US Army Corps of Engineers®

MOBILE HARBOR GENERAL REEVALUATION REPORT

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Welcome

Thank you for joining us for tonight's Open House for the Mobile Harbor General Reevaluation Report and Supplemental Environmental Impact Statement.

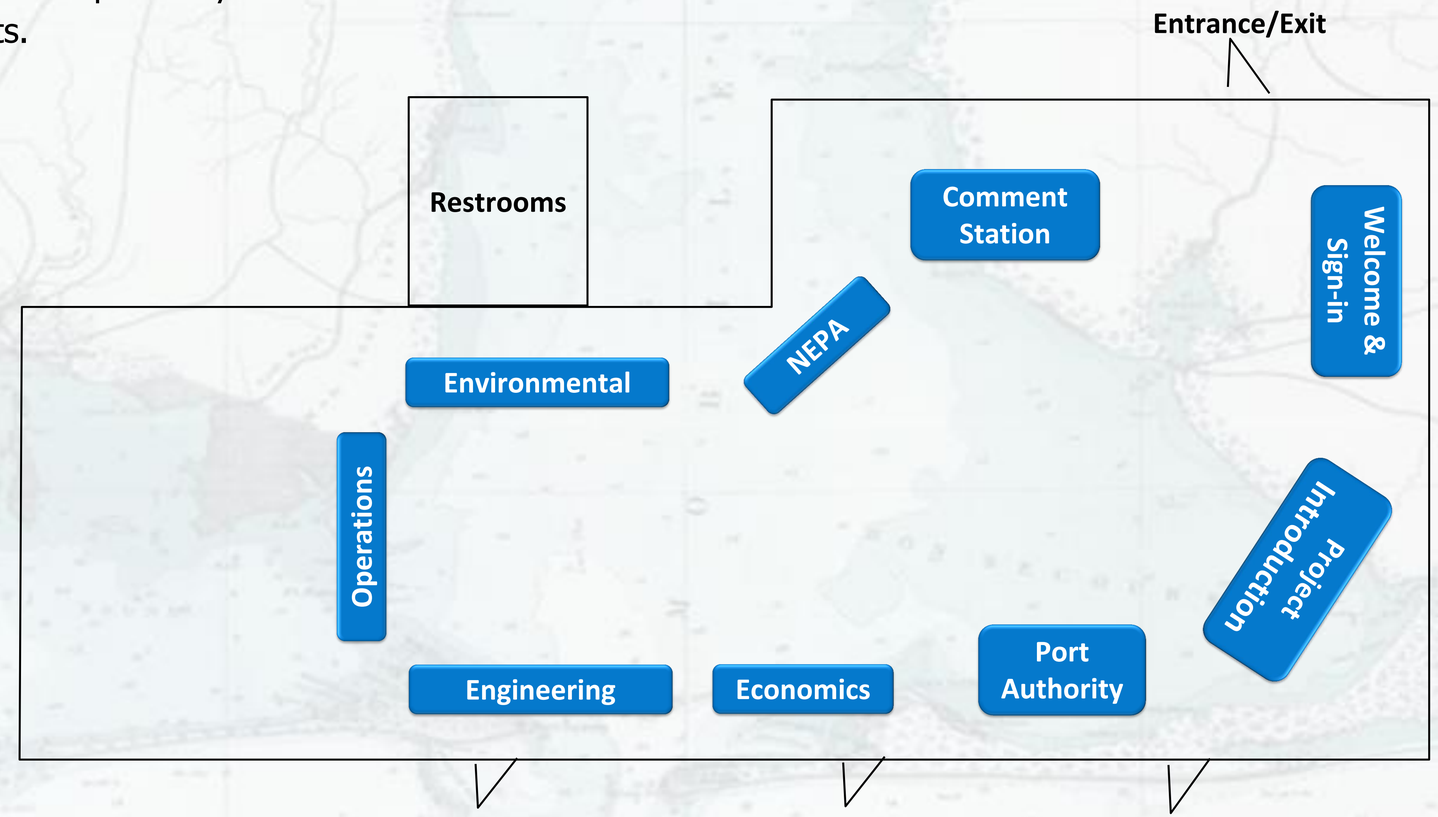
The U.S. Army Corps of Engineers is conducting a study to determine the feasibility of deepening and widening of the Mobile Harbor Channel. We are hosting this Open House to update the community on the status of the study and to provide you with an opportunity to ask questions to our subject matter experts.

At today's meeting, please:

1. Sign In
2. Pick up handouts
3. Explore the stations
4. Talk to our representatives
5. Provide your comments

Open House

Feel free to walk through the Open House and stop by each station to learn more about the estimated timeline for the study, potential benefits to the community and the comprehensive analysis that is conducted as part of the GRR process.



THANK YOU for attending this evening!

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MOBILE HARBOR GENERAL REEVALUATION REPORT SCHEDULE (48 MONTHS)

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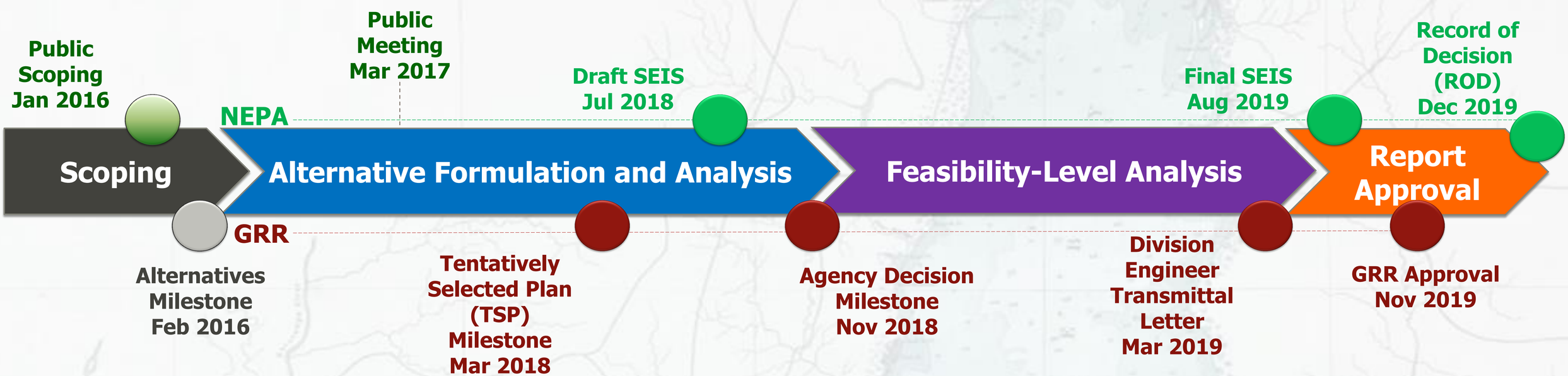

- Identify study objectives
- Define problems & opportunities
- NEPA scoping
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- Develop the "Future without Project Condition"
- Analyze, evaluate and compare alternatives to identify TSP
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- HQ review of final report
- Final SEIS and state and agency review
- GRR approval
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PLANNING PROCESS

Background

In 2014, the Alabama State Port Authority submitted a request to the U.S. Army Corps of Engineers to consider increasing the depth and width of the Mobile Harbor Channel to authorized dimensions. In response, the U.S. Army Corps of Engineers is preparing a General Reevaluation Report (GRR).

General Reevaluation Report (GRR)

A GRR is the reanalysis of a previously completed study that is required due to changed conditions, using current planning criteria and policies. Study results will be documented in a GRR incorporating engineering, economic, real estate and environmental analyses.

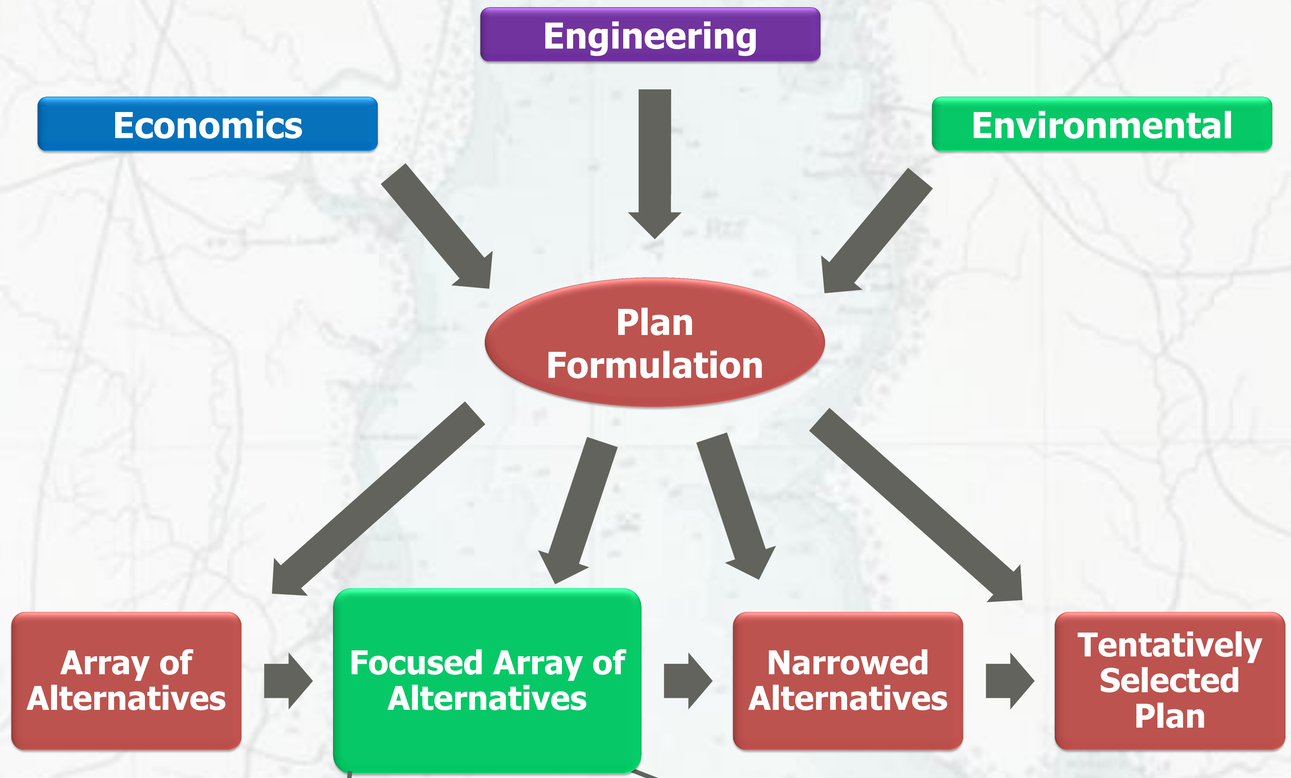
The GRR is a 4 year, $7.8M effort.

Concurrently with the GRR, the U.S. Army Corps of Engineers is also preparing a Supplemental Environmental Impact Statement (SEIS) defining current environmental conditions and the effects of proposed actions and alternatives. The SEIS will identify mitigation as appropriate.

The Six-step Planning Process

This study will utilize the traditional iterative six-step planning process commonly used in water resource development studies:

- **Step 1** - Identify problems and opportunities
- **Step 2** - Inventory and forecast conditions
- **Step 3** - Formulate alternative plans
- **Step 4** - Evaluate alternative plans
- **Step 5** - Compare alternative plans
- **Step 6** - Select a plan



Focused Array of Alternatives (Considering Beneficial Use)

- Depths from 47 to 53 feet (49 to 55 feet in Entrance Channel)
- Widths of 500 and 550 feet (Bay Channel)
- Bend easing (Upper Bar Channel)
- Lengths of widening of 5, 10, and 15 miles

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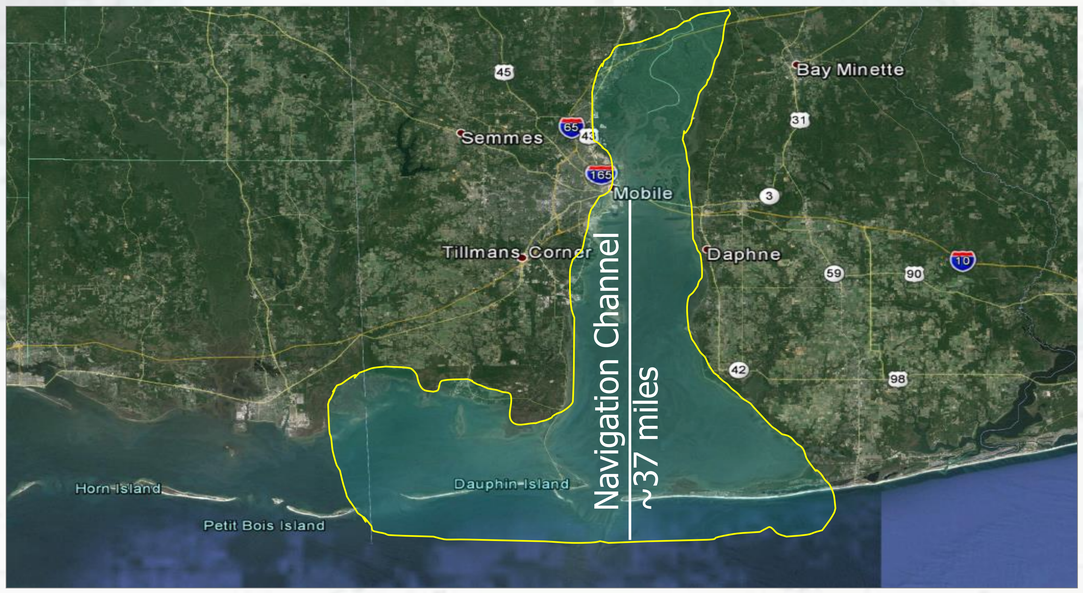
Study Area – Mobile Bay

- The Bay is a complex system.
- Five rivers (Mobile, Tensaw, Blakeley, Spanish, and Apalachee) form the 2nd largest delta in the US, and the 4th largest watershed based on drainage area.
- 415 square mile bay area with average depth of 10 feet and over 135 miles of shoreline. Designated as 1 of 28 National Estuary Programs in 1995.
- One of the most diverse ecosystems in the US with 3 types of wetland habitats, extensive seagrasses, 200+ species of fish, major shellfish communities, and 300+ species of birds and reptiles.
- Mobile-Tombigbee river basin is U.S. Fish and Wildlife Service (USFWS) recognized Strategic Habitat Units in Alabama for managing, recovering, and restoring populations of rare fishes, mussels, snails, and crayfishes.
- One of two places on earth where the phenomenon of "Jubilees" occur.
- Alabama Seafood Industry contributes approximately $461M in revenue annually and 10,000 jobs.



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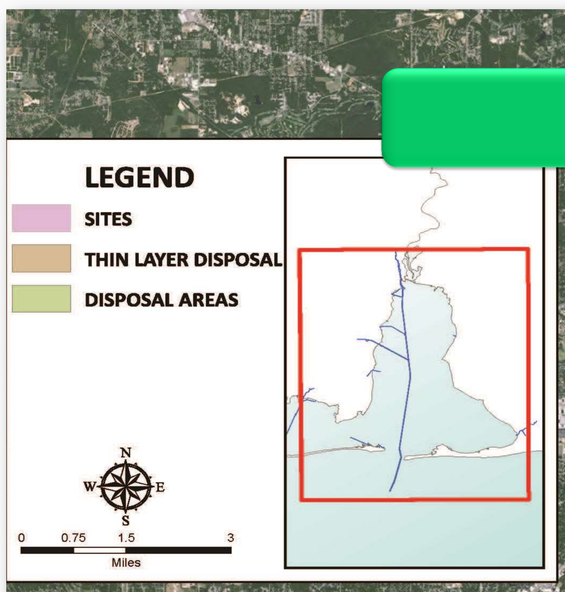
Beneficial Use Options



Creation of in-bay/nearshore reefs or containment structures

- Use of cohesive clay material chunks (locations to be determined)

Use of existing thin-layer placement sites

- Already considered environmentally acceptable for maintenance material (multiple locations)

Placement to reduce hypoxia

- Areas of previous oyster shell mining operations

Dauphin Island Causeway

- Natural shoreline associated with protection of roadway

Little Dauphin Island and Little Point Clear

- Bon Secour National Wildlife Refuge
- Protect and conserve sensitive habitats

Fort Morgan Peninsula – North Shore

- Owned by Alabama State Historic Commission
- Restore to historic dimensions

Sand Island/Pelican Island Complex

- Place sandy material in littoral system

ALABAMA STATE PORT AUTHORITY

WHY ASPA RECOMMENDS DEEPENING AND WIDENING MOBILE HARBOR

Two-thirds of the Port of Mobile's vessel traffic today is restricted or delayed directly impacting shipper costs and competitiveness.

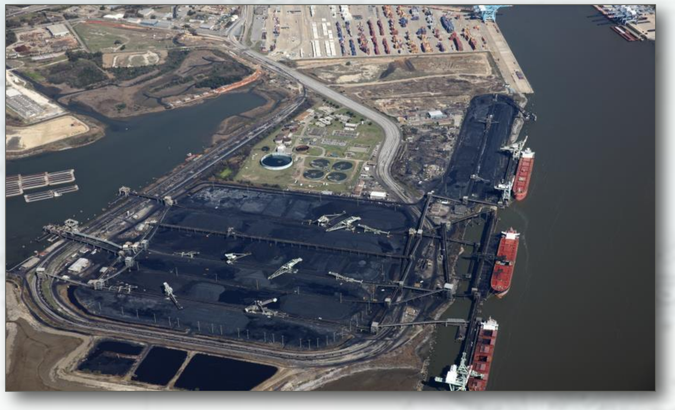
- **Full-Service Seaport -- 10th Largest in the United States - Balanced Trade (Strong Export Market)**
  - ✓ 58M tons handled port-wide. ASPA terminals represent 25 - 29M tons annually
- **Port of Mobile has sustained growth in steel, petroleum and containerized cargoes**
  - ✓ Record 2016 19% growth in containerized cargo – automotive, aviation, forest products, chemicals, poultry
  - ✓ Now ranked No. 2 steel port in the United States
  - ✓ 10 New Ocean Carriers Added Service into Mobile in 2016-2017
- **The Port of Mobile Drives the Regional Economy**
  - ✓ Alabama State Port Authority terminals alone generate 124,328 jobs and $19.4B in total economic value
  - ✓ Private Petroleum / Petroleum Products terminals alone generate 5,220 jobs and $687M in economic value
- **Modernizing the Port of Mobile is Necessary Because**
  - ✓ Larger Ships Now Transit North American Trade Lanes – Including the Port of Mobile
  - ✓ Channel Deficiencies and Vessel Transit Inefficiencies Directly Impact Shipper Costs and Competitiveness
  - ✓ Mobile's Port-side Infrastructure Investments have met Shipper Needs ($500+ Million Invested) - Channel Investment Necessary to Leverage Non-federal Sponsor investment and Regional Growth

ALABAMA STATE PORT AUTHORITY

MOBILE HARBOR DEEPENING AND WIDENING CONSIDERATIONS

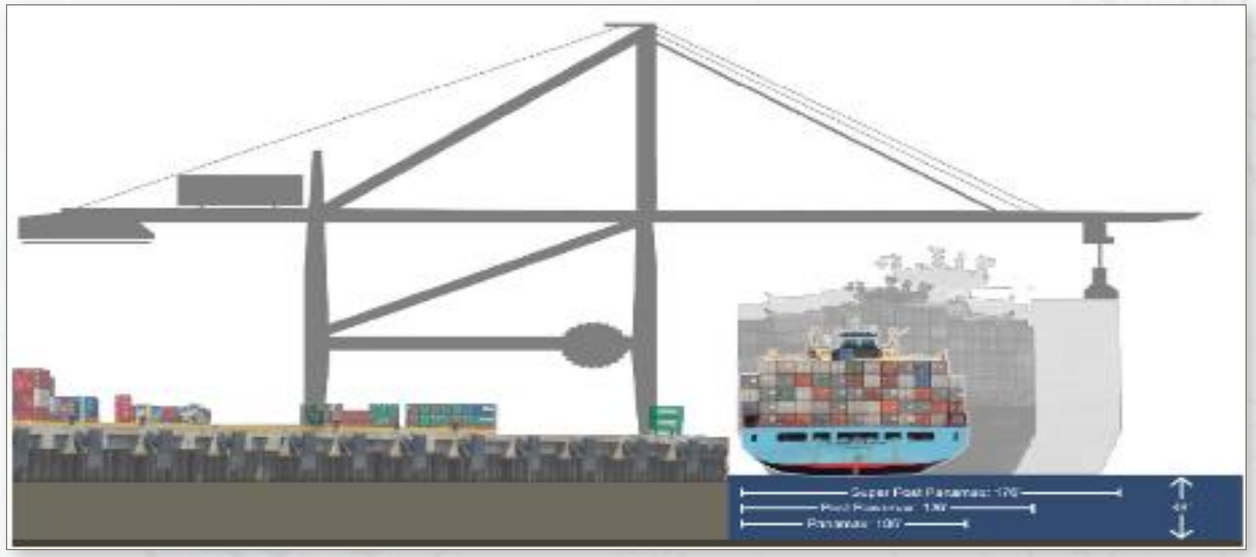
MEGATRENDS IN GLOBAL TRADE

- ✓ Since 2000, the population in the South went from 35.6% to 37.9% - the largest jump in the U.S. (U.S. Census - 2016)
- ✓ Total U.S. e-commerce sales for 2016 estimated at $394.9B, an increase of 15% from 2015. (U.S. Census – Jan. 2017). Projected value will top $485B by 2021, generating demand for logistics and supply-chain management investments in port-centric areas (Statista 2015)
- ✓ Long-range global demand for steel (Statista 2016) will climb 9.5% by 2020 and metallurgical Coal (EIA – May 2014) will moderately increase. **Port of Mobile is the one of the largest exporters of metallurgical coal used in steel production and is the 2nd largest steel port in the Nation.**
- ✓ U.S. manufacturing growth is up. Manufacturers Alliance for Productivity and Innovation Sep 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 will steadily increase year after year through 2024. (USDA – Feb 2015) – **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, Jul 2014)



ALABAMA STATE PORT AUTHORITY

MOBILE HARBOR DEEPENING AND WIDENING EXPECTED BENEFITS



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 costs
- ✓ Higher costs impact U.S. competitiveness and consumer prices

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 are restricted by depth**
- ✓ **Two-thirds of the vessels are restricted to one-way or daylight transit**
- ✓ CMA CGM Asian Service has begun using 8000 TEU ships at Mobile since opening of Panama Canal– Mobile's 45-foot draft limits 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 feet) and Freeport (currently at 52 feet). Mobile's 45-foot draft contributes to inefficient vessel utilization

Potential Environmental Benefits

Project Construction, if approved, could generate material for environmental restoration

MOBILE HARBOR GENERAL REEVALUATION REPORT

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ECONOMICS

TASK: IDENTIFY THE PLAN THAT MAXIMIZES NET BENEFITS [1]

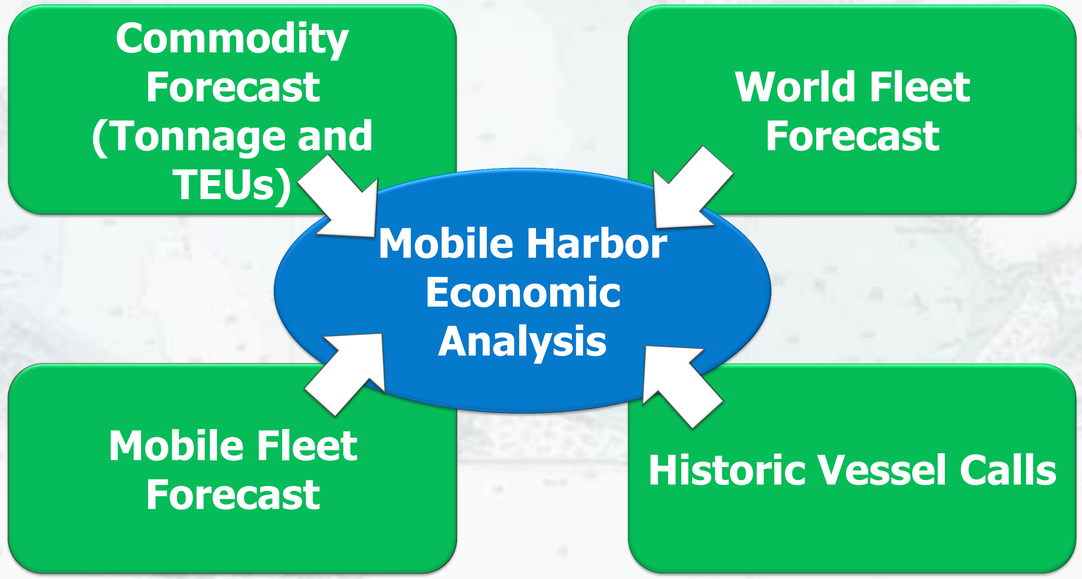
Status: 75% complete

Description: Determine the transportation cost savings for each alternative and compare to the cost of the alternative.

Purpose: To identify the tentatively selected plan based on economic efficiencies.

Next Steps: Identify the plan that maximizes the total net Federal National Economic Development benefits for a project consistent with protecting the environment.

[1] Net benefits are the alternative plans benefits, minus the alternative plans costs.



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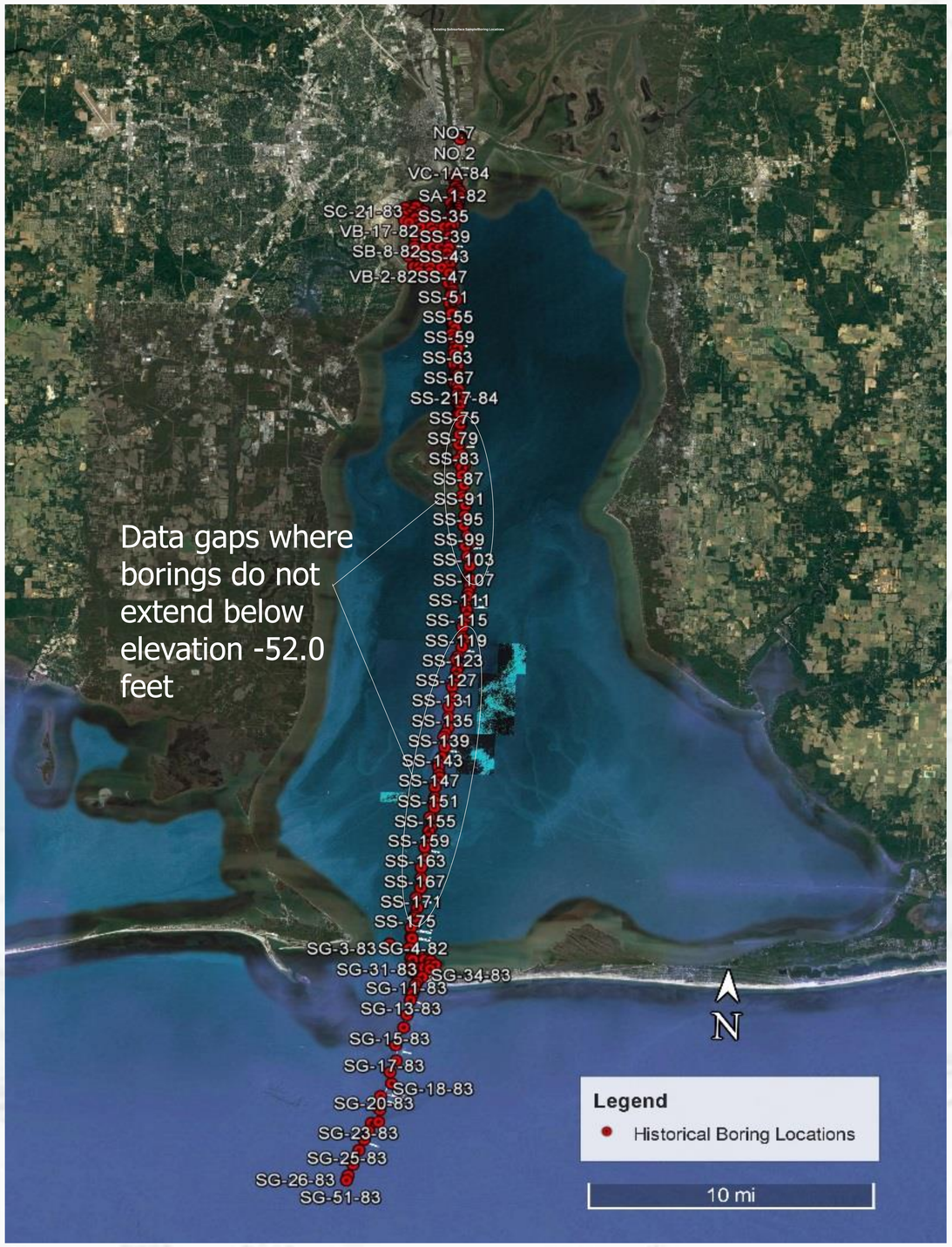

ENGINEERING CONSIDERATIONS

TASK: CLASSIFY SUBSURFACE CONDITIONS

Status: 75% complete

Description: Compile and evaluate all existing subsurface data for the navigation channel. Collect additional subsurface samples/borings, as needed, to fill data gaps.

Purpose: Characterize the subsurface material to aid in the channel design, determine the suitability for various placement options including beneficial use, and reduce uncertainty in dredging costs.

Next Steps: If the recommended channel depth exceeds 52 feet, subsurface sampling will be conducted in the southern portion of Mobile Bay to fill gaps in the existing data set.


Ship Simulator

TASK: CHANNEL ANALYSIS AND DESIGN

Status: 25% complete

Description: Utilize a Ship Simulator to evaluate the maneuverability of vessels for various channel alignments and dimensions.

Purpose: Confirm if channel designs can be safely and efficiently navigated by ships that will call the port in the future.

Next Steps: Finalize Ship Simulator graphics and conduct Ship Simulations for various channel configurations.

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ENGINEERING CONSIDERATIONS

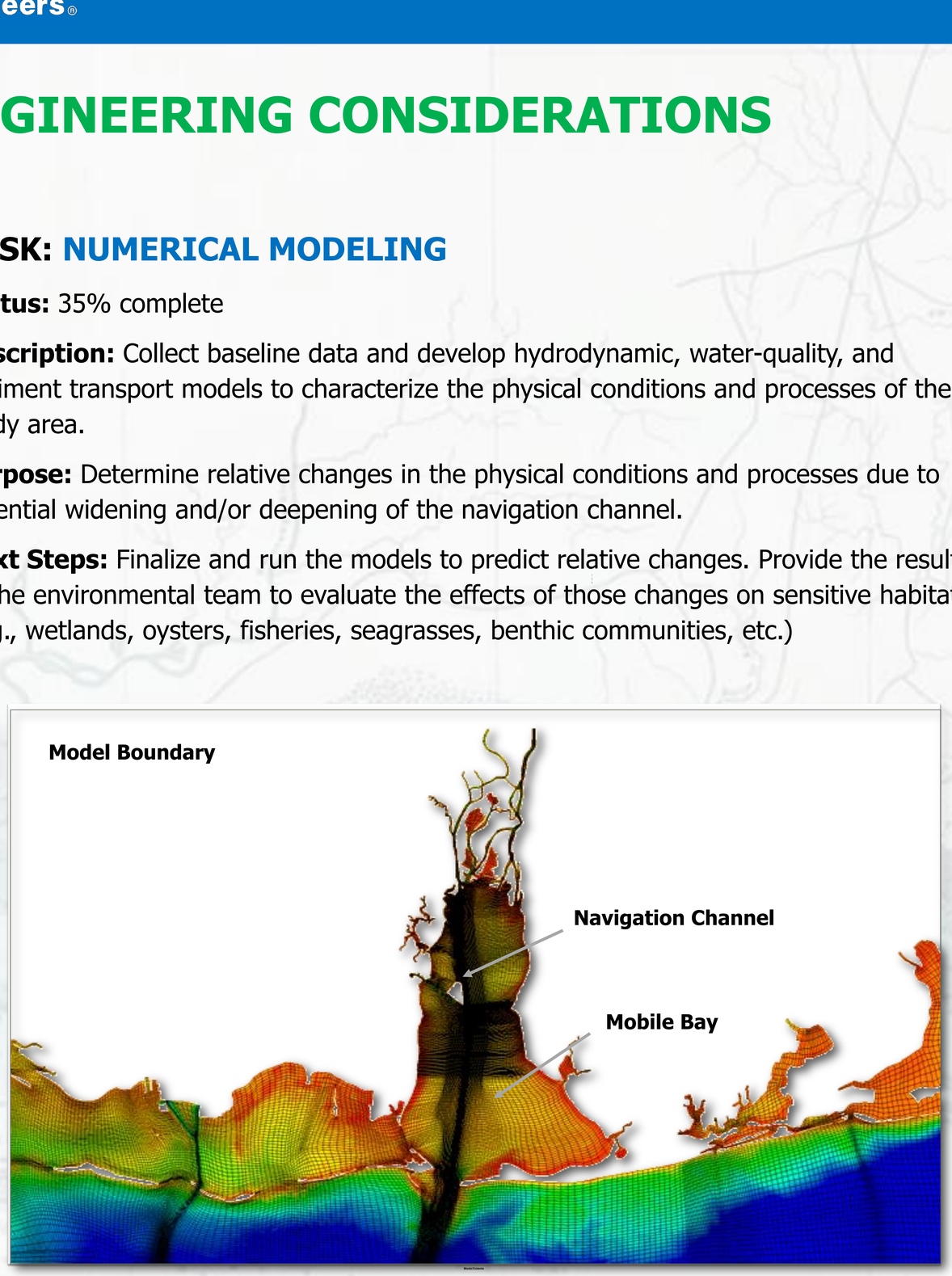
TASK: NUMERICAL MODELING

Status: 35% complete

Description: Collect baseline data and develop hydrodynamic, water-quality, and sediment transport models to characterize the physical conditions and processes of the study area.

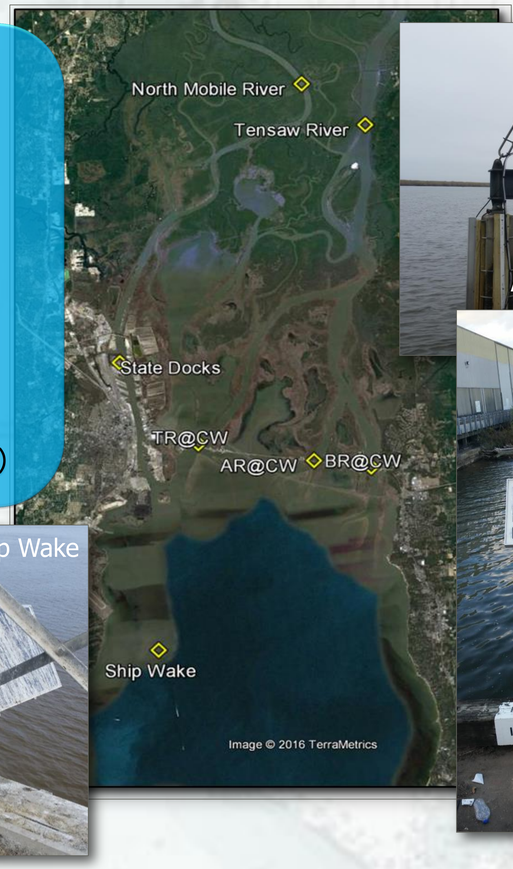
Purpose: Determine relative changes in the physical conditions and processes due to potential widening and/or deepening of the navigation channel.

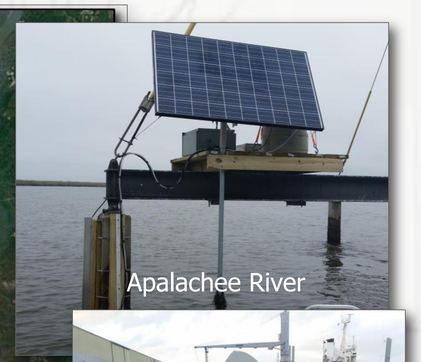
Next Steps: Finalize and run the models to predict relative changes. Provide the results to the environmental team to evaluate the effects of those changes on sensitive habitats. (e.g., wetlands, oysters, fisheries, seagrasses, benthic communities, etc.)



Data Collection Parameters

- Average along stream velocity
- Water level (NAVD88)
- Turbidity
- Salinity
- Temperature
- Automatic sampling for Total Suspended Solids
- Wave height (ship wake)





TASK: COST ENGINEERING

Status: 25% complete

Description: Develop design, construction, and maintenance costs and identify monetary risks for the project alternatives.

Purpose: Determine most economical plan (benefit to cost ratio) and identify potential financial obligations.

Next Steps: Continue the development and refinement of costs as the study progresses.

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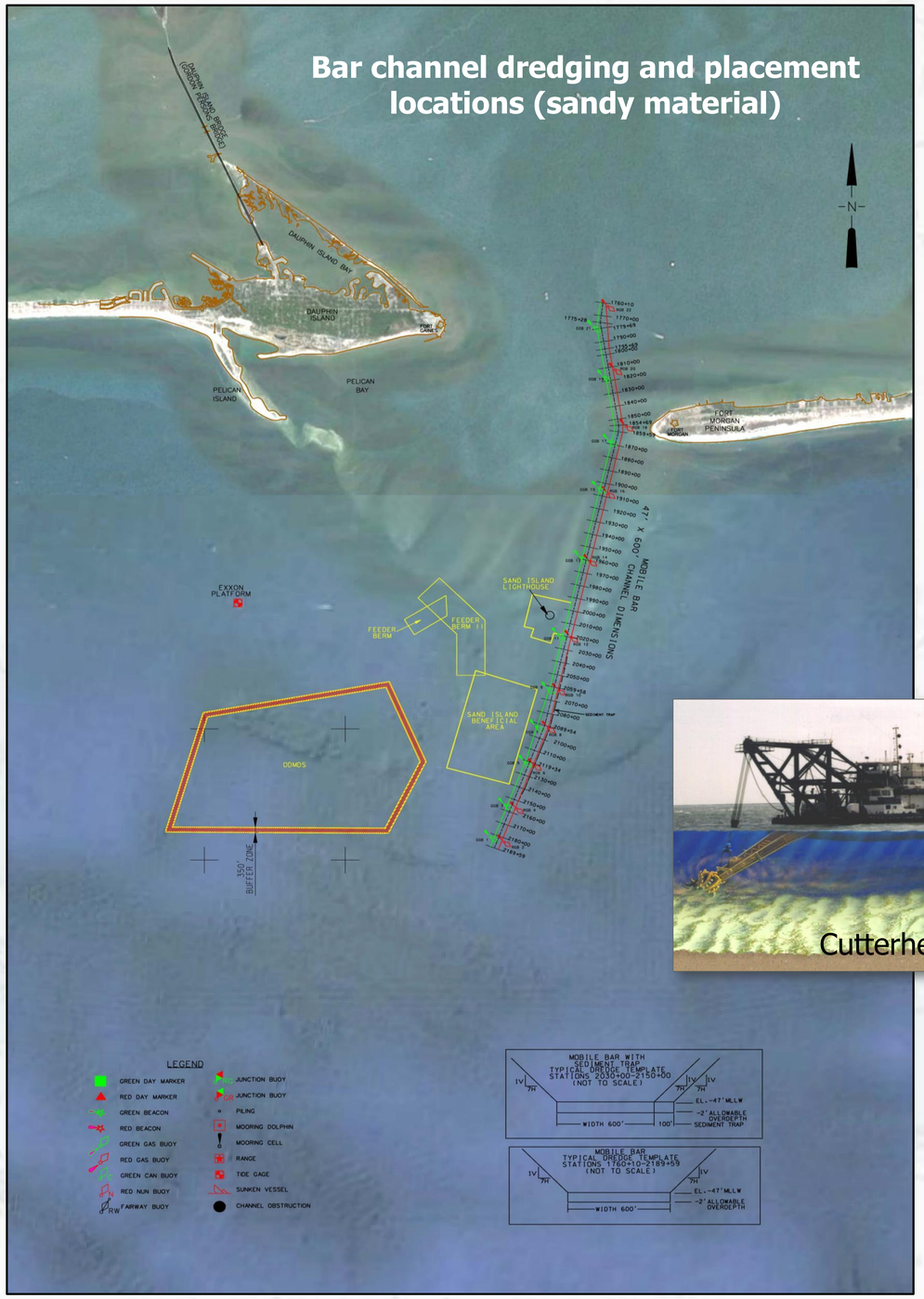
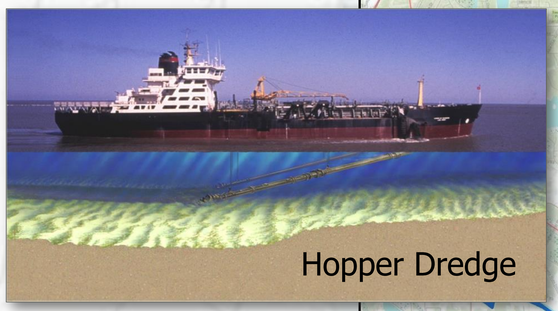
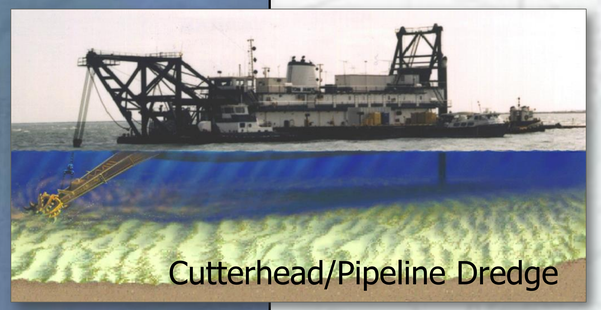
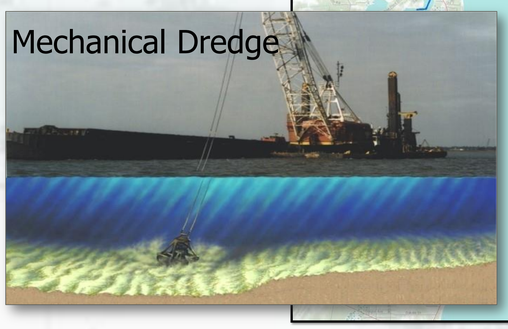
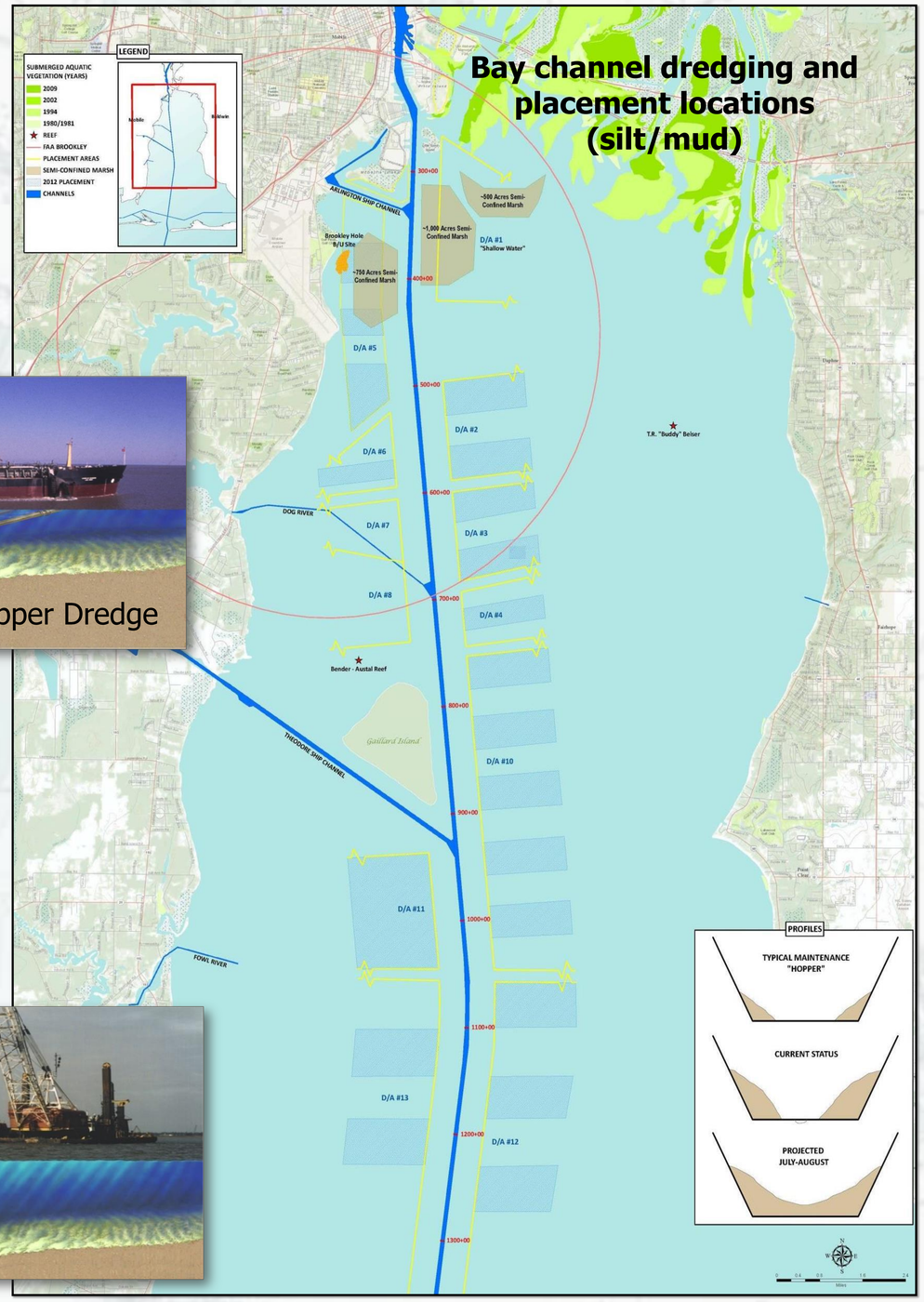
CURRENT DREDGING AND PLACEMENT











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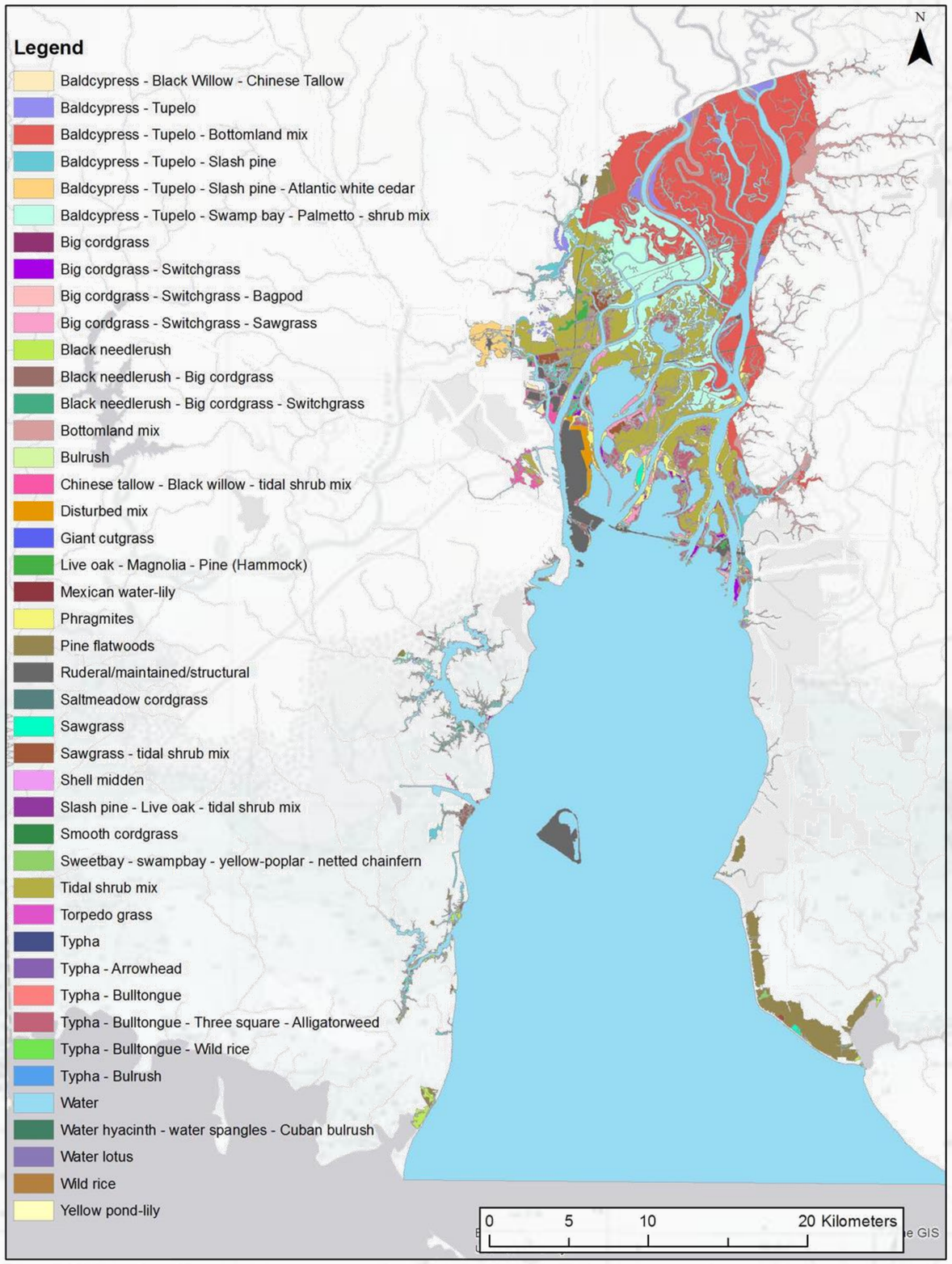

ENVIRONMENTAL CONSIDERATIONS

TASK: WETLAND ASSESSMENT AND MAPPING

Status: 50% complete

Description: Identify and map the distribution of existing wetland communities based on historic information and conduct field verification.

Purpose: Establish baseline conditions to predict potential impacts to wetlands, based on the water quality model.

Next Steps: Identify existing wetland vegetation to evaluate water quality tolerances and compare to model outputs.

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ENVIRONMENTAL CONSIDERATIONS

TASK: SUBMERGED AQUATIC-VEGETATION (SAV) ASSESSMENT AND MAPPING

Status: 40% complete

Description: Use historic and current SAV studies to conduct analysis of potential impacts from channel modifications.

Purpose: Map existing SAV resources and compare water quality tolerances to model outputs

Next Steps: Evaluate water quality model outputs to predict potential impacts to SAV communities.

TASK: OYSTER MODELING

Status: 20% complete

Description: Assess existing oyster resources and potential impacts based upon water quality and oyster larvae distribution.

Purpose: Evaluate potential future impacts to oysters in the project area using the outputs of water quality and hydrodynamic models.

Next Steps: Utilize modeling results to determine potential changes to oyster habitats resulting from the project alternatives.

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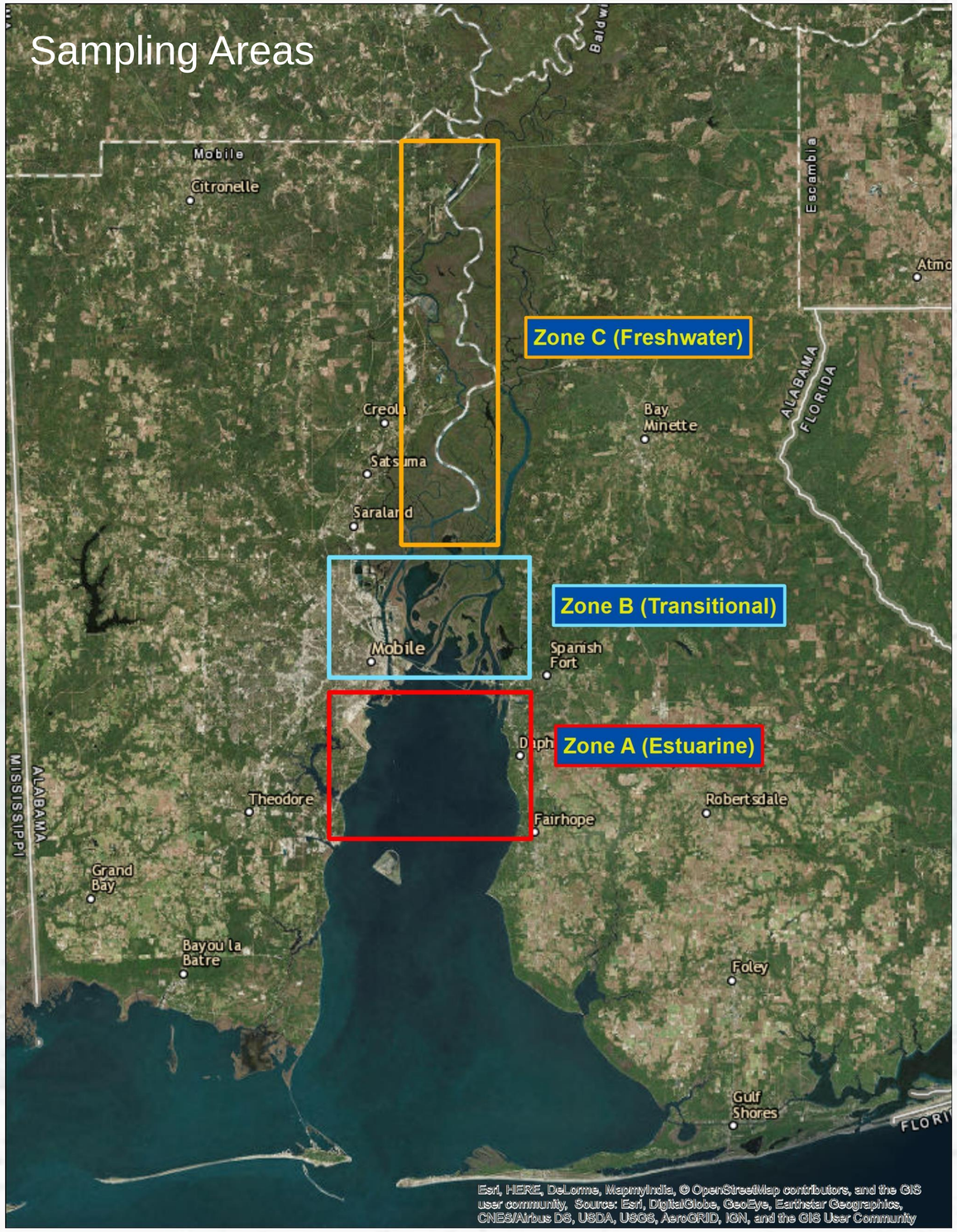


ENVIRONMENTAL CONSIDERATIONS

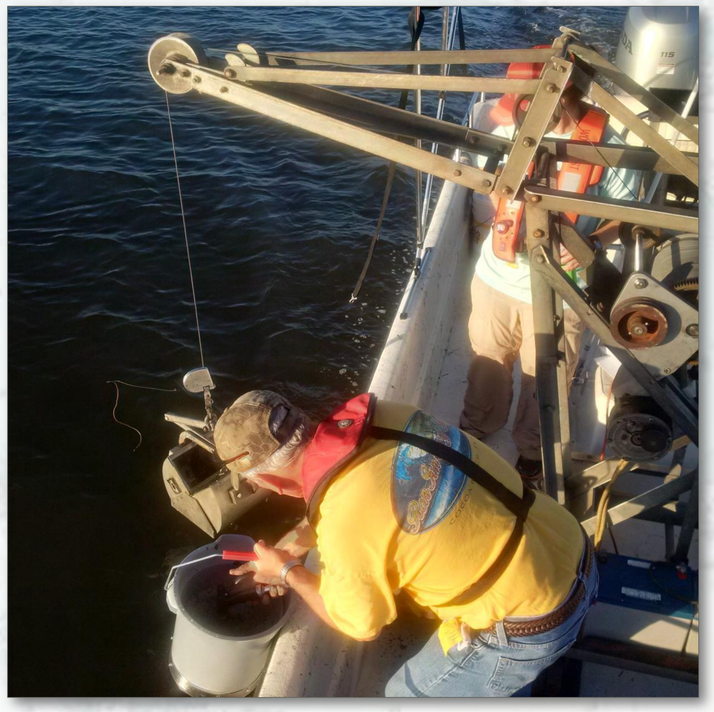
TASK: BENTHIC COMMUNITY ASSESSMENT

Task Status: 30% complete

Description: Collect sediment-benthic samples in critical ecological zones within the Mobile Bay also includes sediment and water-quality measurements. Conduct predictive analysis of water-quality changes to benthic invertebrates.

Purpose: Analyze impacts to benthos from water-quality and saltwater intrusion based on information obtained through water-quality modeling.

Next Steps: Conduct and analyze spring/summer benthic sampling and finalize impact prediction based on water-quality modeling data.



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ENVIRONMENTAL CONSIDERATIONS

TASK: FISHERIES ASSESSMENT

Status: 30% complete

Description: Establish baseline conditions of fish populations in the project area. (Initial summer/fall sampling completed) Assess fish populations to evaluate recruitment, growth, and spawning of fish within the study area.

Purpose: Evaluate potential impacts to fish populations as a result of the proposed project actions.

Next Steps: Conduct spring/summer fish sampling. Quantify relationships between salinity and fish populations to predict potential impacts.

OTHER ENVIRONMENTAL CONSIDERATIONS

Threatened and Endangered Species

- Gulf sturgeon
- Alabama red-bellied turtle
- Sea turtles
- Shore birds
- Manatees

Essential Fish Habitat

- Shrimp
- Crabs
- Red drum
- Migratory species

Cultural Resources

- Rich maritime history
- Coordination according to Natural Historic Preservation Act
- Dredging and placement areas evaluated
- Known and located resources evaluated for direct and indirect effects

Further Considerations

- Air quality
- Noise
- Environmental justice
- Cumulative impacts

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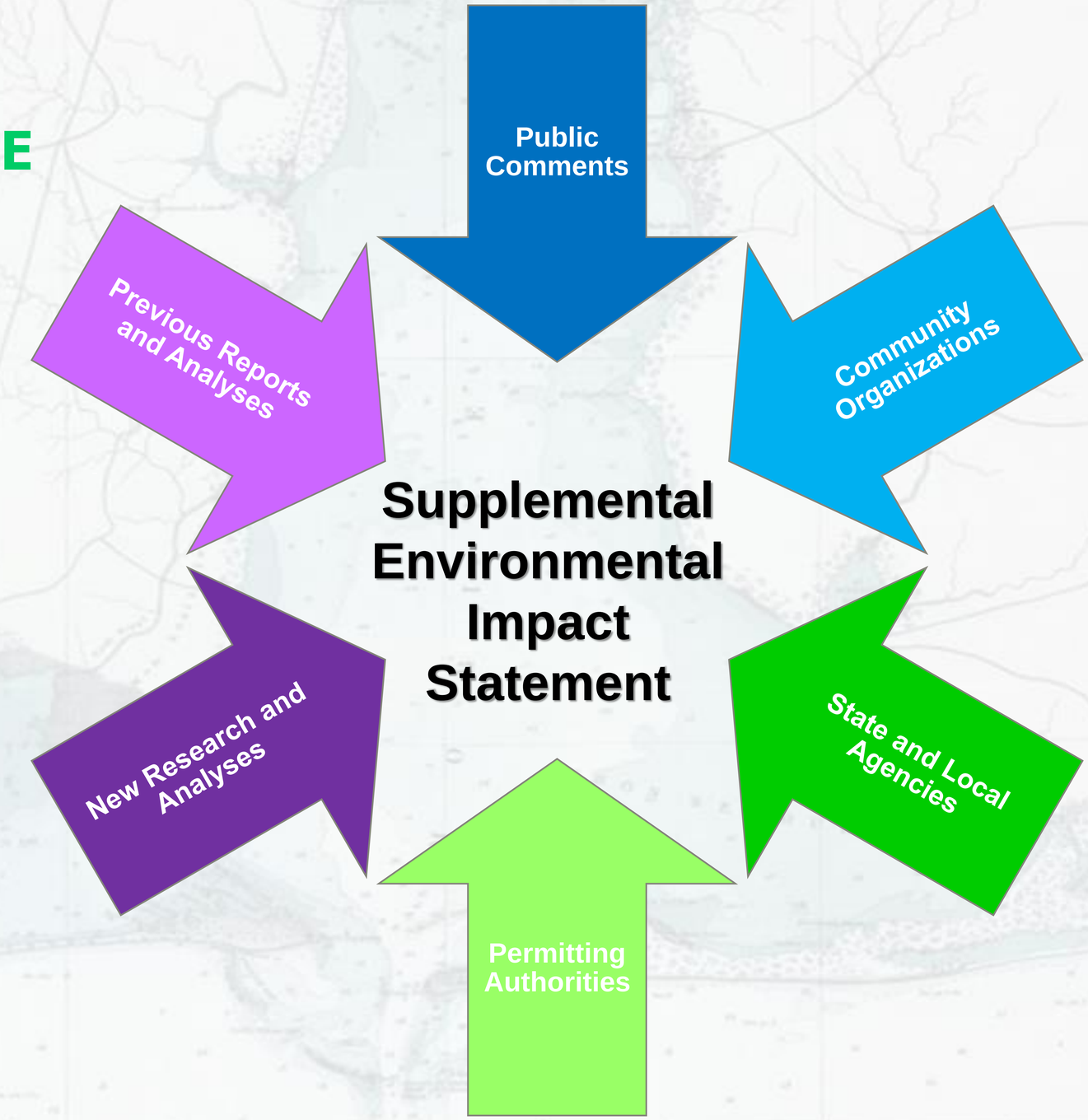
NATIONAL ENVIRONMENTAL POLICY ACT (NEPA) COMPLIANCE

NEPA requires Federal agencies to use a systematic approach to consider potential impacts on the environment and the community.

SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT (SEIS)

- An SEIS is a document prepared in accordance with NEPA that presents the results of the analysis of the effects of a proposed action and its alternatives on the environment.
- An SEIS includes a description of the baseline conditions of the affected environment, evaluated against the effects of alternatives and the proposed action.
- An SEIS also identifies potential consequences and appropriate mitigation to minimize potential adverse impacts.



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MOBILE HARBOR GENERAL REEVALUATION REPORT SCHEDULE (48 MONTHS)

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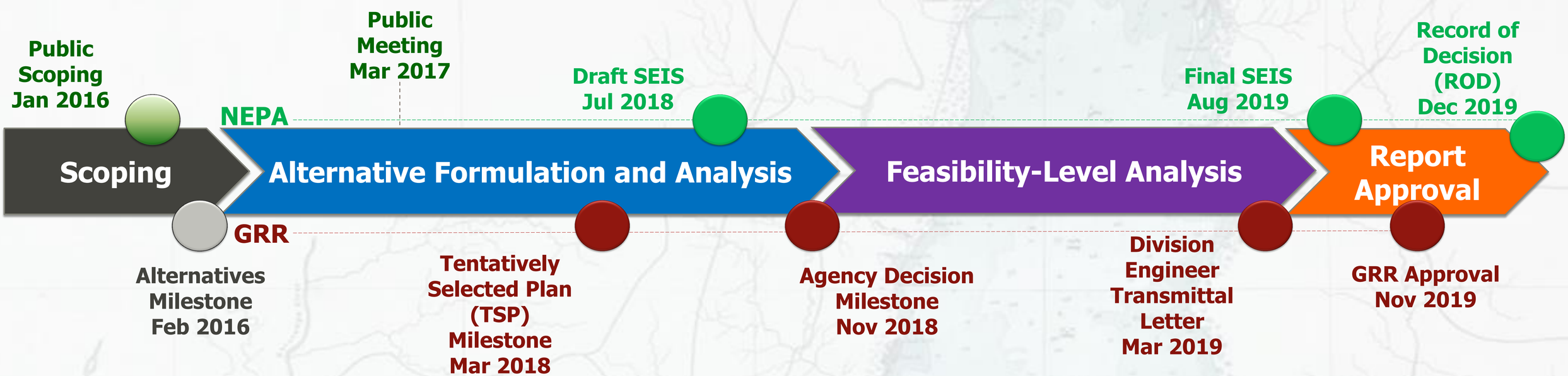

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Key Scoping Comments

Support of Project
- ✓ Studies on-going to identify the economic benefits gained from improved channel efficiency and transportation cost savings

Impacts to Environmental/Natural Resources
- ✓ Studies on-going to determine environmental impacts of any proposed modifications to the channel. Potential impacts resulting from the channel modifications will be evaluated and mitigation measures, if required, will be identified.

Impacts to Fisheries Communities
- ✓ Studies on-going to determine impacts to the Fisheries Communities. Potential impacts resulting from the channel modifications will be evaluated and mitigation measures, if required, will be identified.

Shoreline Erosion Caused by Channel Modifications
- ✓ Studies on-going to determine if the channel modifications will have an effect on shoreline erosion. Potential impacts resulting from the channel modifications will be evaluated and mitigation measures, if required, will be identified.

Climate Change
- ✓ The potential impacts of climate change on the project as well as greenhouse gas production are being evaluated.

Dredged Material Placement
- ✓ Studies are on-going to assist with the determination of suitable placement of dredge material.
- ✓ The Corps will use the best available science in reaching a decision.

Historic Sand Loss to Dauphin Island
- ✓ 2005 Lawsuit Settlement led to mutually agreed upon neutral investigation by Byrnes et al.
- ✓ 1978 Feasibility Report superseded by the 2010 Byrnes Report which found no measurable negative impacts associated with channel dredging.
- ✓ Mobile Harbor GRR will evaluate impacts associated with any proposed modifications to the existing channel.

Compliance with Laws and Regulations
- ✓ USACE will comply with all applicable laws and regulations.

Public Involvement
- ✓ Additional public engagement has been incorporated into the GRR/NEPA process
- ✓ Additional public engagement meetings will be scheduled for 2017 and 2018.

Impacts to Environmental Justice Communities
- ✓ The SEIS will include an evaluation of potential direct, indirect, and cumulative impacts on Environmental Justice Communities.

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MOBILE DISTRICT

National Fish and Wildlife Foundation

GULF COAST ECOSYSTEM RESTORE COUNCIL

ALABAMA GREAT SEAL

MOBILE HARBOR GENERAL REEVALUATION REPORT

- Federal and State cost-shared study that utilizes economic, engineering, and environmental analyses to identify an environmentally acceptable and engineering sound channel deepening and/or widening alternative (up to 10' deeper an d 150' wider) that maximizes net economic benefits.
- Scheduled Completion Date: November 2019

ALABAMA BARRIER ISLAND ASSESSMENT

- Collaborative effort between the State of Alabama, U.S. Geological Survey (USGS), and the U.S. Army Corps of Engineers (USACE), funded by the National Fish & Wildlife Foundation (NFWF) Gulf Environmental Benefit Fund, to investigate viable and sustainable options to protect, enhance, and/or restore the natural resources of Dauphin Island and the surrounding coastal areas.
- Scheduled Completion Date: March 2019

UPPER MOBILE BAY - BENEFICIAL USE SITE

- Phase 1 – Restore funded effort to complete the design and environmental coordination for an approximately 1,200 acre semi-contained, open water dredged material disposal area (tidal marsh) in upper Mobile Bay. Scheduled Completion Date : Phase 1 – TBD. Approved by Restore but pending receipt of funds.
- Phase 2 – Potential Restore funded effort to complete the construction of the containment structure for the site . The site will belong to the Alabama State Port Authority and will be used for the future placement of maintenance dredged material from the federal navigation channel and other sources.
  Scheduled Completion Date: Phase 2 – TBD. Has not been approved for funding.

ALABAMA COASTAL COMPREHESIVE PLAN (ACCP)

- State of Alabama funded study to develop a high-level planning tool (a "roadmap") that (1) identifies the visions (environmental, economic, social, etc.) of the constituents of Mobile and Baldwin Counties, (2) determines if a plan already exists to address those visions, (3) identifies future vulnerabilities to achieving those visions, and (4) highlights potential future planning considerations to increase the resiliency of the environment, society, and economy.
- Scheduled Completion Date: January 2018

US Army Corps of Engineers®

MOBILE HARBOR GENERAL REEVALUATION REPORT

U.S.ARMY

Submit Your Comments

Your input will assure that all concerns have been considered during the study. Submit your comments in any of the following ways:

Using comment forms provided at display tables.

Email: MobileHarborGRR@usace.army.mil

Postal Mail:

U.S. Army Corps of Engineers
ATTN: PD-F
P.O. Box 2288
Mobile, AL 36628

Stay Informed

Biweekly updates and project documents on the project website :
www.sam.usace.army.mil/Missions/Program-and-Project-Management/Civil-Projects/Mobile-Harbor-GRR/

Sign up for the Listserve on the project website to receive a copy of the quarterly bulletin.

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THANK YOU for attending this evening.