

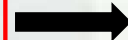


## Public Meeting - Workflow

**Step 1** – Sign in at information table



**Step 2** – Visit information and resource tables in any order you choose



**Step 3** – Ask questions and obtain clarification from the experts at each information and/or resource table



### **Step 4 – Submit Comments**

- Using comment forms provided at display tables
- Oral comments to court reporter, or
- Electronic via e-mail to [MobileHarborGRR@usace.army.mil](mailto:MobileHarborGRR@usace.army.mil)





## WELCOME Public Information Meeting

### Mobile Harbor General Reevaluation Study

The US Army Corps of Engineers and the Alabama State Port Authority are conducting a study to determine the feasibility of enlarging the size of the channel leading to and from port facilities located in Mobile Bay. The study includes: Economics, Engineering, and Environmental conditions.

### Your Input Is Wanted

#### *Why?*

Your input will assure that all concerns have been considered during the study.

#### *How?*

Using comment forms provided at display tables,

Oral comments to Court Reporter,

Email: [MobileHarborGRR@usace.army.mil](mailto:MobileHarborGRR@usace.army.mil)

or

Postal Mail: U.S. Army Corps of Engineers

ATTN: Coastal Environment Team

P.O. Box 2288

Mobile, AL 36628

#### *When?*

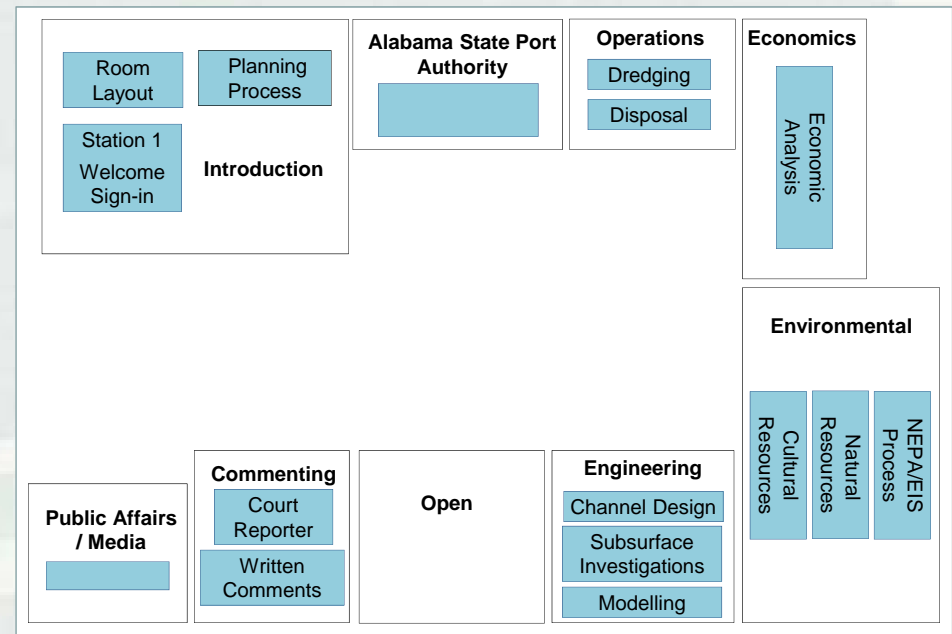
Comments are due by February 11, 2016.

### Meeting Format

Information about our study process, the port, and the anticipated analyses for economics, environmental, and engineering are presented this evening at various stations as shown below. It is a self-guided layout.

You are welcome to visit every station, at no particular order. If you choose, you may visit the comment station only.

### ROOM LAYOUT



**THANK YOU** for attending this evening.



**BUILDING STRONG**®



## PLANNING PROCESS

### Background

In 1986, Congress authorized various modifications to Mobile Harbor including deepening and widening the majority of the channel to 55 feet deep and 550 feet wide. Since that time, the majority of the channel was enlarged to 45 feet deep and 400 feet wide.

In 2014, the Alabama State Port Authority requested that the Corps of Engineers consider deepening and widening the existing Mobile Harbor Channel to its authorized dimensions.

In response to that request, a General Reevaluation Report (GRR) will be prepared that details the feasibility of widening and deepening the channel up to and including the authorized dimensions.



### General Reevaluation Report (GRR)

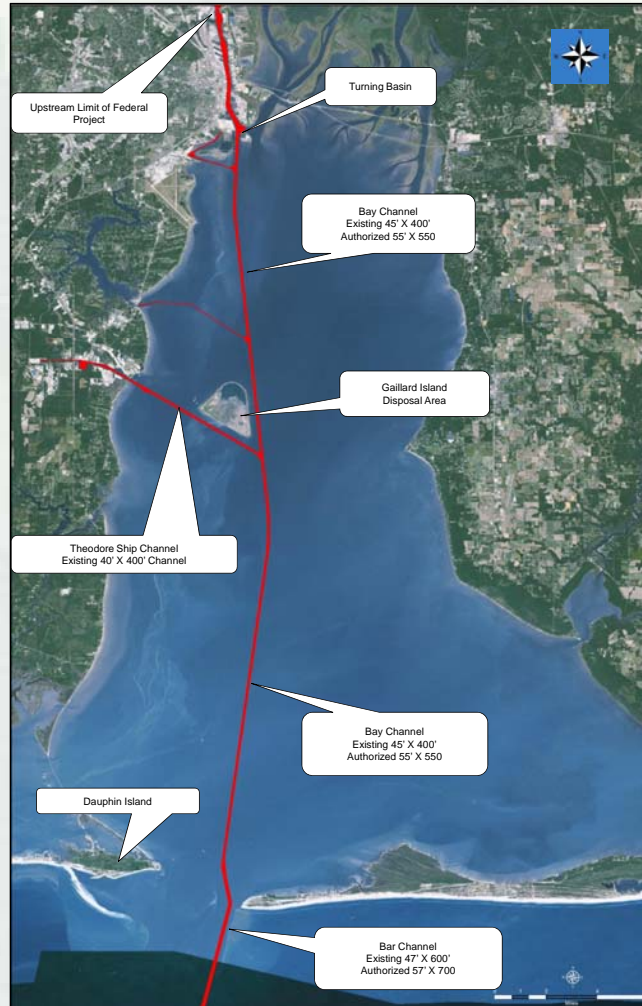
The elements and process of developing a GRR are defined in legislation and in Corps guidance.

The purpose of a GRR is to investigate and recommend solution(s) to water resources problems. These studies are cost shared with a non-Federal sponsor.

The study will incorporate engineering, economic, real estate and environmental analyses.

It is anticipated that the GRR will be a 4 year, \$7.8M effort.

Along with the GRR, an integrated **Supplemental Environmental Impact Statement (SEIS)** will be developed. The SEIS will define the current environmental conditions to compare with the environmental effects of any proposed action and its alternatives. The SEIS will identify potential consequences and the mitigation needed to minimize adverse impacts.



### The Federal Objective

The Federal objective of water and related land resources project planning is to contribute to national economic development (NED) consistent with protecting the Nation's environment, pursuant to national environmental statutes, applicable executive orders, and other Federal planning requirements.

Water and related land resources project plans shall be formulated to alleviate problems and take advantage of opportunities in ways that contribute to this objective.

Projects shall contribute to NED. While project benefits have to exceed project costs the project to be recommended will have the greatest net NED benefits of the alternatives considered.



### Review Process

The GRR along with the integrated SEIS will undergo the following reviews during its development:

- District Quality Control (DQC)
- Agency Technical Review (ATR)
- Independent External Peer Review (IEPR)
- Public Review
- State and Agency Review







## ALABAMA STATE PORT AUTHORITY (ASPA) MOBILE HARBOR DEEPENING AND WIDENING CONSIDERATIONS

### Full Service Seaport -- 12th Largest in the U.S.

- ✓ 55+ Million Tons Handled Port Wide.  
ASPA Terminals Represents 25-29 Million Tons Annually

### ASPA Growth Steadily Climbs – Records Set in 2014

- ✓ 29.1 Million Tons and \$162.3 Million in Revenue

### Port of Mobile has a Strong Export Market

### Sustained Growth in Steel, Coal, Petroleum, Poultry and Containerized Cargoes

### The Port of Mobile Contributes Significantly to the Nation's Economy

- ✓ Alabama State Port Authority Terminals [alone](#) generate 127,591 Jobs and \$18.7 Billion in total economic value
- ✓ Private Petroleum / Petroleum Products Terminals alone generate 5,220 Jobs and \$687 Million in economic value.

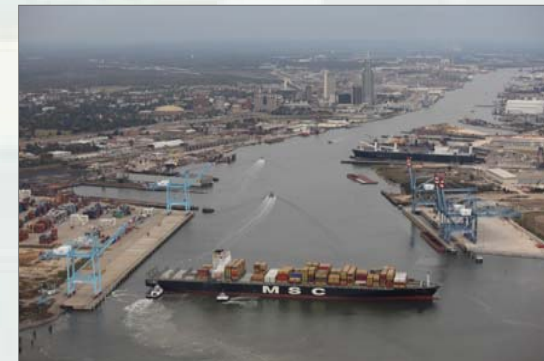
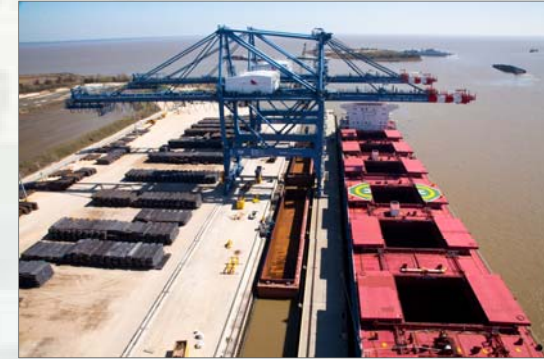


# MOBILE HARBOR GENERAL REEVALUTATION REPORT



## ALABAMA STATE PORT AUTHORITY MOBILE HARBOR DEEPENING AND WIDENING CONSIDERATIONS MEGATRENDS IN GLOBAL TRADE

- ✓ Population Growth in the U.S. Southeast Urban Areas Will Double by 2060 (USGS - July 2014)
- ✓ Year-to-Year E-Commerce Sales Growth Outlook is 14% and M-Commerce Sales Growth Outlook is 23% Generating Demand for Logistics and Supply Chain Management Investments in Port-Centric Areas (Goldman Sachs - 2014)
- ✓ Long-range Global Demand for Steel (World Bank - July 2014) and Met Coal (EIA - May 2014) will Moderately Increase – **Port of Mobile is the 2<sup>nd</sup> Largest Met Coal Port and 2<sup>nd</sup> Largest Steel Port in the Nation**
- ✓ U.S. Manufacturing Growth is Up (The Manufacturers Alliance for Productivity and Innovation Sept. 2014): Driving Forces: Aviation/Aerospace, Automotive, Medical Equipment, Electronics - Most Ship via the Container – **Port of Mobile Serves These Markets**
- ✓ Long-range Demand for U.S. Agricultural Products (USDA - Feb 2014) – **Port of Mobile Serves U.S. Poultry and Forest Products Exports**
- ✓ Ocean Carriers' Long-range Focus is on Larger Ships, Terminal Technology and Berth Productivity - This Produces Economies of Scale and Increased Efficiency) (Journal of Commerce/PIERS: Port Productivity, July, 2014)





# MOBILE HARBOR GENERAL REEVALUTATION REPORT

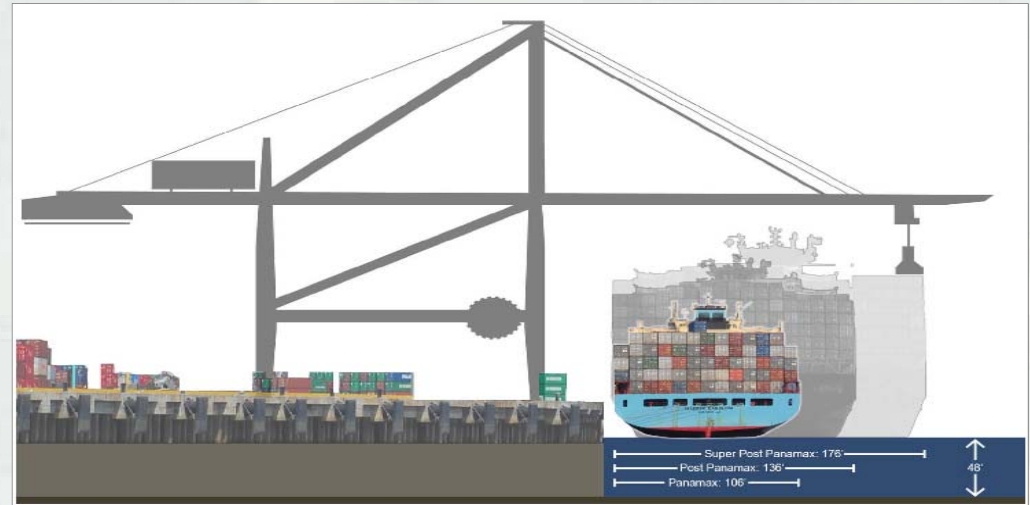


## ALABAMA STATE PORT AUTHORITY MOBILE HARBOR DEEPENING AND WIDENING DELIVERS



### Vessel Size & Utilization

- ✓ A Deeper and Wider Channel at Mobile Improves Shipper Efficiency and Lowers Costs
- ✓ At Current Depths Carriers and Shippers Cannot Fully Utilize Available Vessel Capacity
- ✓ Two thirds of the Vessels Calling Mobile are Restricted by Depth
- ✓ Two thirds of the Vessels Calling Mobile are Restricted to One-Way or Daylight Transit
- ✓ CMA CGM Asian Service Will Begin Using 8000 TEU Ships at Mobile Upon Panama Canal Opening – Mobile's 45 ft. Draft Limits Full Utilization of Vessel Capacity and Reduces the Port's Slot Allocation
- ✓ For Its Three Largest Carriers, Mobile is the Last Port of Call Prior to Miami (soon to be at 50 ft.) and Freeport (currently at 52 ft.). Mobile's 45 ft. Draft Contributes to Inefficient Vessel Utilization



### Navigation & Safety

- ✓ Cape / Post-Panamax / Wide-body Tanker Traffic On the Rise
- ✓ Daylight / One-Way Channel Restrictions Delay Panamax Ships Calling Today
- ✓ Channel Delays Increase Vessel and Shipper Cost
- ✓ Higher Costs Impact U.S. Competitiveness and Consumer Prices

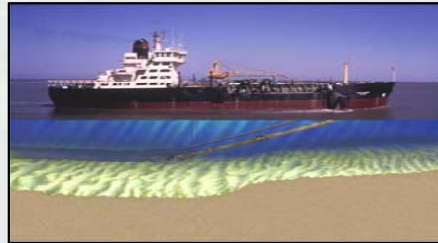


**BUILDING STRONG®**



## Current Dredging and Disposal

Hopper Dredge



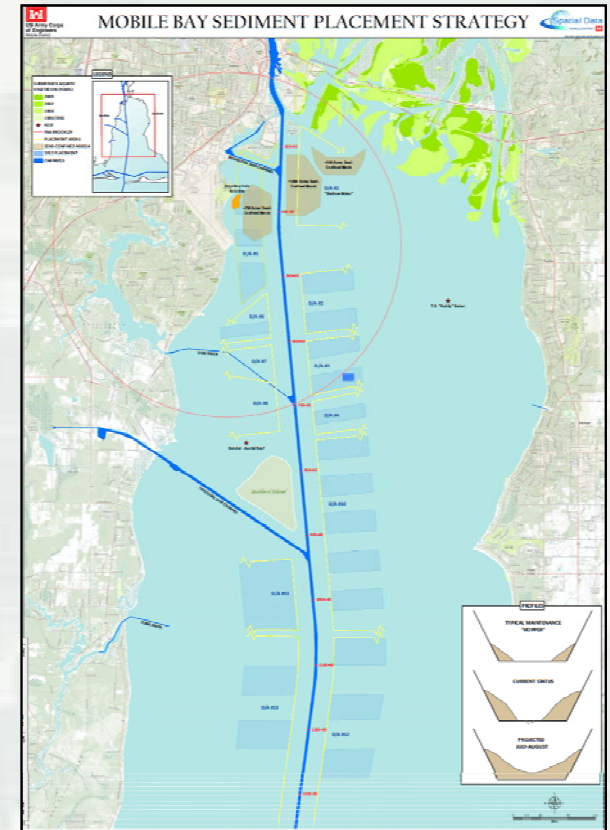
Cutterhead/Pipeline Dredge



Mechanical Dredge



Mobile Bay Channel Maintenance Material  
Currently placed in Sand Island Beneficial Use Site  
(sandy material)



Mobile Bay Channel Maintenance Material  
Currently placed in open water sites and ocean site  
(silt/mud material)

### New Work Disposal Options

- Beneficial Use
- Ocean Disposal
- Open Water adjacent to channel
- Upland Disposal





## Corps Economic Analysis for Mobile Harbor



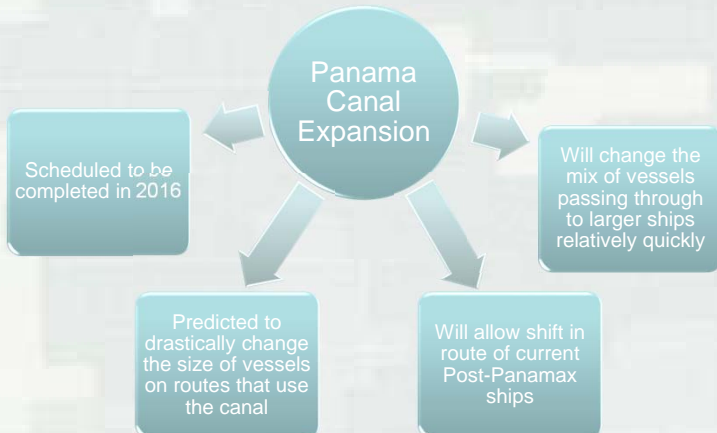
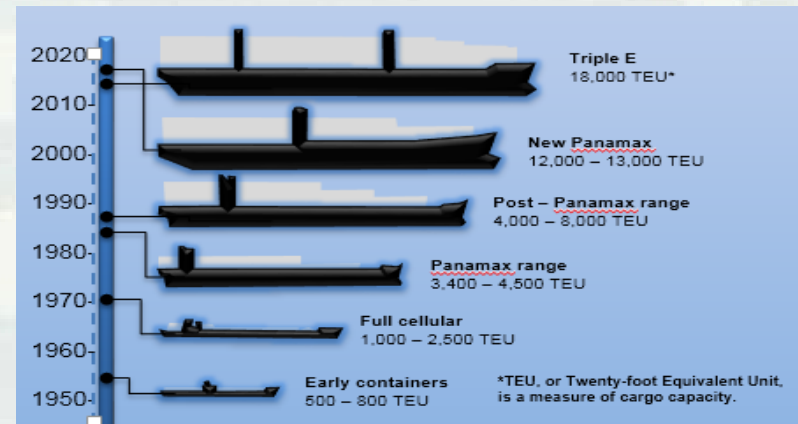
### Concepts behind Mobile Harbor Economic Analysis:

- Larger Post-Panamax vessels are deployed on routes with ports with deeper channels and large volumes of trade
- Deeper channels allow for greater vessel loading resulting in trade route efficiency
- Vessel sailing drafts vary from port to port on trade routes and services
- Total voyage distance and amount of cargo are main determinants of vessel operating costs
- The project benefits would be a reduction in transportation costs for goods (imports/exports) shipped through the Mobile Harbor with deepening/widening



### Evolution of container ships

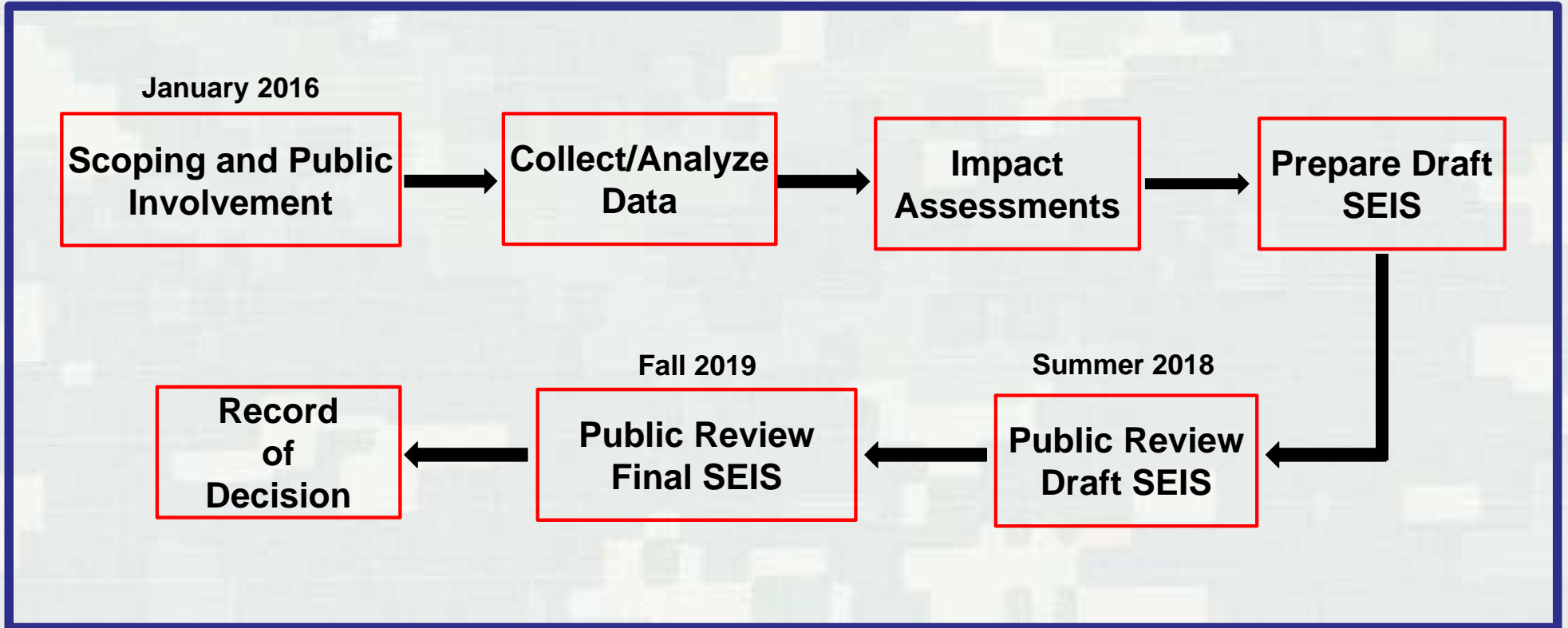
Post-Panamax ships make up 16 percent of the world's container fleet today, but carry 45 percent of the cargo. New Panamax ships will be the largest that can pass through the new locks in 2016.







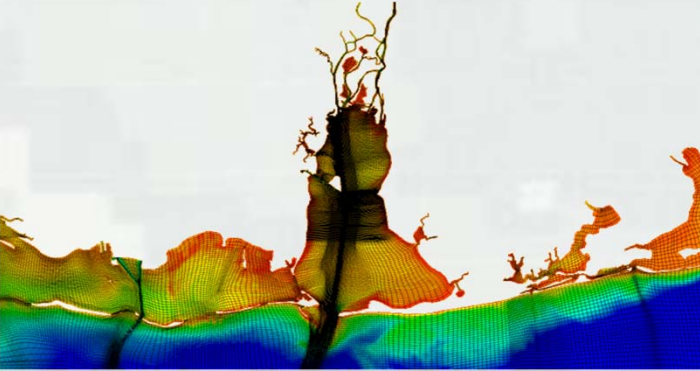
# The NEPA Process





## ENVIRONMENTAL CONSIDERATIONS

### Water Quality



- Evaluate water quality associated with widening and/or deepening channel
  - Saltwater intrusion
  - Dissolved oxygen
  - Nutrients
  - Temperature
- Possible long-term transformations to Bay
  - Salinity regime
  - Marsh and wetlands conversion
  - Fisheries
  - Benthic communities

### Natural Resources Evaluations



- Biological surveys to determine baseline resources
- Impact assessments
- Mitigation requirements



### Essential Fish Habitat

- Waters and substrates necessary to fish for spawning, breeding, feeding, or growth to maturity
- Includes aquatic areas and associated physical, chemical, and biological properties
- More effective habitat management and protection of marine fisheries
- Fisheries of concern
  - Red drum
  - Shrimp
  - Stone crab
  - Reef fish
  - Coastal pelagic
  - Migratory species



### Submerged Aquatic Vegetation (SAV)



- Detailed information on distribution of SAV
- Protection of seagrasses from turbidity sources

### Federally Protected Species Considered

- Gulf sturgeon
- Piping Plover
- Red knot
- Marine mammals
- Sea turtles
- Alabama red bellied turtle





## ENVIRONMENTAL CONSIDERATIONS

### Other Considerations

- Air quality
- Noise
- Sediment characterization
- Contaminants
- Socio-Economic Impacts
- Potential Impacts to Dauphin Island



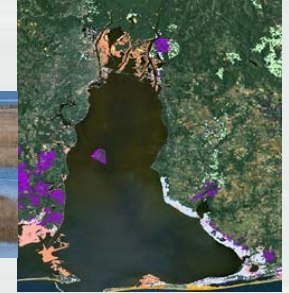
### Coastal Processes

- Ship wake on Shoreline of Mobile Bay
  - Bigger ships
  - Increase in traffic
- Hydrodynamics
  - Waves and currents
- Sedimentation
- Change in Sediment transport



### Marsh and Wetland Resources

- Bay Intertidal marshes
- Riverine wetlands
- Delta wetlands

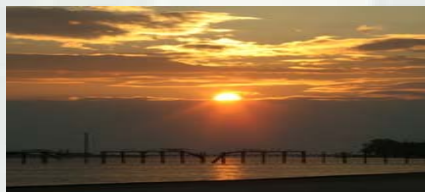
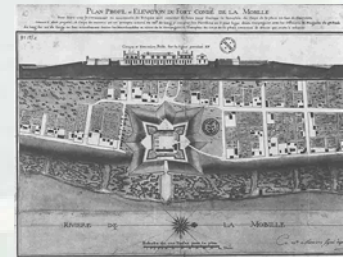


### Cultural Resources

- Section 106 of the National Historic Preservation Act (NHPA) 1966
  - Requires lead Federal agency take into account the effects to any district, site, building, structure, or object included in or eligible for inclusion in the National Register of Historic Places.
- Rich maritime history dating back to colonial times, including the Battle of Mobile Bay during the Civil War.
- Areas proposed for dredging or disposal evaluated for cultural resources prior to construction or disposal.
- Located resources will be evaluated for direct and indirect effects.

### Disposal Options

- Ocean disposal
- Existing authorized sites
- Potential Beneficial use opportunities
  - Island creation
  - Marsh restoration
  - Shoreline protection/restoration
  - Oyster restoration
  - SAV restoration
  - Bay bottom restoration







## What is a Supplemental Environmental Impact Statement (SEIS)?

- The SEIS prepared during this study will review and update the findings of the existing Environmental Impact Statement (EIS) “Mobile Harbor Channel Improvements, Mobile County, Alabama” prepared for the current Mobile Harbor authorization in October 1980. The SEIS will consider additional environmental impacts, based on the introduction of improvement options and major changes in the natural environment or communities.
- An SEIS is a document prepared in accordance with the National Environmental Policy Act (NEPA) that presents the results of the analysis of the environmental effects of a proposed action and its alternatives.
- An SEIS includes opportunities for public involvement in agency planning process.
  - Public Scoping Meeting (January 2016)
  - Public Review of Draft SEIS (Summer 2018)
  - Public Review of Final SEIS (Fall 2019)
- An SEIS includes an analysis of effects of the proposed action on: natural resources (water, air and wildlife), cultural resources, land use, recreation, aesthetics, and socioeconomic impacts
- An SEIS includes a description of the baseline conditions of the affected environment against which effects of the proposed action are evaluated.
- An SEIS identifies potential consequences and appropriate mitigation to minimize adverse impacts

## Anticipated Federal and State Cooperating Agencies

- Alabama Department of Environmental Management (ADEM)
- Alabama Department of Conservation and Natural Resources (ADCNR)
- Alabama State Historic Preservation Officer (SHPO)
- Alabama Department of Transportation (ALDOT)
- U.S. Department of Interior (DOI)
- U.S. Fish and Wildlife Service (FWS)
- NOAA National Marine Fisheries Service (NMFS)
- Environmental Protection Agency (EPA)
- U.S. Geological Survey (USGS)
- Federal Emergency Management Agency (FEMA)
- Mobile Bay National Estuary Program (MBNEP)





## ENGINEERING CONSIDERATIONS

### Channel Analysis and Design

**Purpose:**

Determine ship motions and controllability to aid design of safe and efficient channel alignments, widths, and depths.



**Tools:**

Ship Simulator and Channel Design and Evaluation Tool (CADET)

### Geotechnical Investigations

**Purpose:**

Determine the characteristics of subsurface material to identify disposal options, aid in channel design, and reduce uncertainty in dredging costs.



**Tools:**

Standard Penetration Testing

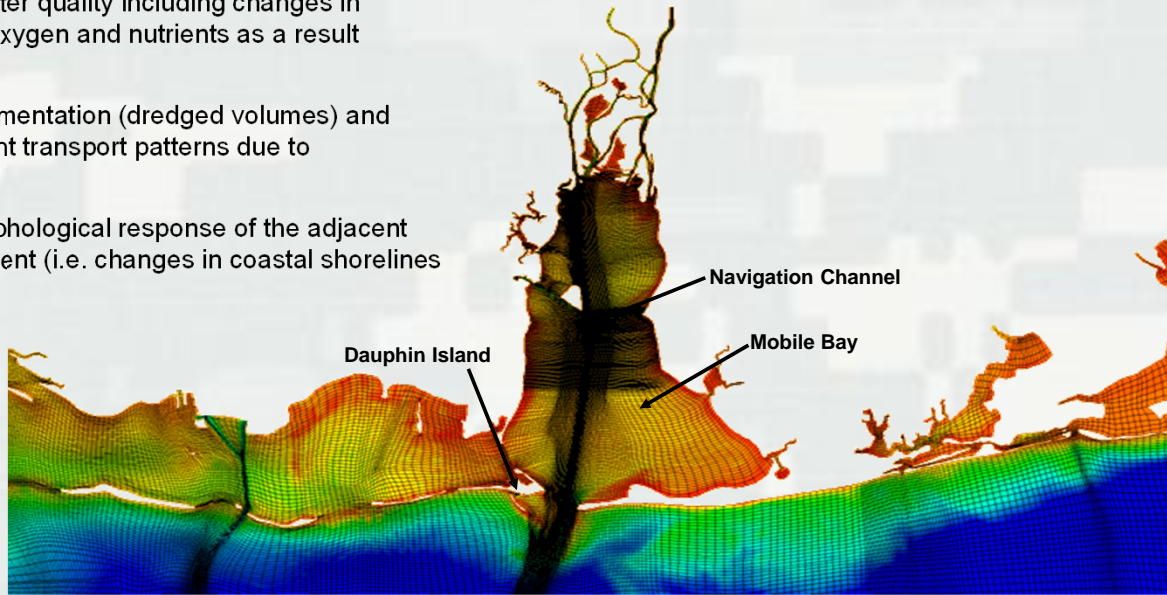
### Coastal Numerical Modeling

**Purpose:**

Evaluate potential changes in water quality including changes in flushing, salinity, dissolved oxygen and nutrients as a result of channel improvements.

Quantify relative changes in sedimentation (dredged volumes) and potential changes in sediment transport patterns due to navigation improvements.

Quantify relative changes in morphological response of the adjacent nearshore coastal environment (i.e. changes in coastal shorelines and nearshore areas).



Model Extents

**Tools:**

Geophysical Scale Transport Modeling System:

*ADCIRC* – Regional water level and circulation

*STWAVE* – Wave

*CH3D* - Nearshore water level and circulation

*CEQUAL-ICM* – Water quality

*SEDZLJ* – Mixed sediment transport

Delft3D Modeling System:

*SWAN* – Waves

Delft3D Flow -Nearshore water level and circulation

Delft3D Mor – Sediment transport and morphological change

