

Savannah Harbor Expansion Project

Georgia and South Carolina

Civil Works Review Board

22 March 2012



®

US Army Corps of Engineers
BUILDING STRONG®



Agenda

TIME	SUBJECT	PRESENTER
1300 – 1310	Welcome	MG Michael Walsh
1310 – 1315	Project Introduction	MG Todd Semonite
1315 – 1405	Project Briefing	COL Jeff Hall
1405 – 1415	Sponsor Support	Mr. Curtis Foltz
1415 – 1430	Federal Agency Views - EPA (Meiburg), USFWS (Gould), DOC (Medina)	
1430 – 1440	Division Support	MG Todd Semonite
1440 – 1445	Agency Technical Review	Ms. Sheridan Willey
1445 – 1455	Independent External Peer Review	Ms. Lynn McLeod
1455 – 1505	Break	
1505 – 1520	Policy Review Assessment	Mr. Charles (Lee) Ware
1520 – 1540	Board Discussion	MG Michael Walsh
1540 – 1545	Action	Mr. Tab Brown
1545 – 1555	Lessons Learned	MG Semonite & COL Hall
1555	Close	MG Michael Walsh



Unique Authorization

PUBLIC LAW 106–53—AUG. 17, 1999.

(b) **PROJECTS SUBJECT TO A FINAL REPORT.**—The following projects for water resources development and conservation and other purposes are authorized to be carried out by the Secretary substantially in accordance with the plans, and subject to the conditions, recommended in a final report of the Chief of Engineers if a favorable report of the Chief is completed not later than December 31, 1999:

(9) **SAVANNAH HARBOR EXPANSION, GEORGIA.**—

(A) **IN GENERAL.**—Subject to subparagraph (B), the project for navigation, Savannah Harbor expansion, Georgia, including implementation of the mitigation plan, with such modifications as the Secretary considers appropriate, at a total cost of \$230,174,000 (of which amount a portion is authorized for implementation of the mitigation plan), with an estimated Federal cost of \$145,160,000 and an estimated non-Federal cost of \$85,014,000.

(B) **CONDITIONS.**—The project authorized by subparagraph (A) **may be carried out only after**—

(i) the Secretary, in consultation with affected Federal, State of Georgia, State of South Carolina, regional, and local entities, reviews and approves an environmental impact statement for the project that includes—

(I) an analysis of the impacts of project depth alternatives ranging from 42 feet through 48 feet; and

(II) **a selected plan for navigation and an associated mitigation plan as required under section 906(a) of the Water Resources Development Act of 1986 (33 U.S.C. 2283(a)); and**

(ii) **the Secretary of the Interior, the Secretary of Commerce, the Administrator of the Environmental Protection Agency, and the Secretary approve the selected plan and determine that the associated mitigation plan adequately addresses the potential environmental impacts of the project.**

(C) **MITIGATION REQUIREMENTS.**—The mitigation plan shall be implemented before or concurrently with construction of the project.



Project Introduction

(MG Todd T. Semonite)



Federal Principals

- Four Federal Cooperating Agencies:
 - Secretary of the Interior
 - Secretary of Commerce
 - Secretary of the Army
 - Administrator, Environmental Protection Agency
- Outcomes:
 - Washington Level Engagement and Commitment
 - Senior Level Visibility, Guidance, Communication
 - Interagency Consensus Building
 - Guidance to Regional Offices



Washington Level Collaboration

Principals' Meetings:

- 27 May 2010- Senior Leaders Panel
- Jan 2011- Washington Level Principals Meeting
- 24 Mar 11- Senior Leaders Meeting (ASA (CW) & Federal Agency Representatives
- 1 Apr 2011- Federal Principals Meeting-ASA(CW), DOC, DOI, EPA
- 11 Nov 2011- Federal Principals Meetings-DOC, DOI, EPA Individually
- 24 Feb 2012 - DOC & NOAA Meeting



Regional Executive Steering Committee

Purpose - Collaboration, Policy and Issues Resolution

➤ Strategic Value:

- Model framework-regional Interagency collaboration
- Proponent of progress while ensuring study quality

➤ Members:

- US EPA Region 4
- US Fish and Wildlife Service, Region 4
- Department of Commerce - National Marine Fisheries Service, Southeastern Region
- Georgia Ports Authority
- South Atlantic Division - (Chair)
- Savannah District



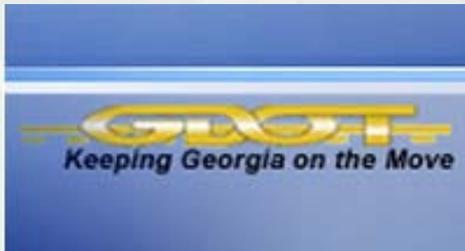
Regional Executive Steering Committee

➤ Outcomes:

- Facilitated development of study at regional level
- Direct communication with senior leadership
- Study visibility and networking at regional level
- Parallel relationships and communication channels
- Direct guidance to area field offices and Interagency technical teams
- Onsite resolution of policy conflicts and issues



Interagency and Public Participation



➤72 Stakeholder Evaluation Group Meetings (includes the public-GPA proponent)

➤3 Executive Management Group Meetings

➤13 Executive Steering Committee Meetings

➤Public Review
26 Nov 2010 to 25 Jan 2011

➤Public Workshop
15 Dec 2010

➤43 Interagency Coordination Team Meetings



Project Delivery Team

Savannah District

- Project Management, Planning, Environmental, Engineering, Operations, Real Estate, Corporate Communications, Counsel

Wilmington District

- Cost Engineering, Engineering Support, and Environmental Support, Value Engineering

Mobile District

- Deep Draft Navigation Planning Center of Expertise (Economics)

Charleston District

- Value Engineering, Engineering Support

Other Corps Offices

- HQUSACE, SAD, ERDC (Ship Simulation and Impacts Modeling), IWR (Economics), Cost Engineering DX (Cost Risk)

State of Georgia

- Georgia Ports Authority, Georgia Department of Transportation

Federal Cooperating Agencies

- EPA Region 4, USFWS Southeast Region, NOAA-NMFS Southeast Region



Community Involvement Stakeholder Evaluation Group

- GPA - proponent of stakeholder group
- Stakeholder group - advisory group to GPA
- Model of public forum for large complex studies
- Ensured local community participation
- District support - advisory and technical roles



Project Briefing (COL Jeff Hall)



Project Briefing

- **Bottom Line Up Front**
- **Background**
- **Planning Process**
- **Three “E’s”**
- **47’ Selected NED Plan**
- **Cost**
- **Schedule**
- **Reviews & Certification**
- **EOP/Campaign Plan Integration**
- **Risk Management**
- **Summary**



Bottom Line Up Front

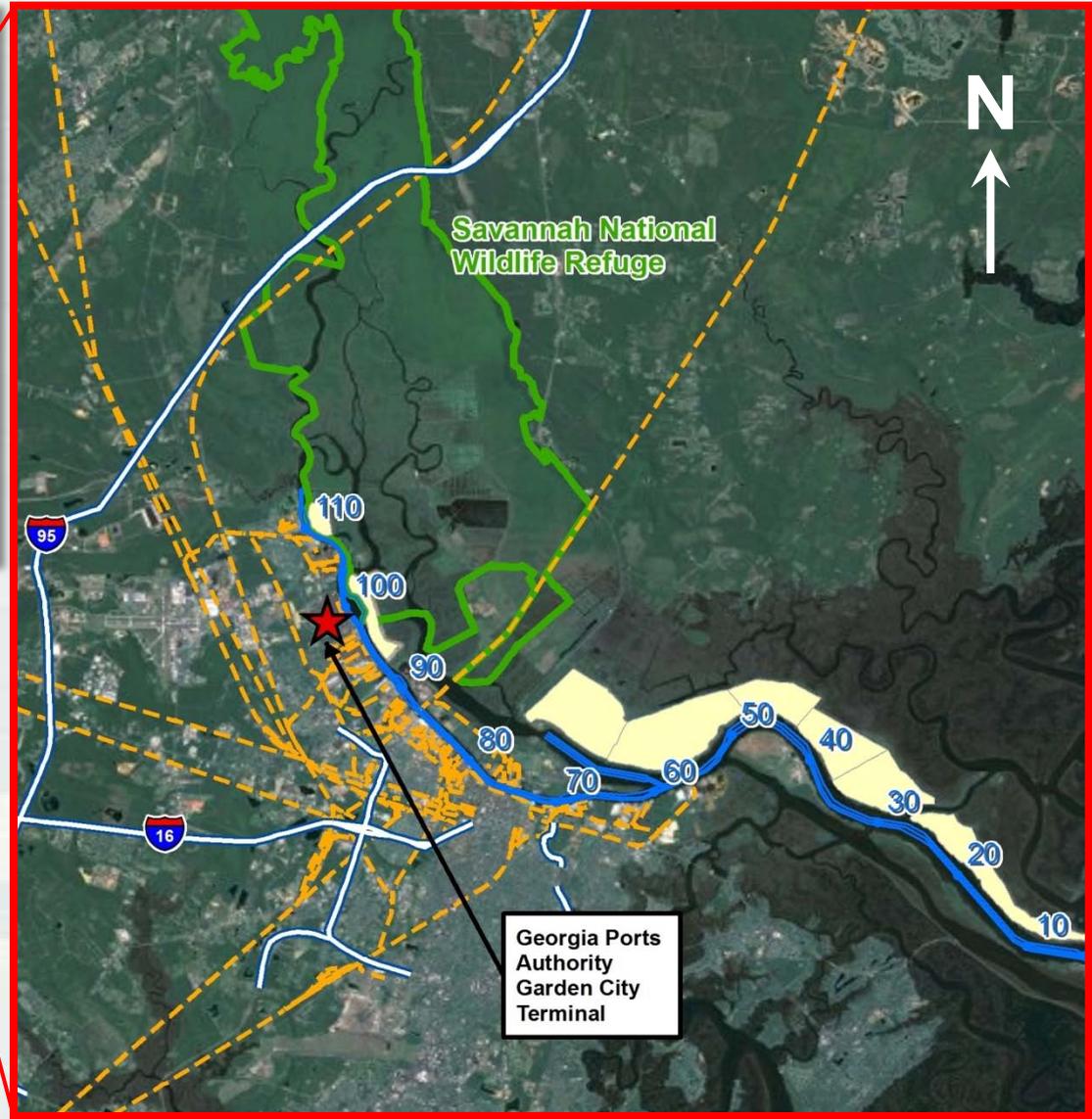
- USACE considered alternatives from 42 to 48 feet
- NED & Selected Plan is the 47-foot alternative
 - Yields **\$174 M** in total annual net benefits
 - Project First Cost **\$652 M** at FY 12 price levels
 - Benefit to Cost Ratio of **5.5 to 1**
 - Annual O&M costs increase from **\$22 M to \$27 M**
 - Environmental impacts can be mitigated to an acceptable level



The CMA CGM FIGARO (8500 TEUs)

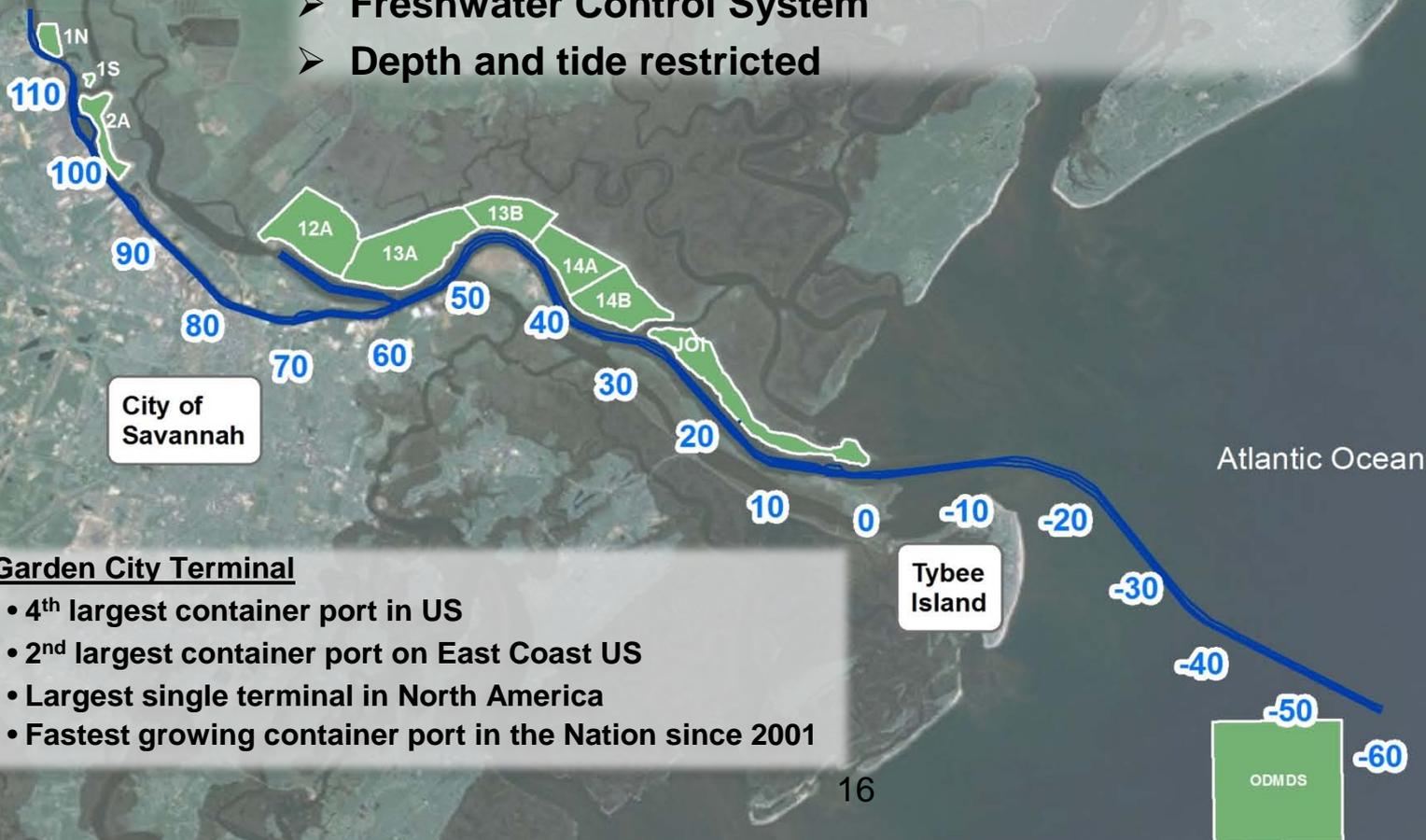


Savannah Harbor Location



Existing Project

- 42-ft Navigation Channel
- 32.7 miles long
- 7 Turning Basins
- 7 Confined Disposal Facilities, 5,305 ac
- Offshore Dredged Material Disposal Site, 4.26 sq mi
- Freshwater Control System
- Depth and tide restricted

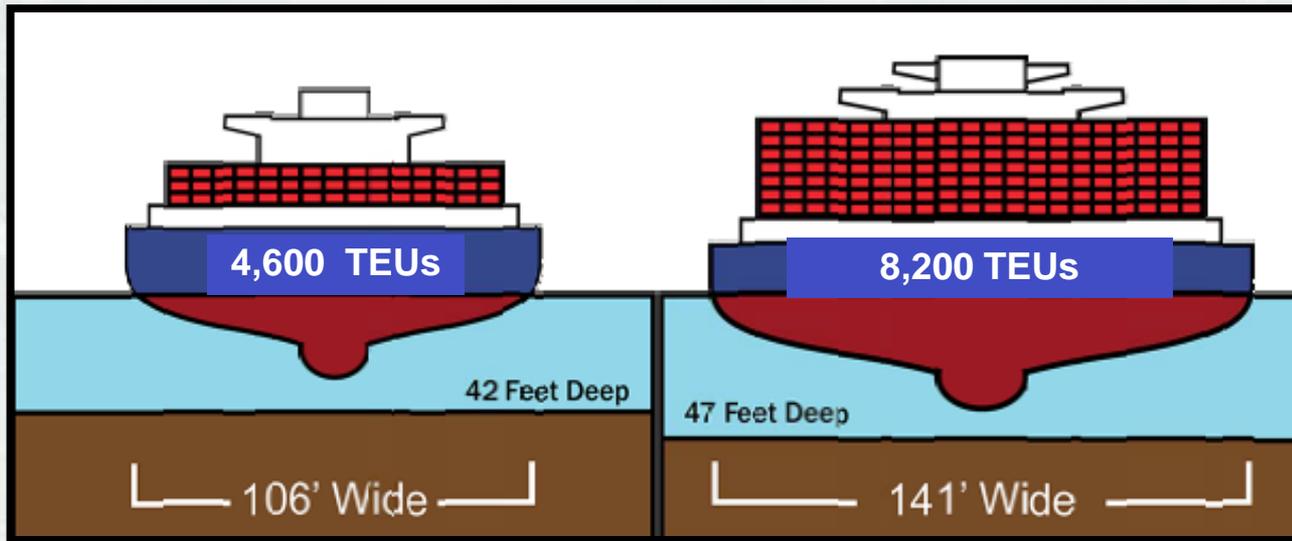


Garden City Terminal

- 4th largest container port in US
- 2nd largest container port on East Coast US
- Largest single terminal in North America
- Fastest growing container port in the Nation since 2001

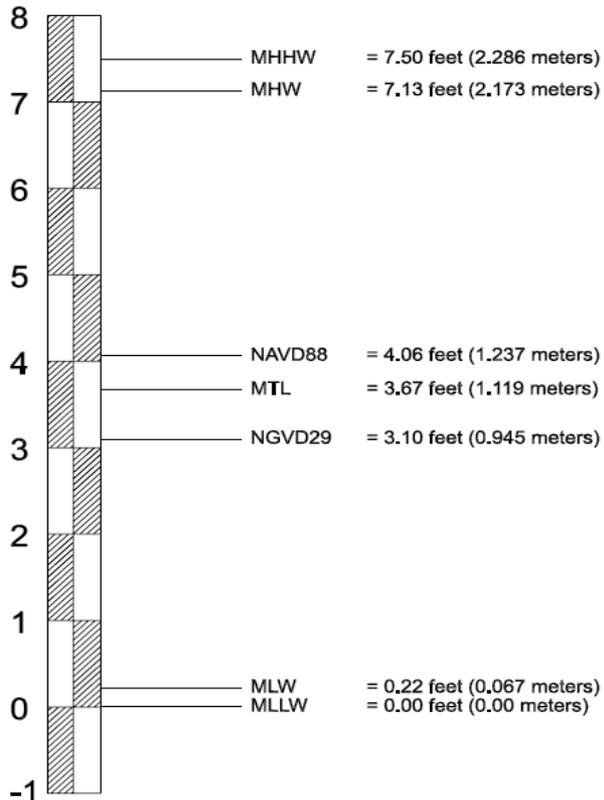
Project Objectives

- Improve the efficiency of moving goods through Savannah Harbor
- Reduce tidal constraints
- Avoid, minimize and mitigate impacts to maximum practicable extent



MLLW Datum

Elevation Information for Fort Pulaski, Savannah River Georgia NOAA Station ID: 8670870



- Project studies and designs use MLLW datum.
- Conversions were based on NOAA Reference Benchmark Gage, Savannah River at Fort Pulaski, as shown at left.

MHHW (Mean Higher High Water): The average of the higher high water height of each tidal day observed over the NTDE.

MHW (Mean High Water): The average of all the high waters heights observed over the NTDE.

MTL (Mean Tide Level): The arithmetic mean of MHW and MLW.

MLW (Mean Low Water): The average of all the low water heights observed over the NTDE.

MLLW (Mean Lower Low Water): The average of the lower low water height of each tidal day observed over the NTDE.

NTDE (National Tidal Datum Epoch): The specific 19-year period adopted as the official time segment over which tide observations are taken and reduced to obtain mean values for tidal datums. The present NTDE is 1983 through 2001.

* source: http://tidesandcurrents.noaa.gov/datum_options.html



Climate Change

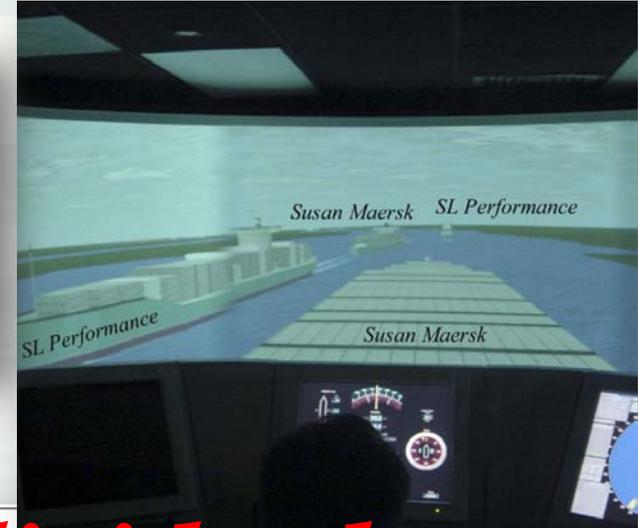
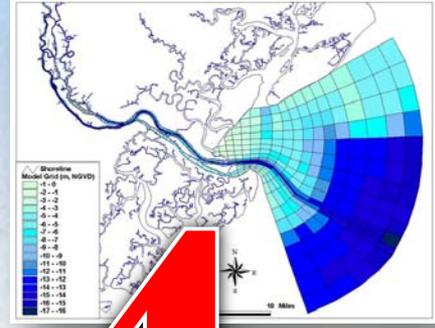
- In accordance with Engineering Circular 1165-2-212 (Oct 2011), “Sea Level Change Considerations,” a risk based analysis was performed for each alternative based on low, intermediate and high rates.
- Corps guidance (Jul 2010) includes a requirement to evaluate all impacts from sea level rise, to use an average annual approach, and to use the most likely future condition.
- In accordance with ASA (CW)’s 28 Nov 2011 memo, ASA (CW) policy waiver will allow wetland mitigation based on the level of impacts expected to occur in the project base year, as coordinated with the Cooperating Agencies, rather than using an average annual basis allow the most protection for the environment.



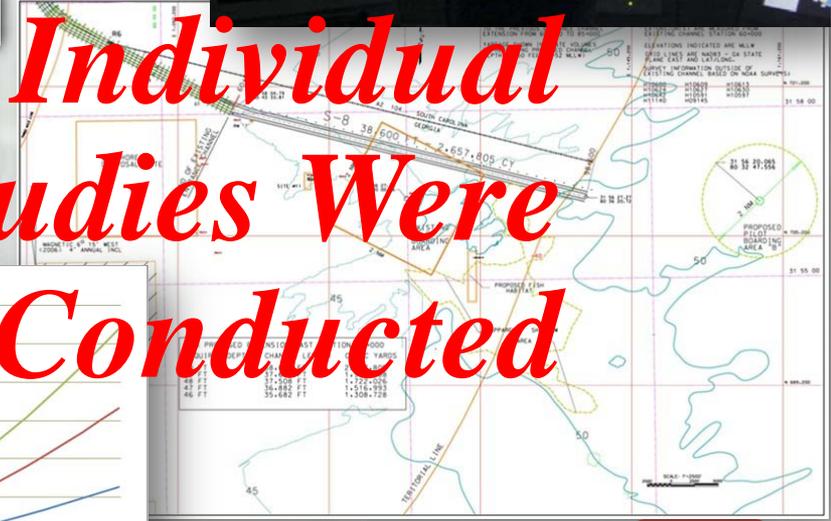
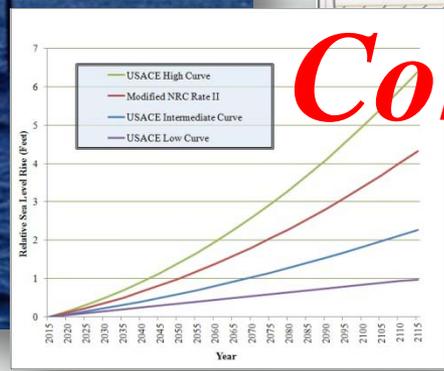
Engineering Overview



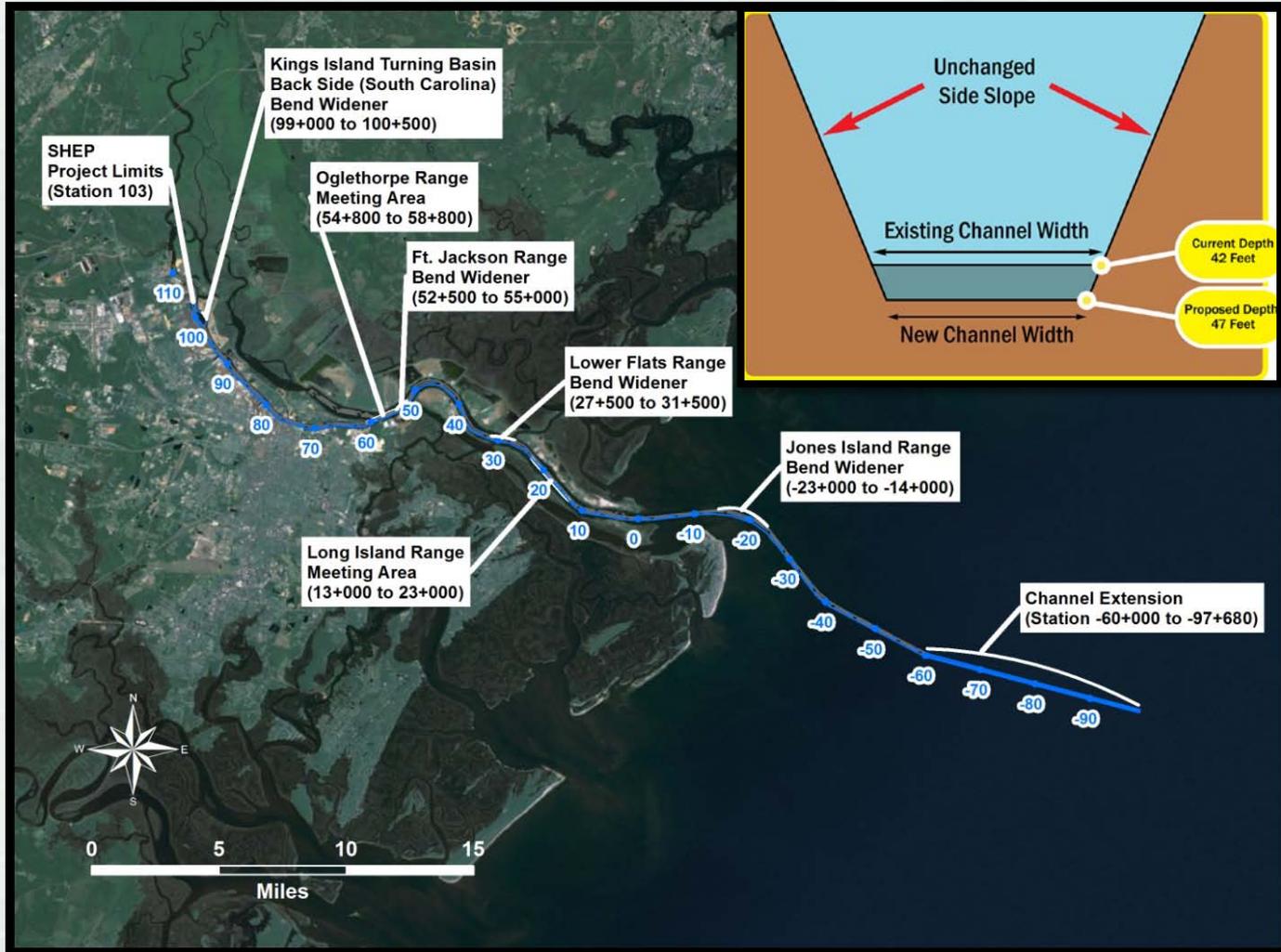
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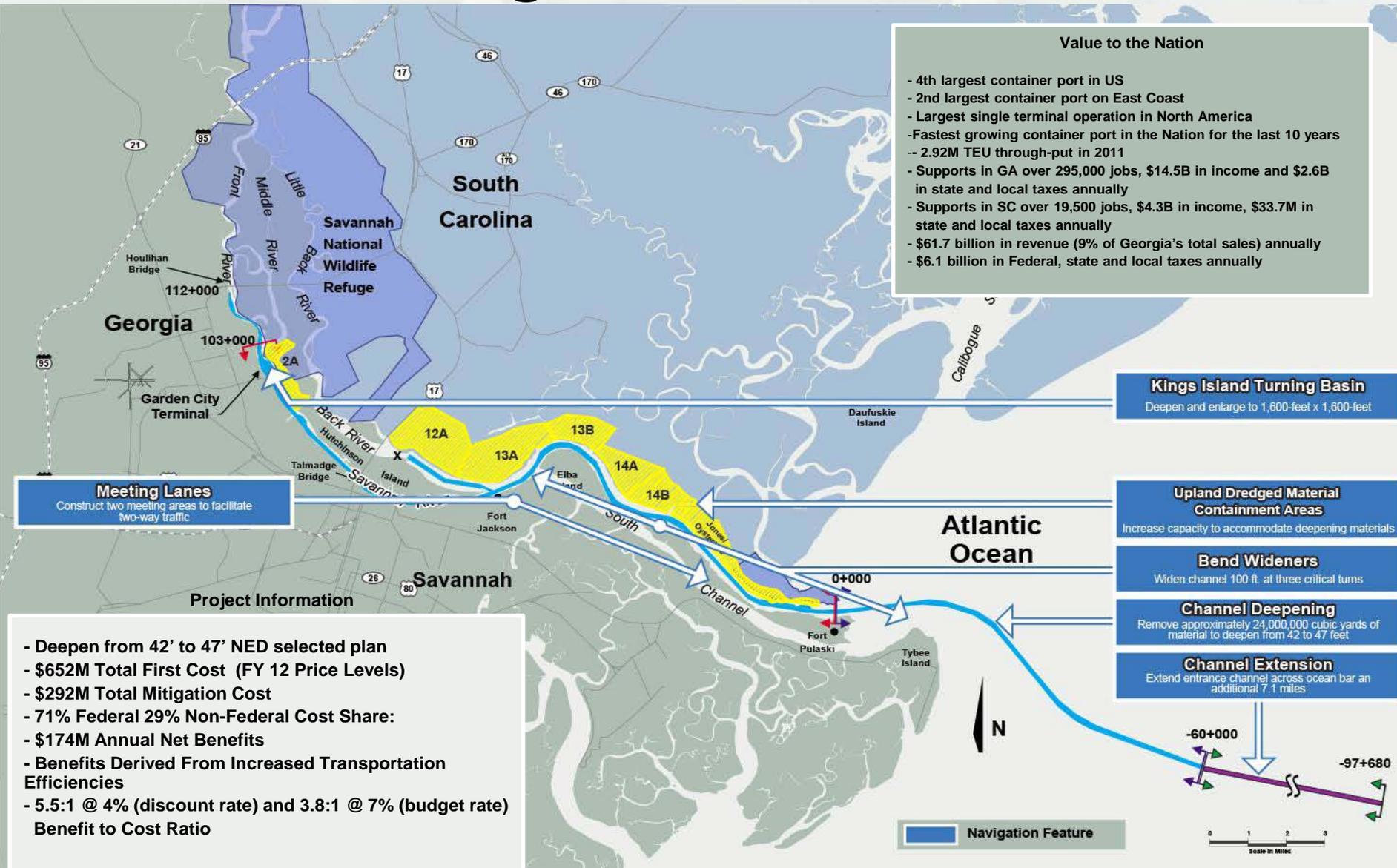
Individual Studies Were Conducted



Key Engineering Features



Navigation Features



Value to the Nation

- 4th largest container port in US
- 2nd largest container port on East Coast
- Largest single terminal operation in North America
- Fastest growing container port in the Nation for the last 10 years
- 2.92M TEU through-put in 2011
- Supports in GA over 295,000 jobs, \$14.5B in income and \$2.6B in state and local taxes annually
- Supports in SC over 19,500 jobs, \$4.3B in income, \$33.7M in state and local taxes annually
- \$61.7 billion in revenue (9% of Georgia's total sales) annually
- \$6.1 billion in Federal, state and local taxes annually

Kings Island Turning Basin
 Deepen and enlarge to 1,600-feet x 1,600-feet

Upland Dredged Material Containment Areas
 Increase capacity to accommodate deepening materials

Bend Wideners
 Widen channel 100 ft. at three critical turns

Channel Deepening
 Remove approximately 24,000,000 cubic yards of material to deepen from 42 to 47 feet

Channel Extension
 Extend entrance channel across ocean bar an additional 7.1 miles

Meeting Lanes
 Construct two meeting areas to facilitate two-way traffic

Project Information

- Deepen from 42' to 47' NED selected plan
- \$652M Total First Cost (FY 12 Price Levels)
- \$292M Total Mitigation Cost
- 71% Federal 29% Non-Federal Cost Share:
- \$174M Annual Net Benefits
- Benefits Derived From Increased Transportation Efficiencies
- 5.5:1 @ 4% (discount rate) and 3.8:1 @ 7% (budget rate) Benefit to Cost Ratio

Environmental Overview



Savannah National Wildlife Refuge

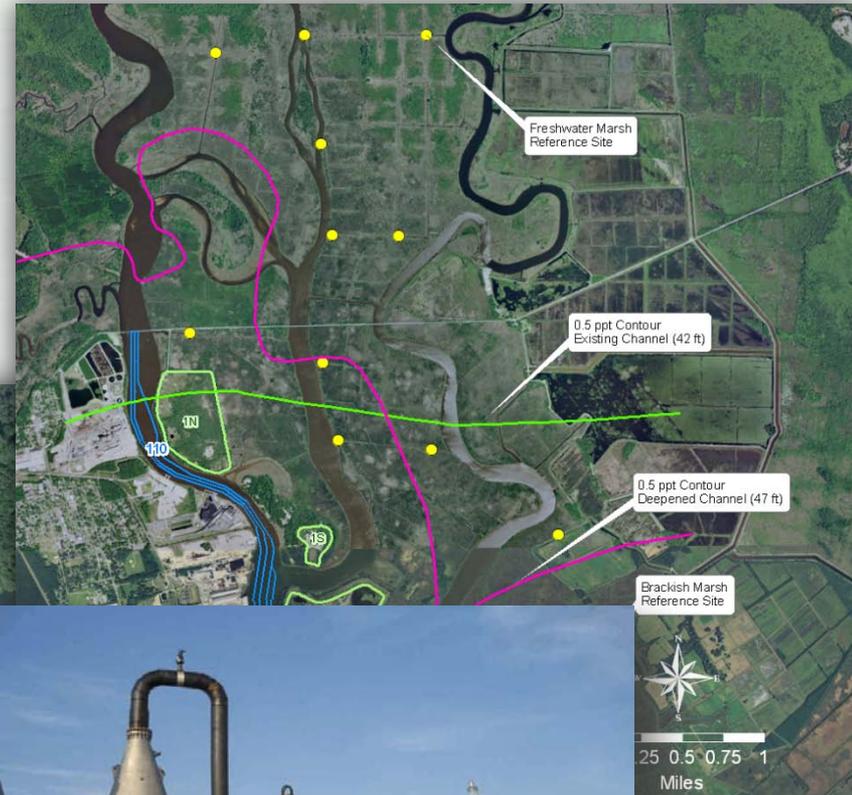
Source: <http://www.flickr.com/photos/dizzygirl/2208051438/>



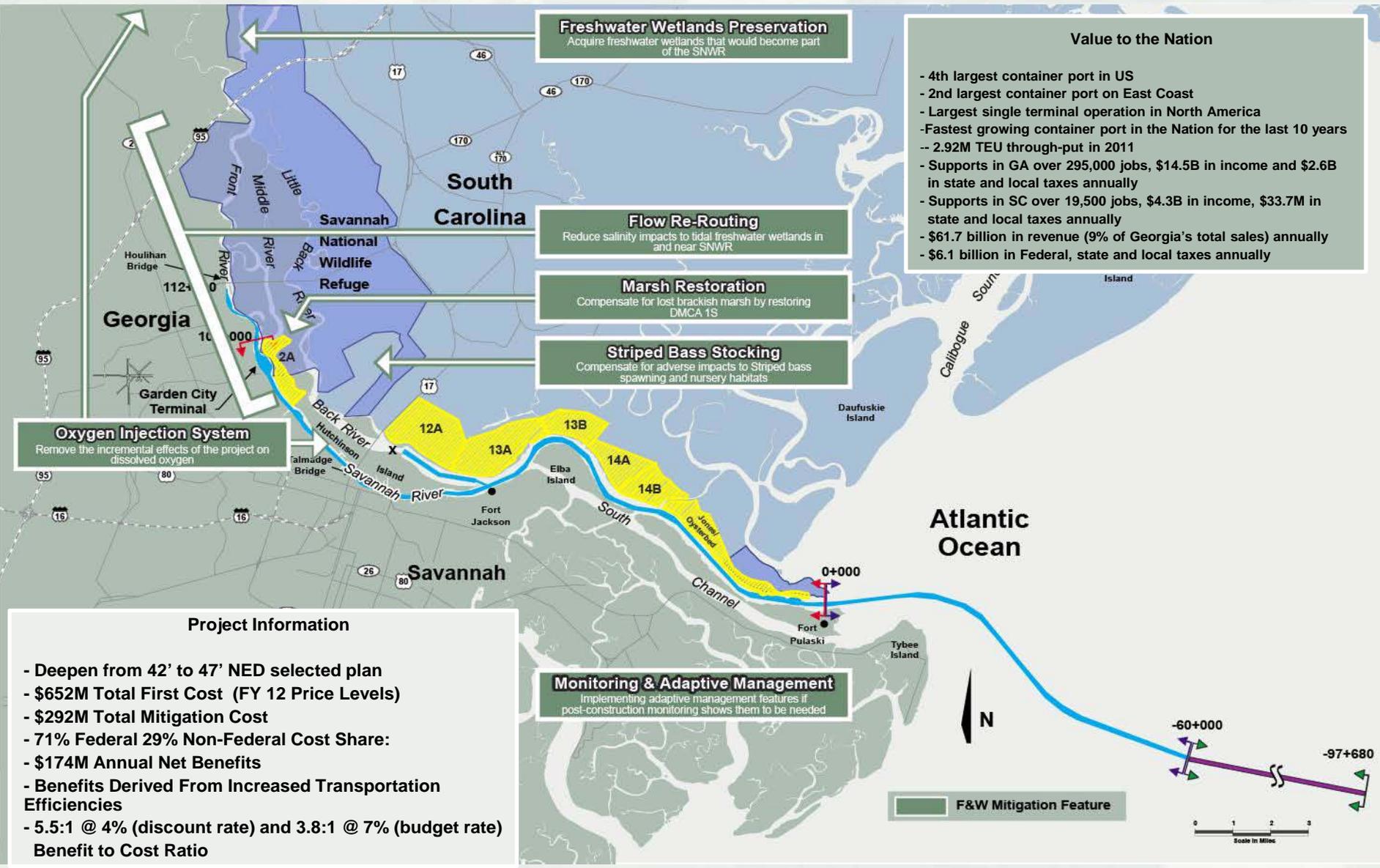
Key Environmental Features

Impact Analyses

- Endangered Species
- Wetlands
- Water Quality



Mitigation Features



Freshwater Wetlands Preservation
Acquire freshwater wetlands that would become part of the SNWR

Flow Re-Routing
Reduce salinity impacts to tidal freshwater wetlands in and near SNWR

Marsh Restoration
Compensate for lost brackish marsh by restoring DMCA 1S

Striped Bass Stocking
Compensate for adverse impacts to Striped bass spawning and nursery habitats

Value to the Nation

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Oxygen Injection System
Remove the incremental effects of the project on dissolved oxygen

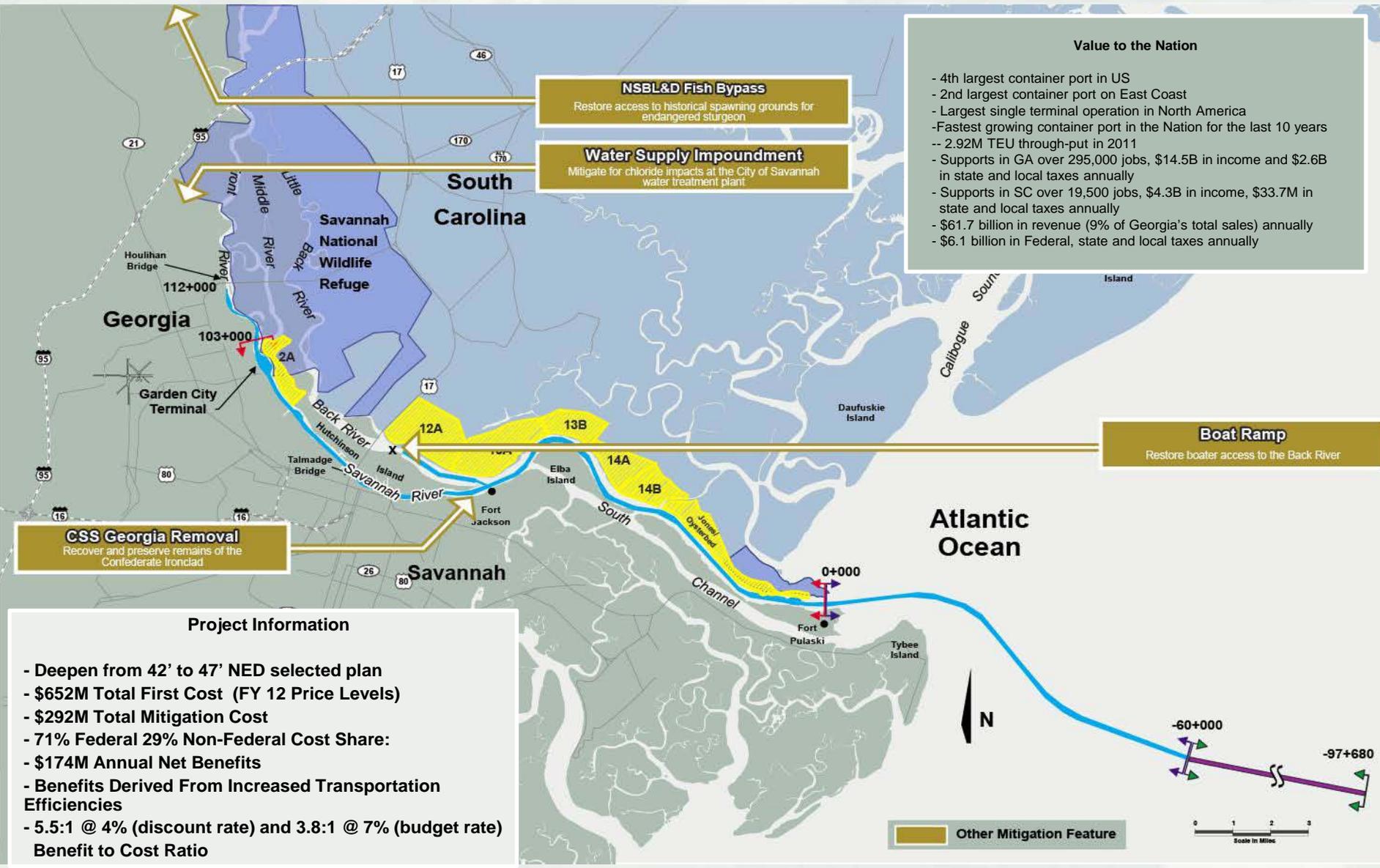
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Monitoring & Adaptive Management
Implementing adaptive management features if post-construction monitoring shows them to be needed

F&W Mitigation Feature

Other Mitigation Features



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NSBL&D Fish Bypass
Restore access to historical spawning grounds for endangered sturgeon

Water Supply Impoundment
Mitigate for chloride impacts at the City of Savannah water treatment plant

Boat Ramp
Restore boater access to the Back River

CSS Georgia Removal
Recover and preserve remains of the Confederate Ironclad

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Wetland Mitigation

Depth	Freshwater Wetland Impacts (Acres)	Salt Marsh Impacts (Acres)	Freshwater Wetland Preservation (Acres)
47-Foot	223	740	2,245



- To mitigate the conversion of 223 acres of tidal freshwater wetland to brackish marsh and 740 acres of salt marsh to brackish marsh, 2,245 acres of freshwater wetlands would be acquired and provided to the Savannah National Wildlife Refuge
- To mitigate the excavation of 16 acres of tidal brackish marsh, 28 acres of tidal brackish marsh would be restored



Economic Overview

- **Vessel Fleet Projections**
- **Sailing Draft Distribution**
- **Commodity Projections**
- **Multi-Port Analysis**
- **Regional Port Analysis**
- **HarborSym for Vessel Queuing**
- **Vessel Loading Analysis**
- **Transportation Cost Savings Model**
- **18 Sensitivity Analyses Conducted**



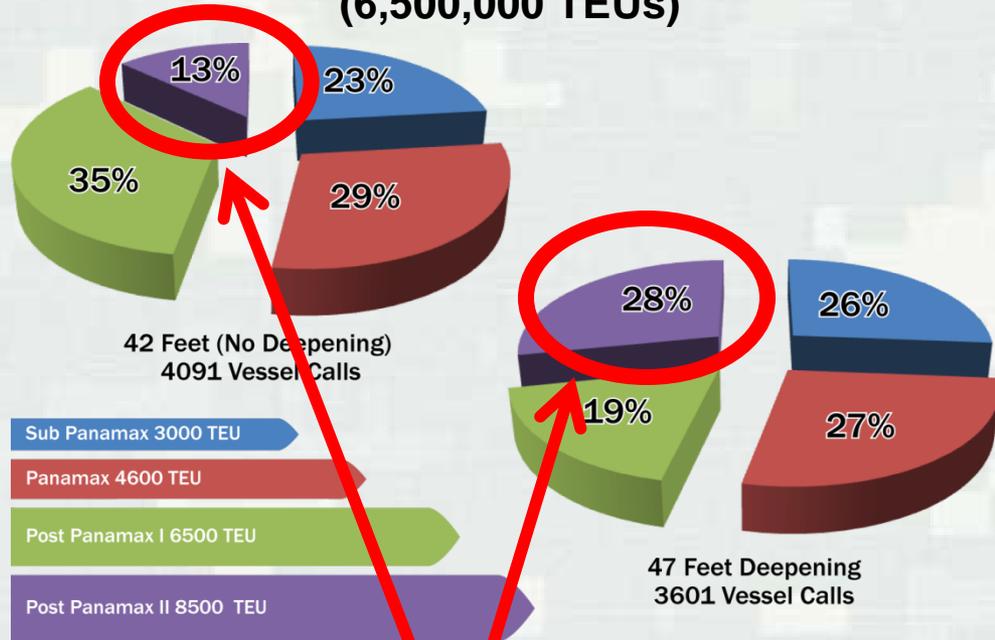
Key Economic Findings

TEU Projections



Garden City Terminal Reaches Maximum TEU through-put Capacity in 2030

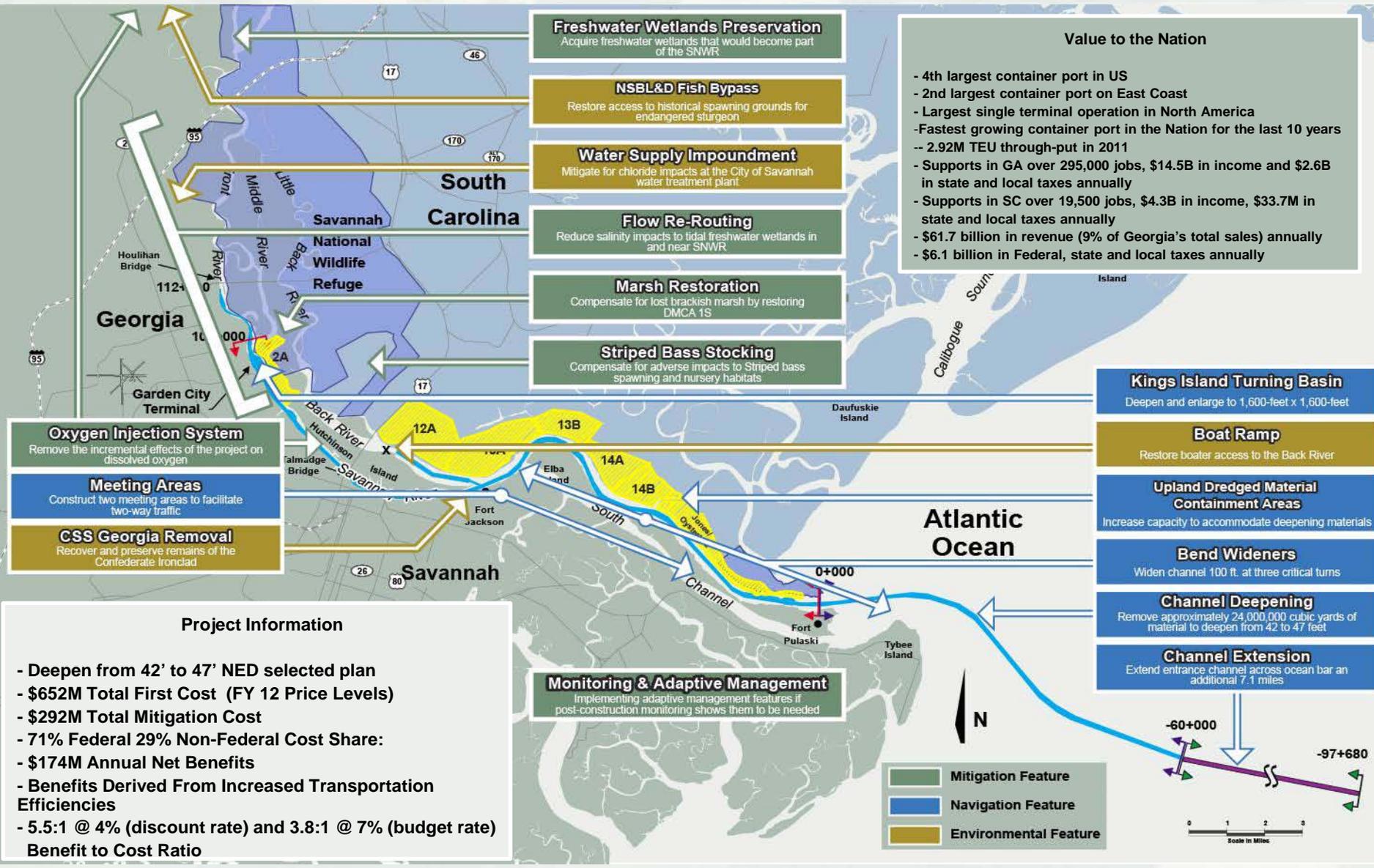
2030 Container Fleet (6,500,000 TEUs)



With deepening, increased proportions of more efficient Post-Panamax Generation II vessels call at Savannah



47' NED Selected Plan



- Freshwater Wetlands Preservation**
Acquire freshwater wetlands that would become part of the SNWR
- NSBL&D Fish Bypass**
Restore access to historical spawning grounds for endangered sturgeon
- Water Supply Impoundment**
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 - Benefit to Cost Ratio**

Monitoring & Adaptive Management
Implementing adaptive management features if post-construction monitoring shows them to be needed

- Mitigation Feature
- Navigation Feature
- Environmental Feature



Cost Summary

47' NED Selected Plan Cost	Amount in Millions
Channel modification and dredged material placement	\$257
Fish, Wildlife & Wetlands mitigation features	\$221
Other mitigation features	\$71
Lands Easements Rights of Way Relocations (LERRs)	\$19
Pre-Eng and Design (including \$41M sunk costs)	\$69
Construction Management	\$15
Total	\$652

Note: The project has a Benefit Cost Ratio of 5.5 to 1 and mitigation and environmental features are 45% of the Project First Cost.



Cost Share

FY 12 Costs	Federal	Non-Federal	Total
General Navigation Features	461	185	646
LERRs	0	6.0	6.0
Project First Cost	461 (70.7%)	191 (29.3%)	652 (100%)

FY 12 Price Levels in \$1,000,000's



Annual Incremental Cost Increase to O&M

O&M Feature	Federal	Non-Federal	Total
Oxygen Injection System	1,083	154	1,237
Inner Harbor O&M Dredging	2,730	0	2,730
Channel Extension	49.7	0.5	50.2
Mitigation Features Dredging	116	0	116
CSS Georgia Removal & Curation	20	0	20
Fish Passage O&M	51	0	51
Long Term Monitoring	438	0	438
Total	4,488	154.5	4,643

FY 12 Price Levels in \$1,000's



Schedule

Milestone	Date
Savannah District transmits final GRR to SAD	17 Jan 2012 (A)
SAD completes Quality Assurance Review of GRR and endorses final GRR to HQUSACE	17 Feb 2012 (A)
Civil Works Review Board	22 Mar 2012 (A)
Publish Final GRR/EIS in Federal Register for final NEPA review	20 Apr 2012
Cooperating Agencies Approve Project	8 Jul 2012
HQUSACE finalizes and transmits Washington level report to OASA(CW)	20 Jul 2012
OMB Approval, OASA (CW) signs ROD with recommendation to Congress	21 Nov 2012
Congressional Reauthorization of Project Cost (Section 902 Fix)	TBD
Project Partnership Agreement Executed	~1 Month Post Auth
First Construction Contract Awarded	~3 Month Post Auth
Channel Improvements Complete (Unconstrained Funding)	~4 Years Post Auth
Construction Phase Complete (Monitoring & Adaptive Mgt)	10 Years Post Deepening



Draft Report Review Comments

25 Jan 2011 – The public comment period on the Draft Report and EIS ended.

2,558 Public, State & Agency comments categorized as follows:

- 352 Economic Issues
- 260 Engineering Issues
- 333 Endangered Species, Monitoring & Adaptive Management
- 934 Other Environmental
- 679 Support Construction

17 Jan 2012 – Comments were resolved and the final report documents were completed.

13 Feb 2012 – SAD's review, comment resolution, and report updates were completed.

16 Feb 2012 – The Georgia Department of Transportation (non-Federal sponsor) provided a letter of support for the 47-foot Selected Plan. The Georgia Ports Authority is the local interest and has an agreement to assist in the non-Federal funding of construction through the GDOT.

The Federal Cooperating Agencies have concurred in the release of the final report for State & Agency Review.

Final Report ATR Review Comments



ATR Team reviewed the Final GRR/EIS.



Team identified 47 comments. None designated "Significant" by reviewers.



PDT revised reports to address the comments.



**10 ATR Economic comments were elevated to HQUSACE to address during Policy Review.
ALL RESOLVED**



Summary of Independent External Peer Review (IEPR)

Preliminary review conducted on Economic Benefit Methodology and Cost Estimates.

- No significant issues raised
- District responded to comments in Draft GRR & EIS



Review completed in February 2011.



IEPR team provided 25 comments.

- Team reviewed Draft GRR & EIS
- Team reviewed updated Chloride Impact Analysis
- Team reviewed public comments
- Team identified: 17 Low, 8 Medium, 0 Significant



IEPR accomplished.



CESAS has prepared draft HQUSACE responses.

Model Reviews

Engineering Models

#	Model	Comments
1	STWAVE	Preferred
2	WIS	Preferred
3	HEC-RAS	Preferred
4	ADCIRC	Preferred
5	GENESIS	Preferred
6	UTEXAS3	Preferred
7	TABS-MD	Preferred
8	SSFATE	Approved For Use
9	MCACES	Approved For Use
10	HEC-DSSVue	Approved For Use

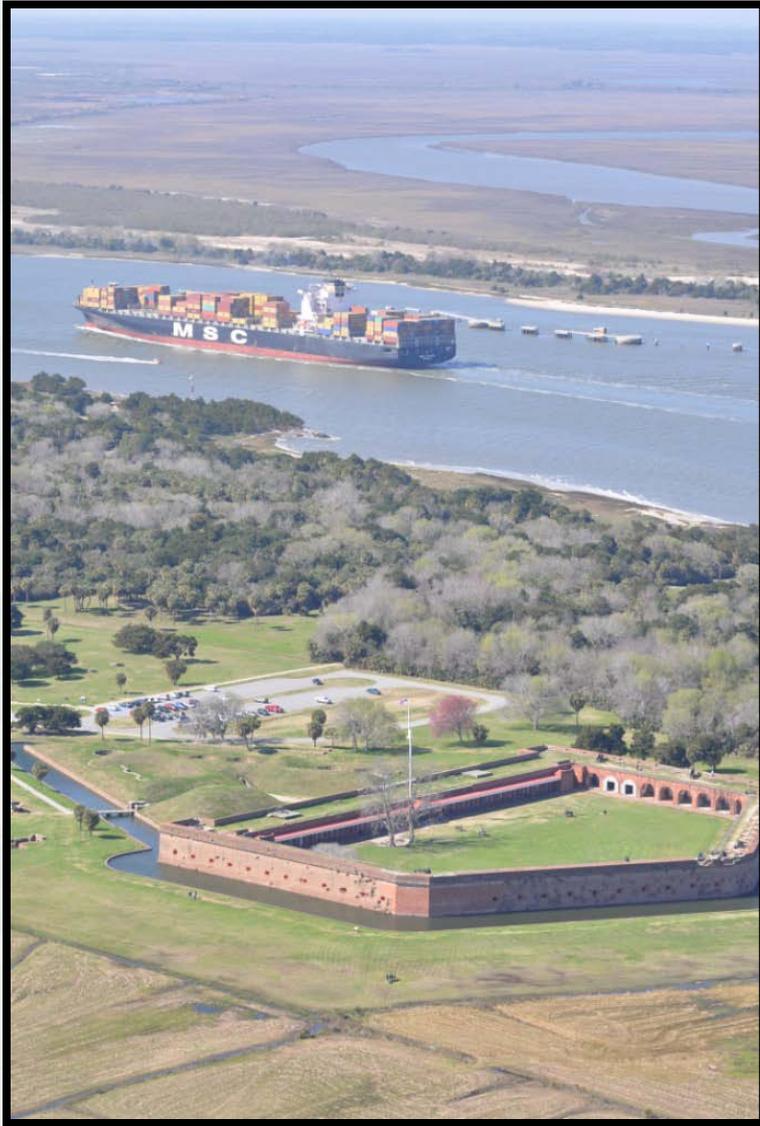
#	Model	Comments
11	WISWAVE	Approved For Use
12	WASP	Approved For Use
13	EFDC	Approved For Use
14	ANN	Approved For Use
15	CSC Virtual Ship	Approved For Use
16	GTRAN	Approved For Use
17	D-CORMIX	Approved For Use
18	CADET	Approved For Use
19	DGSLOPE	Approved For Use
20	DYNCFT	Approved For Use

Planning Models

#	Model	Comments
1	Wetland SOP	Approved For Use
2	TCSM	Certified 1 Mar 2011
3	HarborSym	Certified 10 Jun 2011



Summary of Environmental Effects



Project features adequately mitigate for:

- **Loss of 16 AC of brackish marsh**
- **Conversion tidal marshes**
 - 223 AC of freshwater marsh to brackish marsh
 - 740 AC of salt marsh to brackish marsh
- **Loss of fish habitat**
 - 7% loss in shortnose sturgeon winter habitat
 - 10% loss in striped bass spawning habitat
- **Impacts to dissolved oxygen**
- **Impacts to drinking water**

Other project effects:

- **Gain in southern flounder habitat (57%)**
- **Gains in dissolved oxygen**



Environmental Clearances

➤ **Endangered Species Act**

- USFWS Concurrence Report (28 April 2011)
- NMFS Biological Opinion (04 November 2011)

➤ **Clean Water Act**

- Georgia Water Quality Certification (16 February 2011)
- South Carolina Water Quality Certification (15 November 2011) ^{1,2}

➤ **Coastal Zone Management Act**

- Georgia Federal Consistency Determination (25 January 2011)
- South Carolina Federal Consistency Determination (15 November 2011) ¹

➤ **National Historic Preservation Act**

- Georgia Compliance Letter (21 November 2011)
- South Carolina Compliance Letter (30 November 2011)

1. SC 401/CZM are subject of appeal by Conservation Groups (SELC) and the Savannah River Maritime Commission (SRMC).

2. SC recently passed a law that may overturn the 401.



Summary of Other Social Effects

➤ Minimal Other Social Effects

➤ Air Quality

- Corps expects container volume to increase in the without project condition
- Expected increases in container volume would also lead to increases in traffic
- Expected increases to container volume and traffic are no greater with deepening

➤ Environmental Justice

- 2010 census data shows demographics are similar for the area surrounding the Garden City Terminal and Chatham and Jasper counties.
- Therefore, no disproportionate effects to low-income, minority, or children.



Support of the Environmental Operating Principles



- Expended great time & effort considering potential environmental consequences
- Wetland mitigation plan focuses on protecting wetlands in Savannah National Wildlife Refuge
- Balance and synergy between human activities and natural systems
- Established Interagency Coordination Teams to provide technical guidance
- Participated in extensive public involvement program (Stakeholder Evaluation Group)



Support of the Campaign Plan

Goal 2. Engineering Sustainable Water Resources:

Deliver enduring and essential water resource solutions through collaboration with partners and stakeholders.

- Regional offices of critical federal agencies served as Cooperating Agencies on development of the EIS
- Established and used Interagency Coordination Teams to discuss potential project effects on important natural resources.
- Sought the views of local stakeholders through a Stakeholder Evaluation Group that was organized by the Georgia Ports Authority
- Landside infrastructure supports expected growth in container volume over time

Goal 3. Delivering Effective, Resilient, Sustainable Solutions:

Deliver innovative, resilient, sustainable solutions to the Armed Forces and the Nation through innovative tools and reducing risks.

- Economic benefit models have become the standard for the Corps
- Reduced risk during the study
- Included multiple sensitivity analyses (benefits, sea level rise, environmental)
- Included comprehensive cost risk analysis

Goal 4. Recruit and Retain Strong Teams:

Build and cultivate a competent, disciplined, and resilient team equipped to deliver high quality solutions.

- PDT members became staff of Deep-Draft Navigation Planning Center of Expertise
- SAS, SAD and HQ Planning COP gained valuable experience through this complex project



Risk Management

➤ Study Phase

- The Cost Center of Expertise completed a Cost Risk Analysis, determined a 25% contingency should be included and certified the costs.
- Evaluated environmental impacts using validated predictive tools, multiple scenarios, and coordinated with other resources agencies throughout the study process (example: rates of sea level rise)
- VE Study, DQC, ATR, and IEPR completed with all improvements incorporated

➤ Construction Phase

- All contract actions are being evaluated to determine best acquisition strategies to minimize costs and increase quality
- A Planning Engineering & Design / Construction Phase Review Plan is currently under review within the Savannah District and will be provided to SAD for approval in Apr 2012 and post to the district website
- P&S for major project features will undergo DQC, ATR, VE & BCOE
- Anticipate a Type II IEPR will not be warranted for any features since no life safety concerns have been identified for this navigation project



Summary

- **This project authorization is unique**
 - Requires approval of 4 Federal agencies to implement (high standard)
 - Corps evaluated it extensively (12 years, >\$40M)
- **Developed a comprehensive mitigation plan (\$292M or 45% of project cost)**
- **Includes extensive monitoring and adaptive management**
- **Selected Plan (47-foot alternative) is well justified**
 - Benefit to Cost Ratio of 5.5 to 1
 - Project First Cost \$652 M at FY 12 levels yields \$213 M in total annual benefits
 - Annual O&M costs increase from \$22 M to \$27 M
 - Environmental impacts would be mitigated to an acceptable level
- **SHEP supports the Administration's priorities**



Gateway to American Commerce

Civil Works Review Board
Washington, DC

March 22, 2012



National Economic Impact of Georgia's Deepwater Ports



- Serves approximately 21,000 companies in all 50 states, 75% headquartered outside of Georgia
- \$3.5 billion in federal taxes*
- 8.7% of U.S. containerized trade**
- 18% of U.S. East Coast trade
- 12.5% of U.S. containerized exports**

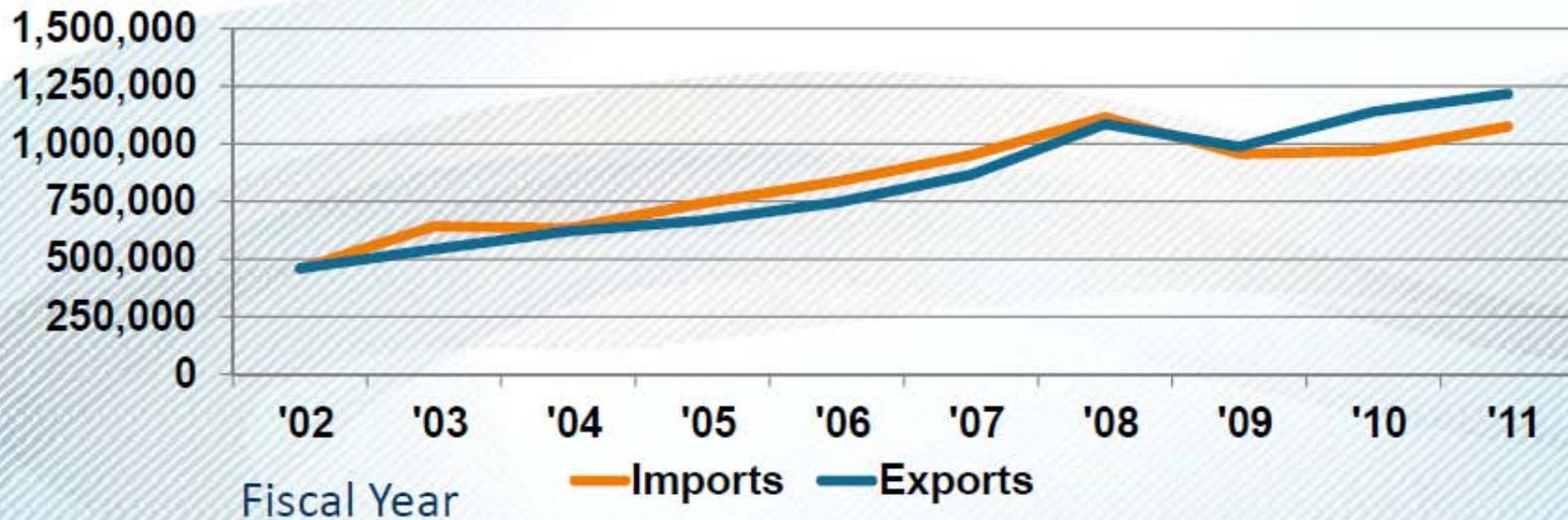
Supporting the U.S. Export Initiative

Import vs. Export Trade Volumes

Fiscal Year 2011

Exports = 1,216,292 (53%)
U.S. Total = 43%

Imports = 1,074,893 (47%)
U.S. Total = 57%



Capital Investment

Technology Projects	\$ 67,950,000
GCT Berth Upgrades	\$ 62,219,000
GCT Container Storage/Support	\$ 78,617,000
GCT Equipment	\$ 366,050,000
GCT Intermodal & Gate Projects	\$ 109,063,000
GCT Facility Projects	\$ 38,370,000
Infrastructure Reserve	\$ 167,500,000
Annual Reserve/Future Projects	<u>\$ 330,969,000</u>
Total GPA Projects	\$ 1,220,738,000
Savannah Harbor Expansion	
Project (SHEP)	<u>\$ 260,000,000</u>
Grand Total	\$ 1,480,738,000

The Beltway

■ Jimmy DeLoach PKWY

- ▶ DOT approved state bonds for \$121 M
- ▶ Direct access from GCT to I-95
- ▶ 3.1 miles, 4-lane parkway
- ▶ Will relieve traffic & enhance safety on GA21

■ Grange Road widening

■ 307 Overpass

■ Brampton Rd. Connector



Port of Savannah – Prepared for the Future

- Savannah continues to be the port of choice in the Southeast
- Economic impact spreads throughout the nation
- Balanced import and export cargo volumes
- Terminal, roads and rail will be in place to handle future expected cargo
- Administration support in the President's FY12 & FY13 budgets
- \$134 million in state funds approved with another \$46.7 million proposed by Governor for FY13

Environmental Protection Agency (Dr. Stan Meiburg)



US Fish and Wildlife Service (Dr. Rowan Gould)



National Oceanic & Atmospheric
Administration/
Department of Commerce
(Ms. Monica Medina)



MSC Support (MG Todd T. Semonite)



South Atlantic Division Rationale for Supporting Recommendation

- Study Accomplished through Multiple Agency Involvement
- Transparent Process
- NED Plan provides positive economic-environmental benefits
- NED Plan Supported by Non-Federal Sponsor and other agencies
- Mitigation measures supported by Cooperating Agencies
- Report Complies with HQ Policy Guidance and Requirements



South Atlantic Division Recommendation

- Concur with Findings and Recommendations of the Savannah District Commander
- Confirm that the report complies with all applicable policy and laws in place at this stage of project development
- Request that report be released for State and Agency Review
- Request that the Chief's Report be completed for Section 902 Approval of Cost Increase



Agency Technical Review (ATR)

- Deep Draft Navigation PCX Review Management Organization
- December 2009, ATR certified. All 143 review comments were resolved and closed.
- April 2011, ATR certified all 162 review comments were resolved and closed
- October 2011 ATR certified all 67 review comments were resolved and closed
- January 2012 ATR certified all 47 review comments were resolved and closed
- January 2012 Cost Engineering DX – TPCS ATR Certification of the Updated NED Plan



Independent External Peer Review (IEPR) – Savannah Harbor Expansion Project General Reevaluation Report

Battelle

Karen Johnson-Young, Program Manager

Lynn McLeod, Project Manager



IEPR – Savannah Harbor

- Three reviews were conducted
 - Pre-IEPR of Economic Information (Special Request)
 - IEPR of GRR and Tier II EIS
 - Review of Revised Documents (RRD) – GRR and Tier II EIS (Special Request)

Panel Members Involved With Each Review	Pre-IEPR	IEPR	RRD
Hydraulic Engineer – <i>Donald Hayes, Ph.D., P.E., D.E.E.</i>		✓	✓
Civil Engineer – <i>John Lally, P.E.</i>		✓	✓
Coastal Environmental Engineer – <i>Michael Poff</i>		✓	✓
Cost Engineer – <i>Deane Fowler, P.E.</i>	✓	✓	✓
Economics – <i>Gretchen Greene, Ph.D.</i>	✓	✓	✓
Plan Formulation – <i>Kenneth L. Casavant, Ph.D.</i>	✓	✓	✓
Real Estate – <i>Ronald Vann, P.E.</i>		✓	✓
Water Quality Engineer – <i>Andy Stoddard, Ph.D.</i>		✓	✓
Environmental Resources and Compliance Scientist - <i>Paul Looney, CEP</i>		✓	✓

IEPR – Savannah Harbor (continued)

- Pre-IEPR of Economic Information – August 2010
 - Cost Engineering Appendix
 - Reviewed by Cost Engineer panel member only
 - Economic Appendix and Transportation Cost Savings Model
 - Reviewed by Economic and Plan Formulation panel members, both of whom are Economists
 - Final Pre-IEPR Report Submitted on August 25, 2010
 - Pre-IEPR Results: 8 Final Panel Comments: 0 high significance; 6 medium significance; 2 low significance
 - Comment/Response Results Documented on April 21, 2011
 - USACE response to Final Panel Comments: 8 “For Information Only” stating that USACE addressed the issues in the documents provided for the IEPR of GRR and Tier II EIS and any unaddressed issues were posted as Final Panel Comments under that review.
 - Panel’s response to USACE: 8 concurs

IEPR – Savannah Harbor (continued)

- IEPR of GRR and Tier II EIS - November 2010 – April 2011
 - Documents Reviewed
 - Savannah Harbor Expansion Project Draft General Reevaluation Report
 - Tier II Environmental Impact Statement
 - Economic Appendix
 - Engineering Appendix
 - Real Estate Appendix
 - Public Comments
 - Final IEPR Report Submitted on February 11, 2011
 - IEPR Results: 25 Final Panel Comments: 0 high significance; 10 medium significance; 15 low significance
 - Comment/Response Results Documented on April 11, 2011
 - USACE response to Final Panel Comments: 16 concurs, 9 non-concurs.
 - Panel’s response to USACE: 24 concurs (including 10 concurs with comment), 1 non-concur

IEPR – Savannah Harbor (continued)

- Review of Revised Documents – March 2012
 - The Panel reviewed the revised GRR and Tier II EIS to confirm that changes USACE stated they would make in their Evaluator Responses were made.
 - The Panel also reviewed the revised GRR and Tier II EIS to determine whether changes made to the document resolved the one Final Panel Comment that remained a non-concur from USACE and the Panel
 - The Panel did not review the revised documents to determine if Public Comments had been addressed
 - Final Review Memo Submitted on March 16, 2012
 - Review Results: 13 Adequate Changes Made, 6 Adequate Changes Made but issues noted; 5 Inadequate Changes Made;
 - Review Results Discussed with USACE on March 19, 2012
 - USACE Response to Review Results: Received March 20, 2012
 - Panel’s response to USACE: Upon review of the responses from USACE, the Panel determined that all but one of the Final Panel Comments were adequately addressed



IEPR – Savannah Harbor (continued)

- **IEPR Resolved Issues**

- Studies/analyses associated with the following technical areas are complete. All issues identified in the Final Panel Comments were addressed.
 - Hydraulic engineering
 - Civil engineering
 - Coastal environmental engineering
 - Cost engineering
 - Economic
 - Plan formulation
 - Real estate
 - Water quality
- Environmental documentation was thorough and addressed most issues.

- **IEPR Unresolved Issue**

- Oxygen Injection for Low Dissolved Oxygen Levels (Final Panel Comment #2)
 - Super oxygenation and potential toxic effects on fish directly related to the injection of pure oxygen into the water column has not been biologically verified.



Break



Office of Water Project Review (Mr. Lee Ware)



HQUSACE POLICY REVIEW CONCERNS

Civil Works Review Board

Savannah Harbor Expansion Study (SHEP)
Chatham Co, GA and Jasper Co, SC

Lee Ware

Office of Water Project Review

Planning and Policy Division

Washington, DC – 22 March 2012



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US Army Corps of Engineers
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HQUSACE Team Reviews:

- AFB was held 28-29 August 2008 with follow on economics meeting in early September 2008.
- Sea Level Change white paper review in September 2009 with back check reviews in January and July 2010.
- FRC Draft Report and DEIS review completed in November 2010, resulting in approval to release.
- Coordination Draft Report and EIS review completed in January 2011.
- Final Feasibility Report/EIS HQUSACE review being completed currently.



Policy Issues from AFB & Draft Report Reviews

- ❑ Future Without Project Conditions
- ❑ Economic Projections and Analyses
- ❑ **Transportation Cost Savings Model**
- ❑ HarborSym Model, Tidal and Queuing Delay Costs
- ❑ **Alternative Sensitivity Analyses**
- ❑ Environmental Compliance
- ❑ Real Estate Plan and Costs
- ❑ Environmental Impacts and Compliance
- ❑ **Sea Level Change, Wetland Impacts**
- ❑ Plan Formulation and Screening of Measures
- ❑ Dredged Material Management Plan
- ❑ Mitigation Plans, CE/ICA
- ❑ **Total Project Costs**
- ❑ Cost Engineering, MCACES
- ❑ **Operations and Maintenance Costs**
- ❑ Value Engineering
- ❑ **Project Cost Sharing**
- ❑ Agency Technical Review and IEPR
- ❑ Model Approvals and Certification
- ❑ Editorial (Terms, displays, grammatical errors, etc.)



Transportation Cost Savings Model (TCSM)

CONCERN: One of the AFB concerns on the TCSM included how it relied on the maximum practical capacity (MPC) assumptions for vessel loadings and costs and whether that implied that all vessels are sailing at the maximum practicable loaded depth. It was unclear if there was a disconnect between the container fleet draft distribution derived in the TCSM and the draft distribution used in the HarborSym analyses.

REASON: Economic analyses should consider empirical data and actual operating practices as a basis for modeling.

RESOLUTION: The final report includes an expanded discussion of how the load factor analysis is used and how MPC is determined and used in the analysis. The TCSM doesn't assume all vessels sail at MPC. That is used to estimate the share of Savannah cargo on average and to capture vessel loadings among trade routes and reaction to channel depth changes. TCSM is used to estimate transportation costs and benefits along ocean trade routes from the Savannah entrance. HarborSym evaluates the vessel costs within Savannah Harbor.

RESOLUTION IMPACT: The concern is resolved.



Alternative Sensitivity Analyses

CONCERN: Several economic concerns were raised during the policy reviews regarding sensitivity analyses to address the uncertainty of commodity projections, the container fleet distribution, vessel deployment and operations, and cargo loading considering the effects of the ongoing Panama Canal expansion.

REASON: NED benefit analyses can be highly sensitive to assumptions regarding projected future container traffic (vessel operations, deployments, commodity tonnage, and growth rates). Uncertainty of benefits is evaluated using sensitivity analyses. (E-9, ER 1105-2-100)

RESOLUTION: SAS conducted seventeen sensitivity analyses that included various assumptions for commodity growth, vessel deployment, cargo loadings and density, and share of Savannah cargo by trade routes in order to assess the effect on benefits and plan optimization. In nearly all cases the sensitivity showed that the 47-foot depth plan was the optimum depth plan.

RESOLUTION IMPACT: Concerns have been resolved.



Sea Level Change and Wetland Impacts

CONCERN: The AFB materials evaluated wetland impacts and mitigation requirements based on the initial impact at the time of construction. However, during the period of analysis sea level rise would be expected to impact the wetlands, resulting in a lesser amount of mitigation when considered on an annual basis.

REASON: Mitigation is to be justified using Cost Effectiveness and Incremental Cost Analysis (CE/ICA) based on an evaluation of average annual impacts over the period of analysis. (C-3.e. of ER 1105-2-100).

RESOLUTION: A waiver package was developed and processed to OASA(CW) to allow wetland mitigation plans to be based on the impacts during the initial construction rather than an on an annual basis over the period of analysis. This was approved in 28 November 2011.

RESOLUTION IMPACT: The concern is resolved.



Total Project Costs for Authorization

CONCERN: The final report included the associated project costs (Local Service Facilities and Navigation Aids) in the total project costs for authorization.

REASON: Although associated project costs are NED costs that are included in the economic analysis, they are not included in the project costs for authorization, which forms the basis for future cost limit calculations per Section 902 of WRDA 1986. General Navigation Features (GNF) and Lands, Easements, Rights of Way, and Relocations (LERR) are included in the authorized project costs.

RESOLUTION: The report was revised to clarify the project costs for authorization. Project costs and cost sharing values were revised to reflect only the GNF and LERR costs.

RESOLUTION IMPACT: The concern is resolved.



Operation & Maintenance Costs

CONCERN: The AFB materials showed some unusual relationships between the O&M costs for the various project mitigation features including the dissolved oxygen measures. This raised questions as to whether the appropriate O&M costs were used in the analysis as a basis for plan optimization.

REASON: O&M is an important consideration in evaluating and comparing the NED costs of alternatives. It can have a significant impact on project optimization since it is an annual cost. (Section D-3 of ER 1105-2-100)

RESOLUTION: The district reexamined the O&M requirements for each feature of the mitigation plan and provided an expanded explanation of the cost trends shown for the various project depths.

RESOLUTION IMPACT: Concern Resolved.



Project Cost Sharing

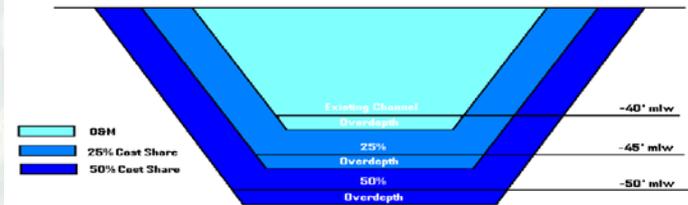
CONCERN: The AFB material and draft GRR incorrectly included associated costs in the cost sharing calculations. Also, calculations of blended cost sharing by depth zones, treatment of mitigation lands, and O&M cost sharing for incremental depths over 45 feet needed clarification.

REASON: Cost sharing percentages vary based on project depth zones (WRDA 1986, as amended) and are applied to General Navigation Features (GNF) based on depths in MLLW. Special rules apply to cultural mitigation. Mitigation lands are cost shared similar to GNF. Incremental O&M costs for depths over 45 feet are cost shared 50%/50%.

RESOLUTION: The report was revised to address blended cost sharing of items treated as GNF including mitigation lands and the O&M cost sharing.

RESOLUTION IMPACT: The concern is resolved based revisions to the final report.

EXAMPLE OF BLENDED COST SHARING
Existing Project 40' Depth, New Project 50' Depth



HQUSACE POLICY REVIEW TEAM RECOMMENDATION

**Release the report and EIS for State &
Agency Review**



Board Discussion and Decision



Lessons Learned - CESAS

- Utilize existing models (such as hydrodynamic and water quality models)
- Created a new economic model for USACE
- Conduct parallel reviews rather than sequential
- DDN PCX increases the technical reliability of the product
- Sought and applied lessons learned from NY and DE deepening projects



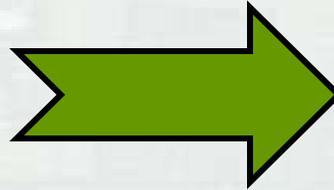
Lessons Learned - CESAD

- Executive Steering Committee – Facilitated interagency collaboration and issue resolution
- SHEP lessons learned are being shared with other navigation projects
- Be prepared for policy and process changes
- Project placemat is a valuable communication tool (internal & external)
- Monthly In-Progress Reviews
- Focus issue resolutions at regional level
- Manage expectations
- Coordinate with IEPR prior to Civil Works Review Board



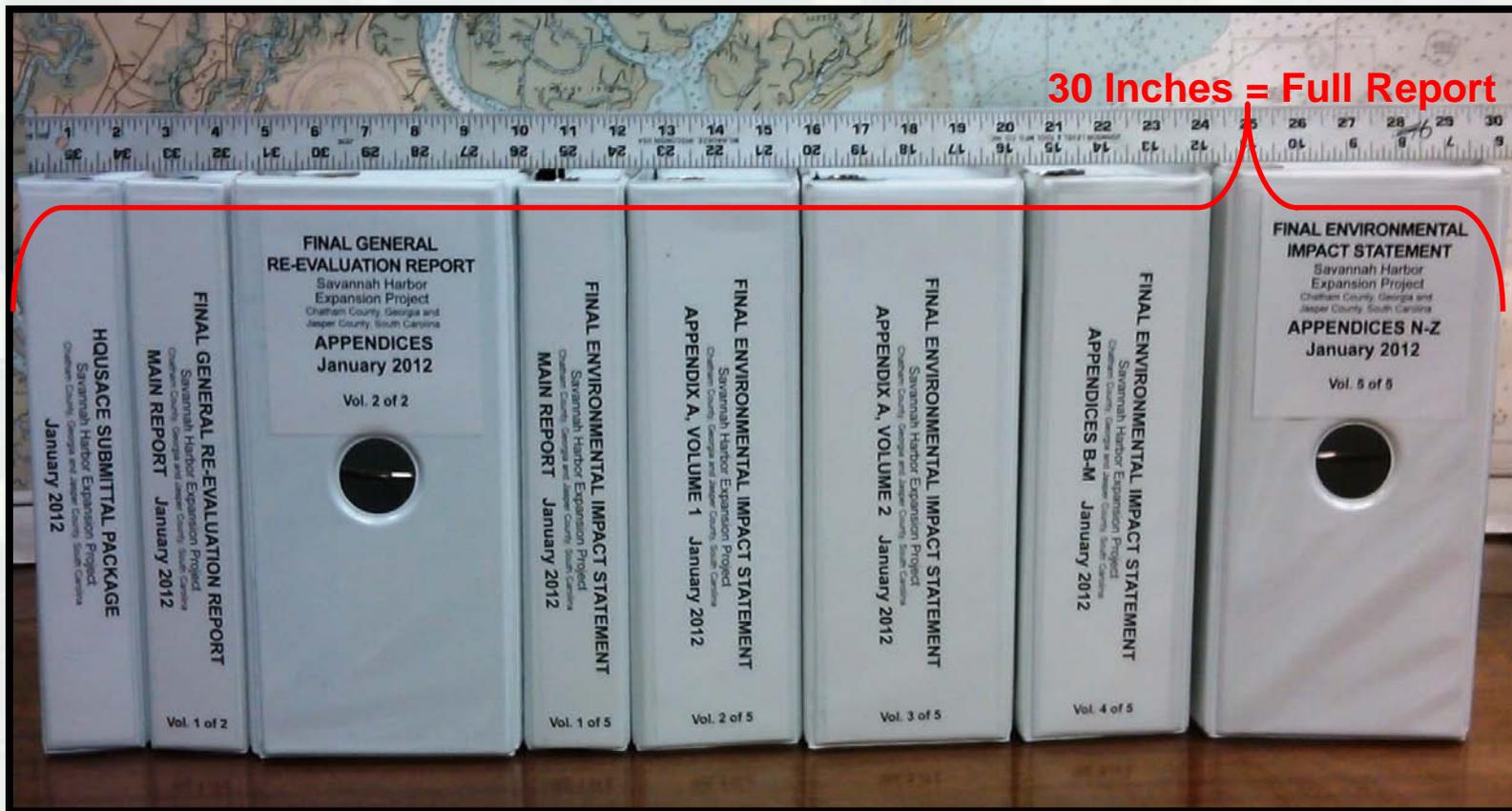
Savannah Harbor Study

- \$41 Million Study Cost
- 30 Inch Report
- 16 Year Study Duration



New Study Paradigm

- \$3.0 Million Study Cost
- 3 Inch Report
- 3 Year Study Duration



Closing Comments



Back-Up Slides Follow



ASA (CW) Policy Review Approvals

ASA (CW) concurred with HQUSACE Policy Review of Proposed Mitigation Measures & Monitoring on 28 Nov 2011

- Chloride Mitigation – Updated independent analysis identified the need for mitigation and the best method to provide it. Final cost estimate incorporated into the final report documents
- Annualized Impacts Policy Waiver – Memo concurs with the wetland acreages and HQ advised to use the ASA Memo as approval of the policy waiver
- Shortnose Sturgeon Mitigation – Memo concurs with the more robust off-channel rock ramp fish passage design for SNS mitigation
- Monitoring and Adaptive Management Funding Assurances – Memo states non-federal sponsor escrow resolves agencies funding concerns. The sponsor intends to provide their portion of these costs through an escrow account.
- Striped Bass Mitigation – Memo concurs with the lump sum Striped bass stocking payment to GA DNR as mitigation



Costs & Section 902 Limit

Description	Amount
Project First Cost at Oct 2011 Levels	\$652M
Based on 1999 authorization, Section 902 Limit \$230M Escalated to Oct 2011 + (20% of \$230M)	\$515M
Amount Exceeding Section 902 Limit	\$137M

- 24 Jan 2012 HQUSACE stated the updated Total Project Cost (TPC) must be approved by Congress before the PPA can be executed and construction can begin
- After the 24 Nov 2012 ROD, updated TPC approval is the critical path to PPA execution and the start of construction
- This could occur by Congress approving the SHEP Supplemental Chief's Report after ASA (CW) and/or OMB submits it on 21 Nov 2012



Legal Status

- **First Legal Action** - (SC Administrative Law Court) – Conservation groups, represented by SELC, and Savannah River Maritime Comm. challenge issuance of 401 and Coastal Zone certifications by DHEC.
- South Carolina enacted legislation to overturn DHEC’s **authority to issue certifications for Savannah River projects** (Effective 22 MAR 12).
- **Second Legal Action** - (USDC SC – Beaufort Division) – Conservation groups allege a “Pollution Control Act” permit is required for discharge of dredged and fill material, as well as dissolved oxygen mitigation.
- **Third Legal Action (Supreme Court of SC)** – Conservation groups seek a decision as to which State agency (DHEC or SRMC) has authority to issue 401 certifications for Savannah River navigation projects.



Integration With Other Watershed Purposes

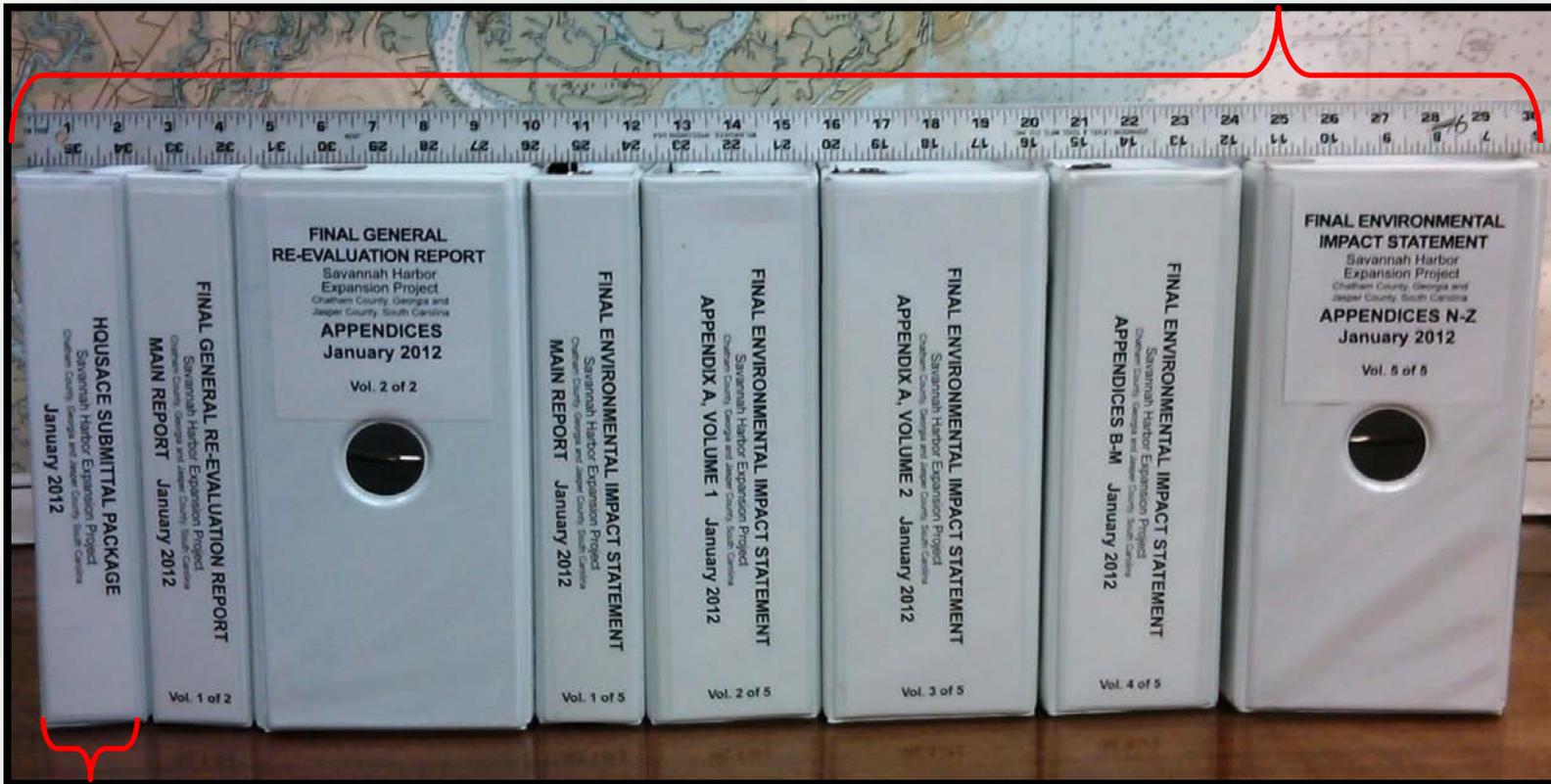
INTEGRATION	REMARKS
Savannah National Wildlife Refuge	USFWS states project is compatible with Refuge
EPA Dissolved Oxygen Requirements	Mitigation supports Total Maximum Daily Load
City of Savannah Water Intake	Mitigation addresses expected impacts
Anadromous Fish Passage	Mitigation feature at 1 st dam upstream allows access to historic spawning area
Tybee Island Storm Damage Reduction Project	Insignificant effects
Upstream Corps Reservoirs	No effects
Groundwater	Insignificant effects



SHEP Final GRR & EIS

- \$41 Million
- 30 Inches
- 16 Years

30 Inches = Full Report



2 Inches = HQUSACE Checklist Items



Policy Guidance Memorandum

Compliance Actions

- Review for General Reevaluation Scoping Meeting identified Corps' need for a different economic benefit methodology to evaluate improvement of container ports

- Review of white papers resulted in 2011 HQUSACE and OASA approvals:
 - Mitigation features
 - Wetland mitigation for impacts at time of construction

