THE PORT
Alabama State Port Authority
www.asdd.com
LARGER SHIPS Welcome.
Port of Mobile

Facilities and Expansion
PORT OF MOBILE

- Excellent Transportation Infrastructure
  - I-10 & I-65
  - 5 Class 1 Railroads/AGR-BNSF, CN, CSX, KCS, NS
  - Intermodal Container Rail Terminal (CN Served - Accessible to ALL Railroads)
  - Rail Ferry Service Every 4-days to Mexico (CG Railway)
  - Inland / Intracoastal Waterways
  - State of the Art Container Terminal and ICTF

- Full Service Seaport - 11th Largest in the U.S.*
  - 58+ Million Tons Annually Port Wide
  - 2nd Largest Steel Port in U.S.
  - 3 Largest Coal Terminal in the U.S.
  - Major Automotive Components & Automotive Grade Steel Port
  - Heavy Lift Capability – Supporting Alabama Heavy Industry
  - ASPA Terminals are a Certified Green Marine Port
  - Ocean Carrier Services for Major Trade Lanes

* USACE Waterborne Statistics Center - 2018
Lower Harbor – 45 ft. Draft
Serving Larger Post Panamax Ships
Containers / Steel / Coal

Upper Harbor – 40 ft. Draft
Serving Panamax Ships
Metals / Forest Products / Petroleum
Frozen Poultry / Grain / Coal

Intermodal Investments
Container Terminal / ICTF / Logistics

5 National Railroads
3 Short Line Railroads
Interstates / I-65 & I-10

Inland Waterways
PRO PRODUCTS HANDLED AT THE PORT OF MOBILE

- COAL
- IRON/STEEL
- AUTOMOTIVE
- PETROLEUM/CHEMICALS
- FOREST PRODUCTS
- FEEDS
- FOREST PRODUCTS
- FEEDS
- AVIATION
- STEEL
- PETROLEUM/CHEMICALS
- OFFSHORE OIL & GAS
- LOGISTICS/DISTRIBUTION
- FOREST PRODUCTS
- FEEDS
- AUTOMOTIVE
- METALS
- PEANUTS
- POULTRY
- FOREST PRODUCTS
- FEEDS
- AUTOMOTIVE
- METALS
- LOGISTICS/DISTRIBUTION
- FOREST PRODUCTS
- FEEDS
- AUTOMOTIVE
- METALS
- POULTRY
- FOREST PRODUCTS
- FEEDS
- LOGISTICS/DISTRIBUTION
- FOREST PRODUCTS
- FEEDS
- AUTOMOTIVE
- METALS
- POULTRY
- FOREST PRODUCTS
- FEEDS
- AUTOMOTIVE
- METALS
- POULTRY
- FOREST PRODUCTS
- FEEDS
- LOGISTICS/DISTRIBUTION
- FOREST PRODUCTS
- FEEDS
- AUTOMOTIVE
- METALS
- POULTRY
- FOREST PRODUCTS
- FEEDS
- LOGISTICS/DISTRIBUTION
- FOREST PRODUCTS
- FEEDS
PORT OF MOBILE ECONOMIC IMPACT
Cargo and Vessel Activity Impacts for Alabama Alone

- **Alabama State Port Authority Generates:**
  - 134,608 direct and indirect jobs
  - $486.9 million in direct/induced/indirect tax impact
  - Total Economic Value $22.4 Billion

- **Port of Mobile Private Terminals (Participating) Generate:**
  - 18,670 direct and indirect jobs
  - $81.1 million in direct/induced/indirect tax impact
  - Total Economic Value $2.7 Billion

- **These Facilities Alone: Generate a Cumulative 153,000+ Jobs - $25.1B in Economic Impact**

Martin Associates – 2017
Market Dynamics

• Ever Increasing Ship Sizes
• Panama Canal Expansion
• Changes in Alabama Industry
50 years of Container Ship Growth

- 1968: Encounter Bay 1,530 teu
- 1972: Hamburg Express 2,950 teu
- 1980: Neptune Garnet 4,100 teu
- 1984: American New York 4,600 teu
- 1996: Regina Maersk 6,400 teu
- 1997: Susan Maersk 8,000+ teu
- 2002: Charlotte Maersk 8,890 teu
- 2003: Anna Maersk 9,000+ teu
- 2005: Gjertrud Maersk 10,000+ teu
- 2006: Emma Maersk 11,000+ teu
- 2012: Marco Polo (CMA CGM) 16,000+ teu
- 2013: Maersk Mc-Kinney Møller 18,270 teu
- 2014/2015: CSCL Globe/MSC Oscar 19,000+ teu

Container-carrying capacity has increased by approximately 1,200% since 1968.
General bulk carrier sizes

- **Handysize**
  - 20,000 DWT
  - 40,000 DWT

- **Handymax**
  - 40,000 DWT
  - 50,000 DWT

- **Supramax**
  - 50,000 DWT
  - 60,000 DWT

- **Panamax**
  - 60,000 DWT
  - 80,000 DWT

- **Post-Panamax** (“Baby capers”) < 125,000 DWT

- **Capesize**
  - 125,000 - 220,000 DWT

- **VLOC**
  - > 220,000 DWT
  (Very Large Ore Carrier)
CONTAINER TERMINAL EXPANSION TO MEET GROWTH & VESSEL NEEDS

- Phase 3 | $50M 20+ ac. Yard Expansion and 2 Additional Outbound Gates Completed in 2019
- 400 ft. Dock Extension Completed Feb 2020
- Phase 3 Delivers 650,000 TEU Annual Throughput Capacity
- Future Phases: Site Development and Installation of RTG/RMG Delivers 1.5 Million TEU Capacity
APM Terminals Improvement
Project Elements

- Demolition - $ 2.2 Million
- Yard Expansion - $ 17.3 Million
- Dock Extension - $ 15.6 Million
- New Fenders - $ 1.75 Million
- Block 300 Repaving - $ 6.3 Million
- Dredging - $ 1.25 Million
- Engineering/Const. Mgt. - $ 3.2 Million

TOTAL - $ 47.6 Million
APMT Project Site - Before
APMT Yard Expansion Project - Before
APMT Phase 3 Yard Expansion

• $17.3 Million Construction Cost
• Approximately 20 Acres
• Design Loads – “Top Pick” Container Handler
• 34-Inch Pavement Section (18-Inch Roller Compacted Concrete on 16-Inch Soil Cement Base)
Soil Cement
Soil Cement
Placement of Roller Compacted Concrete
Placement of Roller Compacted Concrete
APMT Phase 3 Yard Expansion - 50%
APMT Phase 3 Yard Expansion - After
Block 300 Repaving
APMT Project Dock Extension - Before
Dock Extension

• $15.6 Million Construction Cost
• Approximately 400 Feet Long by 230 Feet Wide
• Dredge Depth -45 Feet
• Design Loads:
  - Maersk E Class 12,000 TEU Vessel
  - “Top Pick” Container Handler
  - 1,200 PSF Slab Load
• 22-Inch Slab Section
Dock Extension Reinforcing
Dock Extension Reinforcing
Placement of Concrete for Dock Extension
Dock Extension – 50% Complete
Dock Extension Complete
Project Challenges

• Little or No Drawings of Wharf to be Demolished
• Piling Obstructions
• Difficulty Removing Old Piles from Former MRT Dock
• Demolition – “Hell in The Cell”
• Vessel Traffic Interfering with Fender Replacement and Dredging
• Working in an Operating Facility
The Cell from Hell
AUTOMOBILE RO/RO TERMINAL

- Ship, Rail, Highway Served
- 150,000 Units in Annual Throughput
- Terminal Operator – AutoMOBILE Terminal International
- Terminal Under Construction / Completed Early 2021
What’s a RO-RO?
Automobile Terminal Site - Before
Auto Terminal Site – December 2019
Automobile Terminal Site

- Location of the Former Bulk Material Handling Plant (BMHP) and the Former Alcoa Alumina Plant
- BMHP was the First Terminal Built by the State Docks
- BMHP First Phase was Constructed in 1929
- Alcoa First Phase was Constructed in 1938
- BMHP Handled Bauxite, Iron Ore, Coal Coke, Rutile, Etc.
- Alcoa Ceased Operations in 1985
Automobile Terminal Project

• Partnership Between Alabama State Port Authority (ASPA) and AutoMOBILE International Terminal (AIT)

• ASPA and AIT Entered Into Concession Agreement

• Under the Agreement, ASPA is Responsible for Wharf Upgrades, Demolition, Site Preparation and Fill, Paving, Rail and Lighting

• AIT is Responsible for Fencing, Striping, Entry Gate, Site Security Equipment and Buildings
Facility Features

• 7000+ Parking Spaces – Capacity Varies with Length of Vehicle
• Two Acres of Heavy Equipment Staging (Reinforced Concrete) with Design Capacity for a CAT D11 Dozer or 775G Off-Road Dump Truck
• Ten Truck Load/Unload Lanes (Reinforced Concrete)
• Ten Rail Leads Accommodating Six Railcars Each with Load/Unload Ramps at Both Ends of Each Lead
Facility Features

- 1,546 Foot Wharf on Relatively Calm Water of Three Mile Creek for Loading, Unloading and Staging of Vehicles
- 40 Foot Dredge Depth
- Mooring Systems to Accommodate Ships of 577 to 869 Feet
- Fendering Systems to Accommodate Ships of 13,500 to 45,800 Tons
Facility Features

- 39,000 Square Foot Vehicle Processing Building Including Car Wash, Body Shop, Vehicle Options Installation Stations, Parts Storage, Offices
- Fueling Station
- Trucker Waiting Station
## Project Cost

<table>
<thead>
<tr>
<th>Description</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site/Civil</td>
<td>$35,114,181</td>
</tr>
<tr>
<td>Demolition and Relocation</td>
<td>$5,000,000</td>
</tr>
<tr>
<td>Wharf Rehabilitation</td>
<td>$6,125,050</td>
</tr>
<tr>
<td>Buildings</td>
<td>$11,294,500</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>$57,533,731</strong></td>
</tr>
</tbody>
</table>
# Project Execution Schedule

## Project Execution Schedule Summary
(Updated December 16, 2019)

<table>
<thead>
<tr>
<th>Work Package</th>
<th>Duration</th>
<th>Q4 2019</th>
<th>Q1 2020</th>
<th>Q2 2020</th>
<th>Q3 2020</th>
<th>Q4 2020</th>
<th>Q1 2021</th>
</tr>
</thead>
<tbody>
<tr>
<td>Civil / Site Improvements</td>
<td>16.5 Months</td>
<td>Oct 19</td>
<td>Nov 19</td>
<td>Dec 19</td>
<td>Jan 20</td>
<td>Feb 20</td>
<td>Mar 20</td>
</tr>
<tr>
<td>Wharf Rehabilitation</td>
<td>10.0 Months</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ancillary Buildings¹</td>
<td>14.0 Months</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wharf Dredging</td>
<td>2.0 Months</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Notes:

¹ Estimated award and start date for the Ancillary Buildings Package is February 2021.
Project Challenges

• Funding/Grant Approval Timeline
• Section 106 Consultation
• Hazardous Material Removal
• Rail Line Through the Middle of the Site
• Little or No Drawings of Underground Obstructions
• Site History
Project Challenges

- Planning for Differential Settlement
- Unknown Subsurface Conditions
- High Water Table
- Rain, Rain, Rain and More Rain
- Stay Tuned We’re Just Getting Started
Sustainability

- Recycling of Concrete for Pavement Base
- Raising Elevation of Site One to Three Feet Above Base Flood Elevation of +12.0 Feet NAVD88
- Use of Dredged Sand for Site Fill Material
- LED Lighting
- High Recycled Content in Asphalt Paving
- Reuse of Existing “Brownfield” Site
- Reuse of Replaced Fenders from APM Terminal
HARBOR MODERNIZATION

- **Current Dimensions – Year Round**
  - 45 ft. (13.7 m) Deep
  - 400 ft. (121.9 m) Wide

- **US Army Corps of Engineers Record of Decision Sept. 6, 2019** – Construction Starts in 2020 – 3 to 4 Years to Complete

- Project Deepens Bar, Bay and River Channels and adds a Passing Lane
  - Depth of 50 ft. in Bay & River Channels
  - Depth of 52 ft. at the Bar Channel
  - Widen Bay Channel 3 mi. Length and 100 ft. Width
  - Bend Easing (Upper Bar Channel)
  - Turning Basin Improvement

- **EST. PROJECT COSTS: $396 MILLION**

- Improves Vessel Safety and Efficiencies, Provides Economies of Scale to Shippers
MOBILE HARBOR
APPROVED PLAN

- Channel Deepening: 50 feet Bay/ 52 feet Bar
- Channel Widening: 3 mi. long, 100 ft wide
- Turning Basin Modification
- Bar Channel Bend Easing

**CONSTRUCTION PHASING**

<table>
<thead>
<tr>
<th>Phase</th>
<th>Description</th>
<th>Quantity</th>
<th>Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase 1: Bar Channel Deepening</td>
<td>2.6MCY</td>
<td>Hopper</td>
<td></td>
</tr>
<tr>
<td>Phase 2: Bar Channel &amp; Bend Easings to 52’ plus Widener &amp; lower bay channel to 50’</td>
<td>10.9MCY</td>
<td>Hopper</td>
<td></td>
</tr>
<tr>
<td>Phase 3: Deepening Remainder of Lower Bay Channel plus portion of Upper Bay</td>
<td>8.2MCY</td>
<td>Hopper</td>
<td></td>
</tr>
<tr>
<td>Phase 4: Deepening Upper Bay Channel</td>
<td>4.3MCY</td>
<td>Pipeline</td>
<td></td>
</tr>
<tr>
<td>Phase 5: Turning Basin</td>
<td>1.5MCY</td>
<td>Bucket and Scow</td>
<td></td>
</tr>
</tbody>
</table>

**ESTIMATED CONSTRUCTION SCHEDULE**

<table>
<thead>
<tr>
<th>Year</th>
<th>Phase</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY20 (30 Sep 2020)</td>
<td>Phase 1</td>
<td>6-9 month effort</td>
</tr>
<tr>
<td>FY21 (3rd quarter)</td>
<td>Phase 2</td>
<td>12-18 month effort</td>
</tr>
<tr>
<td>FY22 (3rd quarter)</td>
<td>Phase 3</td>
<td>12-18 month effort</td>
</tr>
<tr>
<td>FY22-FY23</td>
<td>Phase 4</td>
<td>10-12 month effort</td>
</tr>
<tr>
<td>FY22-FY23</td>
<td>Phase 5</td>
<td>10-12 month effort</td>
</tr>
</tbody>
</table>
Mobile Harbor
Channel Analysis and Design

Dredging Material Types

Phase 1
- Predominantly sandy/coarse grained material (SP, SP-SM, SM, SC-SM, SC) with fines contents ranging from 1 to 44 percent.
- Limited amounts of very soft to medium stiff silts and clays (CL, MH, CH) with fines contents ranging from 60 to 99 percent.

Phase 2
- Southern portion of Phase 2 similar to Phase 1.
- Channel borings in the remaining extents indicate the presence of very soft to soft fine grained silts and clays.
- The widener soils will be characterized based on results of future geotechnical investigations.

Phase 3
- Channel borings indicate the presence of very soft to soft fat clays (CH) and silts (MH) with some shell to about station 665+00.
- There are some clayey sands in the northern part of this phase.

Phase 4
- North of about station 665+00, the soil consists primarily of poorly graded fine to coarse sands with varying amounts of silt, clay, and gravel (SP, SW, SM, SC) with occasional clay lenses.

Phase 5
- Historical borings show predominantly sandy/coarse grained materials (SP, SW, SP-SM, SM).
- The Turning Basin will be investigated further in future geotechnical investigations scheduled to be performed around May 2020.
MOBILE HARBOR
DREDGED MATERIAL PLACEMENT

New Work Placement Sites

Beneficial Use Opportunities
Thank You!

Bob Harris, PE, Vice President, Technical Services
251-441-7082 | bharris@asdd.com
Peter Olivero, PE, PLS, Facilities Engineer
251-441-7533 | polivero@asdd.com
www.asdd.com