and expansion potential is limited because the Mobile Convention Center is located immediately south, and general cargo facilities are located to the north. As discussed above, general cargo represents approximately 30 percent of ASPA gross revenues. Although the main CSX rail line passes along the perimeter of the site, there is no space for development of an intermodal terminal. The inability to handle unit trains offline would shut down all rail movement through Mobile to the extreme northern and western boundaries of Mobile County. The main line currently handles up to 26 unit trains per day, most of which cause significant interference with the Convention Center area and other locations. Berth 2 has recently been upgraded with pavement improvements, the installation of a mobile container handling crane and modernization of the existing gantry crane (M&N 2002).

The Berth 2 site is not a reasonable alternative site for the proposed project because of its inadequate size (16 acres), lack of expansion capability, inability to handle unit trains, and port use conflicts. Its location north of the Bankhead and Wallace tunnels precludes deepening beyond a depth of 40 feet in the future. This location eliminates the possibility of accommodating larger classes of container vessels in the future.

3.4.2.4 McDuffie Island
The McDuffie Island site represents a prime location for marine terminal development. It offers approximately 5,000 feet of deep-water frontage with a navigation channel authorized to 55 feet and dredged to 45 feet. The island is divided into four primary areas of activity or ownership (M&N 2002):

- McDuffie Terminal – 172 acres (owned and operated by the ASPA);
- Corus DRI Plant – 35 acres (long-term lease/encumbered from ASPA);
- Waste water treatment plant – 34 acres (owned and operated by MAWSS); and
- DMDA – 96 acres (owned and operated by ASPA).

McDuffie Terminal is of primary importance to the Port, with an estimated throughput capacity of approximately 23 million tons and a ground capacity of two million tons. Coal terminal usage is cyclical in nature, reflecting worldwide demand for Alabama coal and the demand of fossil fuel power plants in the region. Imports currently dominate the use of the facility due to environmental
requirements for low sulfur coal at regional fossil fuel power plants. The Corus DRI Plant has temporarily suspended operations due to high energy costs. Historically, bulk operations at ASPA represent over 50 percent of the ASPA gross revenues.

The McDuffie Island site would make an excellent location for the proposed project except for conflicts with other port uses. The 172-acre McDuffie Terminal site is in full use, and the 35-acre Corus DRI plant site is under long-term lease. The Corus DRI site is also too small and inappropriately oriented to serve as a container terminal or as an intermodal rail facility for the proposed project. Neither the waste water treatment plant nor the DMDA is available for redevelopment. For these reasons, the McDuffie Island site is not considered to be a reasonable alternative for the proposed project.

3.4.2.5 Choctaw Point-Garrows Bend

The existing Choctaw Point-Garrows Bend site is under-developed. Currently, part of the site is undergoing environmental remediation following the closure of a wood treatment plant and other activities that were located on the site (M&N 2002).

Marine access to the project site is excellent with the main navigation channel passing approximately 200 feet from the Mobile River shoreline. The overall site area, including the existing rail ferry terminal, is approximately 370 acres, which would meet the projected level of demand until approximately 2020 (M&N 2002). The site is owned by the ASPA. The project site’s location south of the Bankhead and Wallace tunnels allows deepening beyond a depth of 40 feet in the future. This location allows the possibility of accommodating larger classes of vessels in the future.

The undeveloped land between Garrows Bend and the I-10/CSX rail corridor would offer the potential for an integrated container terminal/value-added distribution warehousing development (M&N 2002).

The ASPA is in the process of relocating the existing rail ferry installation to improve service to existing customers and to provide opportunities for new customers (Public Notice No. AL-002-03090-U).

3.4.2.6 Summary of First Tier Alternative Screening

Table 3-1 summarizes results of the first tier screening of each candidate site utilizing selected site selection criteria discussed in Section 3.4.1. The Choctaw Point-Garrows Bend site is the only available property of sufficient size that is accessible to the 40-foot Mobile Ship Channel. Middle Bay Port has potential but also has severe limitations and constraints as discussed above. Both of these sites were evaluated further.
### TABLE 3-1: SITE SELECTION MATRIX

<table>
<thead>
<tr>
<th>Requirements</th>
<th>Middle Bay Port</th>
<th>McDuffie Island/ Garrows Bend</th>
<th>Choctaw Point/ Garrows Bend</th>
<th>Berth 2 Area</th>
<th>Bulk Plant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sufficient Land Available</td>
<td>Y¹</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Deep Water Access Available</td>
<td>Y²</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>(40’ minimum)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rail Access Available</td>
<td>N³</td>
<td>Y</td>
<td>Y</td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>Can site handle unit train?</td>
<td>N⁴</td>
<td>Y</td>
<td>Y</td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>Highway Access Available</td>
<td>Y⁵</td>
<td>Y</td>
<td></td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>Avoids Port Use Conflicts</td>
<td>N⁶</td>
<td>N</td>
<td>N</td>
<td></td>
<td>N</td>
</tr>
</tbody>
</table>

¹The location of available land precludes contiguous rail and marine facilities.
²Would require expansion of the existing turning basin
³Would require construction of spur line across private property
⁴ASPA property in proximity to Middle Bay Port has potential for use as an intermodal rail yard that could handle unit trains.
⁵Would require road upgrade through a residential area
⁶Portions of the site encumbered by short-term leases that have termination clauses.

#### 3.5 Second Tier Alternatives Screening

The alternatives evaluated during the first phase of screening were displayed at a public workshop for the proposed Permit Action. Based upon concerns expressed and questions asked by workshop participants, a second tier evaluation of potential alternatives was undertaken.

The primary concerns expressed were related to potential and/or perceived impacts to the Garrows Bend area of the proposed Choctaw Point Terminal project area. Issues or concerns expressed included:

- Loss of wetlands and aquatic habitat;
- Potential impacts to cultural resources; and
- Alternative use of the site for development of a public park in the vicinity of the former Monroe Park.

The workshop participants suggested several site location alternatives that they felt warranted further evaluation. These alternatives included:

- Alabama Port area;
- Blakeley Island area near Cochrane-Africatown Bridge;
- Choctaw Point with intermodal rail yard at Brookley Industrial Complex;
- Choctaw Point with intermodal rail yard at DMDA on McDuffie Island; and
- Middle Bay Port with acquisition (purchase or land swap) of additional adjacent land for the intermodal rail yard.

The Alabama Port area is not considered a reasonable alternative because of the extremely large dredging requirements, lack of available land, distance to Interstate Highway and rail lines, etc. The Blakeley Island site is not considered
to be a reasonable alternative because of wetland impacts and lack of rail access. The DMDA on McDuffie Island is not considered a reasonable alternative because of its inadequate size (96 acres), poor configuration, the need for continued use as a DMDA, and potential rail and truck route conflicts with the McDuffie Terminal operation. Brookley Industrial Complex is not considered a reasonable alternative because of the lack of adequate size of developable land. The large open areas near the runways would conflict with FAA requirements, and other areas are already developed. The suggested Middle Bay Port alternative is considered further but with the intermodal rail yard located on existing ASPA property adjacent to the rail spur rather than on the adjacent property not owned by the ASPA.

The alternatives screened during the second tier evaluation were:
- Middle Bay Port – West Intermodal Rail Option;
- Choctaw Point Terminal – Garrows Bend Intermodal Rail Option;
- Choctaw Point Terminal – West Intermodal Rail Option; and
- Choctaw Point Terminal – North Intermodal Rail Option.

Plan views of these alternatives are shown on Figures 3-1, 3-5, and 3-6. Potential dredged material disposal alternatives for the Middle Bay Port site include upland and Gulf disposal, use of Gaillard Island, and creation of a new dredged material disposal island in the Bay.

3.5.1 LAND USE
The City of Mobile’s Comprehensive Plan contains a General Land Use Plan. The purpose of the General Land Use Plan is to establish the most appropriate overall use of land within the City of Mobile and surrounding areas. Information from the General Land Use Plan was used in the following screening.

3.5.1.1 Middle Bay Port Terminal – West Intermodal Rail Option
The Middle Bay Port Terminal site and West Rail Intermodal Option site are located in areas classified industrial on the Plan. The highway transportation route would pass through industrial and residential land uses south of I-10. The rail spur has industrial land use on its north side and residential on its south side.

3.5.1.2 Choctaw Point Terminal – Garrows Bend Intermodal Rail Option
The Choctaw Point Terminal site and Garrows Bend Intermodal Rail Option site are located in areas classified industrial on the Plan. Both sites are located adjacent to the I-10 and CSX rail corridors.

3.5.1.3 Choctaw Point Terminal – West Intermodal Rail Option
The Choctaw Point Terminal site and West Intermodal Rail Option site are located in areas classified industrial on the Plan. The highway transportation route would pass through commercial, industrial, and residential land uses between the Choctaw Point Terminal site and the West Rail Option site. The rail spur has industrial land use on its north side and residential on its south side.
3.5.1.4 Choctaw Point Terminal – North Intermodal Rail Option
The Choctaw Point Terminal site, North Intermodal Rail Option site, and the transportation routes between them are classified industrial except for the downtown Mobile area (commercial) and the Convention Center/Cooper Park area (public and semi-public).

3.5.2 AIR QUALITY
Air emissions of NO\textsubscript{x} from trucks were selected as a screening factor for comparing alternative sites. Other air emission factors such as VOCs, CO, PM-10, and SO\textsubscript{x} would be proportionately the same for each alternative site since the emissions are based on miles driven. All calculations use 626,100 and 226,200 trucks per year in 2020 for transporting containers to and from intermodal rail yards and I-10, respectively, based upon a 75/25 rail to truck mix. The number of miles traveled by truck consists of two components: the miles traveled to move containers by truck from the container port to I-10 and the miles traveled by truck in transporting containers from the container port to the intermodal rail yard for those that would move by rail. The air emission factor for NO\textsubscript{x} is 0.015 pounds per mile for heavy-duty diesel trucks based on a fleet mix of 25 percent 1990 to 1999 models and 75 percent 2000 model year or later. NO\textsubscript{x} emissions for 1990 and 2000 model years are 0.018 and 0.014 pounds per mile, respectively (EPA 1998). This screening is not a comprehensive analysis of all air quality issues for the respective alternatives, but it does provide a basis for comparison of the relative contributions of air pollutants for each alternative.

3.5.2.1 Middle Bay Port Terminal – West Intermodal Rail Option
The distances from Middle Bay Port Terminal to I-10 and the West Intermodal Rail Yard are 7.2 miles and 5.2 miles, respectively. Movement of containers under this alternative would produce an annual NO\textsubscript{x} air emission of 73.2 tons per year.

3.5.2.2 Choctaw Point Terminal – Garrows Bend Intermodal Rail Option
The distances from Choctaw Point Terminal to I-10 and the Garrows Bend Intermodal Rail Yard are 1.4 miles and 0.5 mile, respectively. Movement of containers under this alternative would produce an annual NO\textsubscript{x} air emission of 9.5 tons per year. This is considered an over-estimation of air emissions for this option since heavy duty diesel trucks would not be used to move the containers from the marine terminal to the intermodal rail yard.

3.5.2.3 Choctaw Point Terminal – West Intermodal Rail Option
The distances from Choctaw Point Terminal to I-10 and the West Intermodal Rail Yard are 1.4 miles and 12.1 miles, respectively. Movement of containers under this alternative would produce an annual NO\textsubscript{x} air emission of 118.4 tons per year.

3.5.2.4 Choctaw Point Terminal – North Intermodal Rail Option
The distances from Choctaw Point Terminal to I-10 and the North Intermodal Rail Yard are 1.4 miles and 4.5 miles, respectively. Movement of containers under this alternative would produce an annual NO\textsubscript{x} air emission of 47.1 tons per year.
3.5.3 NOISE
For the purpose of this alternative screening analysis, potential noise impacts associated with the marine terminal, rail yards, and truck traffic were selected for comparison. Basically, the potential noise impacts would occur to receptors in close proximity to the marine terminal, rail yards, and local roads that would experience an increase in the amount of truck traffic utilizing the roadways. Increased truck traffic would consist of two components: the trucks on local roadways used to move containers from the container port to I-10 and the trucks on local roads used to transport containers that would move by rail from the container port to the intermodal rail yard. This noise screening is qualitative but does reflect the relative noise implications associated with the four alternatives.

3.5.3.1 Middle Bay Port Terminal – West Intermodal Rail Option
The closest noise sensitive receptors to the Middle Bay Port Terminal site are residences located approximately 1,300 feet north of the site. The closest noise sensitive receptors to the West Rail Option site are residences located approximately 1,500 feet southwest of the site. Numerous residences are also located along the truck transportation routes south of I-10 where increased noise levels would be experienced as a result of increased truck traffic.

3.5.3.2 Choctaw Point Terminal – Garrows Bend Intermodal Rail Option
The closest noise sensitive receptors to the Choctaw Point Terminal site are residences located approximately 1,300 feet west of the site. The closest noise sensitive receptors to the Garrows Bend Rail Option site are residences located approximately 2,800 feet southwest of the main rail yard and approximately 300 feet south of the rail spur between the rail yard and the CSX rail corridor. No noise sensitive receptors are located between the Choctaw Point Terminal site and the Garrows Bend Rail Option site. The closest noise sensitive receptors are located approximately 900 feet southwest of the truck transportation route to I-10. Increased noise levels would be experienced due to increased truck traffic.

3.5.3.3 Choctaw Point Terminal – West Intermodal Rail Option
The closest noise sensitive receptors to the Choctaw Point Terminal site are residences located approximately 1,300 feet west of the site. The closest noise sensitive receptors to the West Rail Option site are residences located approximately 1,500 feet southwest of the site. Numerous residences are also located along the truck transportation routes south of I-10 where increased noise levels would be experienced as a result of increased truck traffic.

3.5.3.4 Choctaw Point Terminal – North Intermodal Rail Option
The closest noise sensitive receptors to the Choctaw Point Terminal site are residences located approximately 1,300 feet west of the site. The closest noise sensitive receptors to the North Rail Option site are residences located approximately 2,000 feet north and 2,000 feet southwest of the site. A neighborhood located on the northwest corner of the Water and Beauregard Street intersection would be impacted by noise from trucks transporting containers between the Choctaw Point Terminal and North Intermodal Rail Yard. Establishments such as the Mobile Convention Center and others along Water Street would experience increased noise levels along the travel route between the
Choctaw Point Terminal and North Intermodal Rail Yard as a result of increased truck traffic.

3.5.4 WATER RESOURCES

3.5.4.1 Middle Bay Port Terminal – West Intermodal Rail Option
The Middle Bay Port Terminal would possibly require modification of the Mobile Harbor and Theodore Ship Channel Y Intersection to allow the safe transit of the design vessel in all directions. A breakwater would be required to protect vessels from wave action, and the existing turning basin at Middle Bay Port would have to be modified and expanded to accommodate larger vessels. Circulation modeling would be required to address the design and associated impacts of the breakwater. Dredged material from the turning basin and berthing area would likely be placed in a diked “upland” disposal area or on Gaillard Island. Dredged material from modification of the Y Intersection would most likely be placed in a Gulf Disposal Area or on Gaillard Island.

3.5.4.2 Choctaw Point Terminal – Garrows Bend Intermodal Rail Option
The Choctaw Point Terminal would require dredging the 15-acre berthing area adjacent to the Mobile Ship Channel to 40 feet. The dredged material would most likely be placed on Gaillard Island. The existing turning basin at Three Mile Creek would be used for turning the design ship serving the Choctaw Point Terminal.

3.5.4.3 Choctaw Point Terminal – West Intermodal Rail Option
Dredging requirements for the Choctaw Point Terminal are discussed in Section 3.5.4.2.

3.5.4.4 Choctaw Point Terminal – North Intermodal Rail Option
Dredging requirements for the Choctaw Point Terminal are discussed in Section 3.5.4.2. In addition, the North Intermodal Rail Option would require filling a large portion of an industrial canal approximately 6,000 feet long.

3.5.5 TRANSPORTATION
The alternatives being considered would require varying amounts of road improvements for the safe and efficient transport of containers by truck to the Intermodal Rail Yard facilities and/or the Interstate highway. In 2020, the estimated ratio of containers being transported by train versus trucks is 75 percent and 25 percent, respectively. Therefore, all four options would produce an average level increase of 870 trucks per day to the Interstate system. For these water to highway movements, improvements would be required from the container terminal to the I-10 connection as described below. A primary difference in transportation impacts is related to the distance between the respective terminal sites, Middle Bay Port and Choctaw Point, and the three intermodal options, West, Garrows Bend, and North.

3.5.5.1 Middle Bay Port Terminal – West Intermodal Rail Option
The Middle Bay Port Terminal would be located 7.2 miles from I-10 and 5.2 miles from the West Intermodal Rail Yard. Average daily truck trips between the Middle Bay Port Terminal and the West Intermodal Rail Yard would be 184 in
2005 and 2,409 in 2020. Peak day truck trips would be 237 and 3,090 for 2005 and 2020, respectively. Based on this data, the Middle Bay Port Terminal – West Intermodal Rail Option would require, at a minimum, improvements to laneage, intersection turning radii, intersections, and pavement thickness (strength) on Dauphin Island Parkway, Middle Road, Lake Road, and Hamilton Boulevard. The current four-way stop located at the intersection of Hamilton Boulevard and Dauphin Island Parkway would need to be upgraded to a signalized intersection. These improvements would be necessitated primarily by the large volumes of heavy truck traffic that would be traveling between the project site and the West Intermodal Yard and the truck traffic to I-10. Increased truck traffic on local streets increases congestion and increases the risk for traffic accidents.

3.5.5.2 Choctaw Point Terminal – Garrows Bend Intermodal Rail Option
The Choctaw Point Terminal would be located 1.4 miles from I-10 and 0.5 mile from the Garrows Bend Intermodal Rail Yard. Average daily truck trips between the Choctaw Point Terminal and the Garrows Bend Intermodal Rail Yard would be 184 in 2005 and 2,409 in 2020. Peak day truck trips would be 237 and 3,090 for 2005 and 2020, respectively. This truck traffic would traverse the 0.5 mile distance between the Choctaw Point Terminal and the Garrows Bend Intermodal Rail Yard via a dedicated road and overpass between the two sites. This traffic would be contained on ASPA property and would not affect local streets. The Choctaw Point Terminal would require, at a minimum, improvements to laneage, intersection turning radii, intersections, and pavement thickness (strength) on Broad Street, Baker Street, Yeend Street, Ezra Trice Boulevard, and Virginia Street. These improvements are necessitated primarily by the large volumes (870 average daily truck traffic in 2020) of heavy truck traffic that would be traveling between the project and I-10. Improvements to the I-10/Virginia Street interchange would also be made within existing ROW. These improvements would likely be accomplished by ALDOT with or without the container port. Among the alternatives considered, this alternative minimizes traffic increases on local streets. Therefore, increased traffic congestion and the risk for traffic accidents would be minimal when compared to the other alternatives.

3.5.5.3 Choctaw Point Terminal – West Intermodal Rail Option
The Choctaw Point Terminal would be located 1.4 miles from I-10 and 12.1 miles from the West Intermodal Rail Yard. Average daily truck trips between the Choctaw Point Terminal and the West Intermodal Rail Yard would be 184 in 2005 and 2,409 in 2020. Peak day truck trips would be 237 and 3,090 for 2005 and 2020, respectively. For this option, truck traffic would travel from the Choctaw Point Terminal to I-10, then along I-10 west to Rangeline Road then on Hamilton Boulevard to the West Intermodal Rail Yard. Based on this data, the Choctaw Point Terminal – West Intermodal Rail Option would require, at a minimum, improvements to laneage, intersection turning radii, intersections, and pavement thickness (strength) on Yeend Street, Baker Street, Broad Street, and Hamilton Boulevard. These improvements are necessitated primarily by the large volumes of heavy truck traffic that would be traveling between the two locations. Improvements to the I-10/Virginia Street interchange would also be made within existing ROW. These improvements would likely be accomplished by ALDOT.
with or without the container port. Increased truck traffic on local streets and I-10 increases congestion and increases the risk of traffic accidents.

3.5.5.4 Choctaw Point Terminal – North Intermodal Rail Option
The Choctaw Point Terminal would be located 1.4 miles from I-10 and 4.5 miles from the North Intermodal Rail Yard. For this option, truck traffic would travel from the Choctaw Point Terminal to I-10 east to Water Street; then proceed along Water Street to Beauregard Street to Dekle Street to the North Intermodal Rail Yard. Average daily truck trips between the Choctaw Point Terminal and the North Intermodal Rail Yard would be 184 in 2005 and 2,409 in 2020. Peak day truck trips would be 237 and 3,090 for 2005 and 2020, respectively. Based on this data, the Choctaw Point Terminal – North Intermodal Rail Option would require, at a minimum, improvements to laneage, intersection turning radii, intersections, and pavement thickness (strength) on Yeend Street, Baker Street, Broad Street, Water Street, Beauregard Street, and Dekle Street. These improvements are necessitated primarily by the large volumes of heavy truck traffic that would be traveling between the two locations. This option would add substantial truck traffic to Water Street, which is located in the Central Business District of Mobile, adding congestion to a busy and heavily-utilized area. The ability to add improvements to this congested area would be constrained based upon the location of businesses and historic structures along Water Street and in the Central Business District. Increased truck traffic on local streets and I-10 increases the risk for accidents. Improvements to the I-10/Virginia Street interchange would also be made within existing ROW. These improvements would likely be accomplished by ALDOT with or without the container port.

3.5.6 BIOLOGICAL/ECOLOGICAL RESOURCES
The potential implications and impacts to biological/ecological resources vary for each alternative. The following is a brief description of the potential effects on these resources.

3.5.6.1 Middle Bay Port Terminal – West Intermodal Rail Option
The Middle Bay Port Terminal site is located on property that was filled and graded for development of the Navy Homeport. The container terminal project could be configured on the site without impacting additional wetlands, but it would require removal of the extensive stormwater treatment ponds and associated wetland vegetation that were installed for the Navy Homeport project. It should be noted that the associated wetland vegetation is not considered to be jurisdictional wetlands. The West Intermodal Rail Yard would require filling an additional 89 acres of wetlands and covering approximately 23 acres of upland habitat. The marine terminal would require dredging of a 2,000-foot berthing area and expansion of the turning basin constructed for the Navy Homeport. It is estimated that approximately 30 acres of shallow water bottoms and 35 acres of previously dredged bottoms would be dredged to a depth of 40 feet. Disposal of the dredged material could consider several options, including Gulf disposal, Gaillard Island, and property owned by ASPA that is greater than 50 percent wetlands. Each option would involve different types and amounts of impact and would most likely require mitigation measures for impacts to important resources.
and habitats. Approximately nine acres of Bay bottoms would also be filled for the marine terminal. A breakwater would be required to protect the site from wind-generated waves and associated unacceptable disruptions to loading and unloading operations from ships. The Middle Bay Port Terminal, West Intermodal Rail Yard, and upland dredged material disposal area would not be expected to impact endangered or threatened species. Dredging in the Bay and the disposal options could potentially impact endangered and threatened species and would require further study.

3.5.6.2 Choctaw Point Terminal – Garrows Bend Intermodal Rail Option
The Choctaw Point Terminal site is located on property that was filled and graded for industrial development and on previously dredged water bottoms that would be filled. The proposed Choctaw Point Terminal would impact 90 acres of uplands, less than one acre of wetlands and 29 acres of previously dredged water bottoms. The Garrows Bend Intermodal Rail Yard would require filling 23.3 acres of wetlands and 18.4 acres of water bottoms in addition to filling and/or grading 118.3 acres of previously disturbed upland habitat. The USFWS and NMFS have determined that neither protected species nor critical habitat would be affected by the Choctaw Point Terminal – Garrows Bend Intermodal Rail Option (see Appendix B).

3.5.6.3 Choctaw Point Terminal – West Intermodal Rail Option
The Choctaw Point Terminal site is located on property that was filled and graded for industrial development and on previously dredged water bottoms that would be filled. The proposed Choctaw Point Terminal would impact 90 acres of uplands, less than one acre of wetlands and 29 acres of previously dredged water bottoms. The West Intermodal Rail Yard would require filling an additional 89 acres of wetlands and covering approximately 23 acres of upland habitat. The Choctaw Point Terminal would not result in effects to Federally-listed endangered or threatened species. The West Intermodal Rail Yard would also not be expected to impact endangered or threatened species.

3.5.6.4 Choctaw Point Terminal – North Intermodal Rail Option
The Choctaw Point Terminal site is located on property that was filled and graded for industrial development and on previously dredged water bottoms that would be filled. The proposed Choctaw Point Terminal would impact 90 acres of uplands, less than one acre of wetland, and 29 acres of previously dredged water bottoms. The North Intermodal Rail Yard would require filling an additional one acre of wetlands, 39 acres of water bottoms, and covering approximately 44 acres of upland habitat. The Choctaw Point Terminal would not result in effects to Federally-listed endangered or threatened species. The North Intermodal Rail Yard also would not be expected to impact endangered or threatened species.

3.5.7 SOCIOECONOMIC ENVIRONMENT
The following is a brief description of the more obvious socio-economic implications of the alternatives.
3.5.7.1 Middle Bay Port Terminal – West Intermodal Rail Option
Truck traffic going to I-10 and the West Intermodal Rail Yard from the Middle Bay Port Terminal would travel within 2,000 feet of the Hollingers Island Elementary School. Some of the children walk to school along the roadways that would be used by the trucks. Hollingers Island Church is located at the intersection of Dauphin Island Parkway and Hamilton Road. The trucks would turn at that intersection enroute to I-10 and the West Intermodal Rail Yard.

3.5.7.2 Choctaw Point Terminal – Garrows Bend Intermodal Rail Option
There are no schools or churches that would be affected by truck traffic going to and from I-10 or to the Garrows Bend Intermodal Rail Yard.

3.5.7.3 Choctaw Point Terminal – West Intermodal Rail Option
There are no schools or churches that would be affected by truck traffic going to I-10 or to the West Intermodal Rail Yard.

3.5.7.4 Choctaw Point Terminal – North Intermodal Rail Option
There are no schools or churches that would be affected by truck traffic going to and from I-10. Trucks traveling between the Choctaw Point Terminal and the North Intermodal Rail Yard would pass the Mobile Convention Center and within 2,000 feet of four churches and one school along Water Street near its intersection with Beauregard Street.

Use of the North Intermodal Rail Yard would necessitate the purchase of the Buchanan Lumber Company facility located on the Industrial Canal.

3.5.8 Reasonable Alternatives Based Upon Second Tier Screening
3.5.8.1 Introduction
As discussed above, the following four alternatives were evaluated based upon potential impacts and implications to selected resources:
- Middle Bay Port – West Intermodal Rail Option
- Choctaw Point Terminal – Garrows Bend Intermodal Rail Option
- Choctaw Point Terminal – West Intermodal Rail Option
- Choctaw Point Terminal – North Intermodal Rail Option

One purpose of exploring alternative locations to the Garrows Bend Intermodal Rail Yard was to avoid impacts to the area, presumably so it could be used for other purposes. It should be recognized that non-use of the Garrows Bend area would avoid wetland losses but does not alleviate potential or perceived impacts to cultural resources. Additionally, the area is owned by ASPA and was acquired for port development. If not utilized for the intermodal facility, it would be marketed and developed for value-added warehousing or other commercial facilities.

In addition to the factors evaluated, there are other considerations that enter into a determination of the reasonableness of an alternative for meeting the purpose and need of developing a modern and economically viable container port. The following sections describe other factors to be considered and present a determination on the reasonableness of the four alternatives evaluated in the second tier alternative screening.
3.5.8.2 Reasonableness of Middle Bay Port Site as an Alternative

A number of relevant factors should be considered in determining if a container port and intermodal rail facility at Middle Bay Port represents a reasonable alternative for more detailed analysis in this EIS. The following discussion highlights the existing situation and the measures that would have to be taken to address and resolve certain crucial limitations or constraints to a viable container port development at Middle Bay Port.

The Federally-authorized, constructed, and maintained Theodore Ship Channel provides a 40-foot-deep and 400-foot-wide channel that branches from the main Mobile Ship Channel in Mobile Bay and extends northwesterly about 5.3 miles to the shore of Mobile Bay at the Middle Bay Port site. The Middle Bay Port, a former U.S. Navy Homeport, is now owned by the ASPA.

Development of a container terminal would require, at a minimum, the following:

- Demolition and removal of the existing piers
- Construction of a 2,000-foot berthing area
- Expansion of the turning basin created for the Navy Homeport (dredging and disposal)
- Construction of a breakwater
- Possible alteration of the “Y” intersection of the Theodore Ship Channel

Special studies and investigations to define a breakwater location and design configuration, as well as providing information needed to assess the potential environmental impacts, would be required. Circulation modeling would likely be required.

In addition to the environmental and socioeconomic implications, a major negative constraint to the economic viability of the Middle Bay Port and West Intermodal Option is the lack of available competitive railroad options. The Middle Bay Port and West Intermodal Option is only served by one railroad. It is anticipated that a per-container surcharge or other fees would be prescribed to utilize its trackage. There would be no competition from other railroads to control these costs. In contrast, the Choctaw Point Terminal and Garrows Bend Intermodal Rail Yard is served by two of the five Class I railroads serving the Mobile area. Thus, the costs for rail usage would be market-driven for the Choctaw Point Terminal – Garrows Bend Intermodal Option.

The Master Plan stressed the importance of rail and highway transportation costs associated with moving containers to and from the port and the origin or destination in determining which port a company would choose for container operations (M&N 2002). Because overall transportation savings can be the discriminating factor in which port is utilized, increases in rail or highway transportation costs are especially relevant.

The market analysis conducted to determine the economic viability of a world-class container facility for the Port of Mobile was more complex and included
considerations other than rail and transportation costs for moving the containers. In determining the viability of optional sites within the Mobile area, however, a comparison of rail and transportation costs can be used to assess the economic viability of the options.

Preliminary cost analyses related to existing switching charges by the railroad to other railroads using tracks in the Theodore (Middle Bay Port) area range from $1,000 to $1,200 per car. Costs of this magnitude, or even approaching this magnitude, would make the Middle Bay Port and West Intermodal Rail Yard Option an uneconomical and unreasonable alternative. A number of additional factors should be considered in determining if the West Intermodal Rail Yard option in combination with the Middle Bay Port site represents a reasonable option for more detailed analysis. Other major factors affecting its reasonableness are listed below:

a. Distance between the Middle Bay Port and the West Intermodal Rail Yard is 5.2 miles compared to 0.5 mile at the Choctaw Point Terminal – Garrows Bend Intermodal Rail option.

b. Amount of uplands to be impacted – Approximately 150 acres at Middle Bay Port plus 23 acres at the West Intermodal Rail Yard.

c. Amount of wetlands to be filled – 89 acres at the West Intermodal Rail Yard.

d. Land use conflicts – Transportation route passes through commercial and residential land uses.

e. Air quality impacts – Over seven times the annual air emissions for transferring containers to I-10 and the West Intermodal Rail Yard compared to use of the Choctaw Point Terminal – Garrows Bend Intermodal Rail Yard option.

f. Truck traffic would increase on local roads. It is estimated that approximately 184 additional trucks would be added to the local transportation network on an average daily basis in 2005. This number would increase to 2,409 in 2020. Road improvements and upgrades would be required to accommodate the additional truck traffic. Increased truck traffic increases congestion and increases the risk of accidents.

g. Noise impacts – Noise from truck traffic would impact residences along the transportation network between Middle Bay Port and the West Intermodal Rail Yard and between Middle Bay Port and I-10.

h. Biological resources – Would require filling 89 acres of wetlands and alteration of 173 acres of uplands.

i. Socioeconomic resources – One church and one school would be affected.

j. The added drayage costs for moving containers between the rail and marine terminal would have a major impact on the economic viability of the overall project. Rail switching or other fees charged by railroads due to lack of competition would likely have serious detrimental economic effects.
3.5.8.3 Reasonableness of North Intermodal Rail Yard Option

A number of factors should be considered in determining if the North Intermodal Rail Yard option in combination with the Choctaw Point Terminal represents a reasonable option for more detailed analysis. The major factors affecting its reasonableness are listed below:

a. Distance between the Choctaw Point Terminal and the North Intermodal Rail Yard – 4.5 miles compared to 0.5 mile at the Garrows Bend Intermodal Rail Yard.
b. Amount of water bottoms to be filled - 39 acres.
c. Amount of wetlands to be filled – less than one acre.
d. Land use conflicts – Transportation route passes through the downtown Mobile commercial area and by the Convention Center/Cooper Park area that is classified as a public and semi-public use area.
e. Air quality impacts – Over five times the annual air emissions for transferring containers to I-10 and the North Intermodal Rail Yard compared to use of the Garrows Bend Intermodal Rail Yard.
f. Truck traffic would increase on I-10 and the city streets. It is estimated that approximately 184 additional trucks would be added to I-10, the Central Business District, and local streets on an average daily basis in 2005. This number would increase to 2,409 trucks in 2020. Road improvements and upgrades would be required to accommodate the additional truck traffic. Increased truck traffic increases congestion and increases the risk of accidents.
g. Noise impacts – Noise from truck traffic would impact a predominately minority neighborhood located at the corner of Water and Beauregard Streets and would increase noise levels in the downtown Mobile commercial area and the Convention Center/Cooper Park area.
h. Water resources – Use of approximately 5,000 feet of the Industrial Canal would be lost.
i. Biological resources – Would require filling one acre of wetlands, 39 acres of water bottoms, and 44 acres of highly disturbed uplands.
j. Socioeconomic resources – Truck traffic would pass within 2,000 feet of four churches, one school, and a predominately minority neighborhood. Use of the North Intermodal Rail Yard would require the purchase of Buchanan Lumber Company which is an active facility with 21 employees.
k. The added drayage costs for moving containers between the rail and marine terminal would have a major impact on the economic viability of the overall project.

Based on the above and other considerations, the development of the North Intermodal Rail Yard option, remotely located from the Choctaw Point Terminal site, is not a viable or reasonable alternative.
3.5.8.4 Reasonableness of the West Intermodal Rail Yard Option

A number of factors should be considered in determining if the West Intermodal Rail Yard option in combination with the Choctaw Point Terminal represents a reasonable option for more detailed analysis. The major factors affecting its reasonableness are listed below:

a. Distance between the Choctaw Point Terminal and the West Intermodal Rail Yard is 12.1 miles compared to 0.5 mile at the Garrows Bend Intermodal Rail Yard.
b. Amount of uplands to be impacted - 23 acres.
c. Amount of wetlands to be filled - 89 acres.
d. Land use conflicts – Transportation route passes through commercial and residential land uses.
e. Air quality impacts – Over 12 times the annual air emissions for transferring containers to I-10 and the West Intermodal Rail Yard compared to use of the Garrows Bend Intermodal Rail Yard.
f. Truck traffic would increase on local roads and I-10. It is estimated that approximately 184 additional trucks would be added to the local transportation network on an average daily basis in 2005. This number would increase to 2,409 in 2020. Road improvements and upgrades on local roads would be required to accommodate the additional truck traffic. Increased truck traffic increases congestion and increases the risk of accidents.
g. Noise impacts – Noise from truck traffic would impact residences along the transportation network south of I-10.
h. Water resources – No additional impacts.
i. Biological resources - Would require filling 89 acres of wetlands and 23 acres of uplands.
j. Socioeconomic resources – No churches or schools would be affected.
k. The added drayage costs for moving containers between the rail and marine terminal would have a major impact on the economic viability of the overall project. Rail switching or other fees charged by railroads due to lack of competition would likely have serious detrimental economic effects.
l. The siting of an intermodal rail yard in this location, if the Middle Bay Port facility is not a viable site for a container port, does not represent a practical situation.

Based on the above and other considerations the development of the West Intermodal Rail Yard option, remotely located from the Choctaw Point Terminal site, is not a reasonable alternative.

3.5.8.5 Reconsideration of Alternatives

Comments received on the DEIS suggested that careful reconsideration of the full range of alternatives should be carried out and included in the FEIS. As stated in Section 3.1, the identification and evaluation of alternative methods of accomplishing the purpose and need for the Proposed Action are two of the most important elements of the EIS process. Only alternatives that would reasonably meet the defined purpose and need for the Proposed Action require detailed analysis in this EIS. The Council on Environmental Quality has stated:
“Reasonable alternatives include those that are practical or feasible from the technical and economic standpoint and make common sense.....” The reconsideration of alternatives is discussed in the following paragraphs.

A tiered alternative screening and evaluation approach was utilized to identify potential reasonable alternative sites for development. All of the areas in close proximity to the Mobile Harbor and Theodore Ship Channels were initially considered because these areas could potentially meet the deep draft navigation requirement for the proposed project. These areas can generally be considered in three segments: (1) Mobile Harbor East Bank, (2) Mobile Harbor West Bank, and (3) the Theodore Ship Channel area. The east bank segment was eliminated from consideration during the initial screening because of the lack of rail access and lack of undeveloped land. Reconsideration of the east bank segment confirmed the earlier assessment (Figure 3-7). The remaining two segments were screened for potentially available property and candidate sites were evaluated. Five potential terminal sites were initially identified and assessed against site selection criteria to identify the potential alternatives to be analyzed in detail in this EIS. Alternatives evaluated during the first tier screening were displayed at a public workshop for the proposed permit action. Based upon concerns expressed and questions asked by workshop participants, a second tier evaluation of potential alternatives was undertaken. The two tier screening was presented in the DEIS.

The question that needs to be answered is: are there any other reasonable alternatives that should be considered? There are two parts to the question. First, the container terminal portion of the project is water dependent and must be located in close proximity to a deep draft navigation channel to meet its basic purpose. Second, the Intermodal Container Transfer Facility (ICTF) is not water dependent but should be located adjacent to or in very close proximity to the Container Terminal, if possible. Four alternative sites were considered along the Mobile Harbor West Bank during the Tier I evaluations. Reconsideration of this segment did not identify any additional alternative sites that should have been considered. The Mobile Harbor West Bank segment is essentially fully developed with the exception of the Choctaw Point – Garrows Bend area (see Figure 3-7).

The Middle Bay Port located on the Theodore Ship Channel was considered during both Tier I and II evaluations (see Figure 3-5). A major negative constraint to the economic viability of the Middle Bay Port or any other site located on the Theodore Ship Channel is the unavailability of competitive railroad options. The Theodore Ship Channel area is served by only one railroad. It is anticipated that a per-container surcharge or other fees would be prescribed to utilize its tracks. There would be no competition from other railroads to control these costs. Preliminary cost analyses related to existing switching charges by the railroad to other railroads using tracks in the Theodore area range from $1,000 to $1,200 per car. Costs of this magnitude, or even approaching this magnitude, cause the Middle Bay Port site and other sites on the Theodore Ship Channel not to be practical from an economic standpoint.
Figure 3-7
Aerial View Of Mobile Harbor

Note: This map is for presentation use only and not to be used for construction purposes.

1 inch equals 3,500 feet
Based on the Tier I and Tier II evaluations and the above reconsideration, the only reasonable alternative site for the Container Terminal portion of the proposed project is the Choctaw Point area. The second part of the question relates to the ICTF which is not considered to be water dependent but should be located adjacent to or in very close proximity to the Container Terminal, if possible. The area surrounding Choctaw Point is already essentially built out except for the ASPA property located on Garrows Bend (see Figure 3-7). Industrial development; the I-10/CSX Corridor and urban development; and the Brookley Industrial Complex occurs to the north, west, and south of Choctaw Point, respectively. Other than the Garrows Bend area, there are no undeveloped lands located near Choctaw Point that could be used for the ICTF. Placing the ICTF at more remote locations was considered during the Tier II evaluations but neither site evaluated was determined to represent a reasonable alternative as discussed in Sections 3.5.8.3 and 3.5.8.4. Other remote sites for the ICTF would have economic and environmental impacts that would make them unreasonable alternatives. The added drayage costs for moving containers between a remote ICTF and the marine terminal would have a major impact on the economic viability of the overall project.

Based on the Tier I and Tier II evaluations and the above reconsideration, the only reasonable alternative site for the ICTF portion of the proposed project is the Garrows Bend area.

The Section 404 (b)(1) Guidelines and NEPA sequencing to avoid, minimize, and compensate for adverse impacts to aquatic resources has been followed for the proposed project. Project modifications have been made to reduce the filling of wetlands and water bottoms by approximately 51 acres. For instance, the Southern Drain wetlands and water bottoms would be bridged rather than filled as originally planned. Design constraints associated with the alignment of the railroad tracks in the ICTF prevent further avoidance of impacts to the Garrows Bend wetlands. Section 3.3 summarizes the avoidance and minimization of impacts to aquatic resources that have been undertaken. A mitigation plan has been developed to compensate for the unavoidable impacts to aquatic resources (Appendix I).

3.5.8.6 Reasonableness of the Choctaw Point Terminal – Garrows Bend Intermodal Rail Option

The Choctaw Point Terminal – Garrows Bend Intermodal Rail Option represents a reasonable alternative which satisfies the purpose and need for the Proposed Action. Of the alternatives considered, this alternative minimizes the impacts on air quality. It also minimizes the increases of traffic on I-10 and local streets, thereby minimizing traffic congestion and the potential for additional accidents. The economic viability of this alternative is much greater when compared to the other alternatives considered. Therefore, this alternative is carried forward for a more detailed analysis of its potential consequences and implications, both beneficial and adverse.