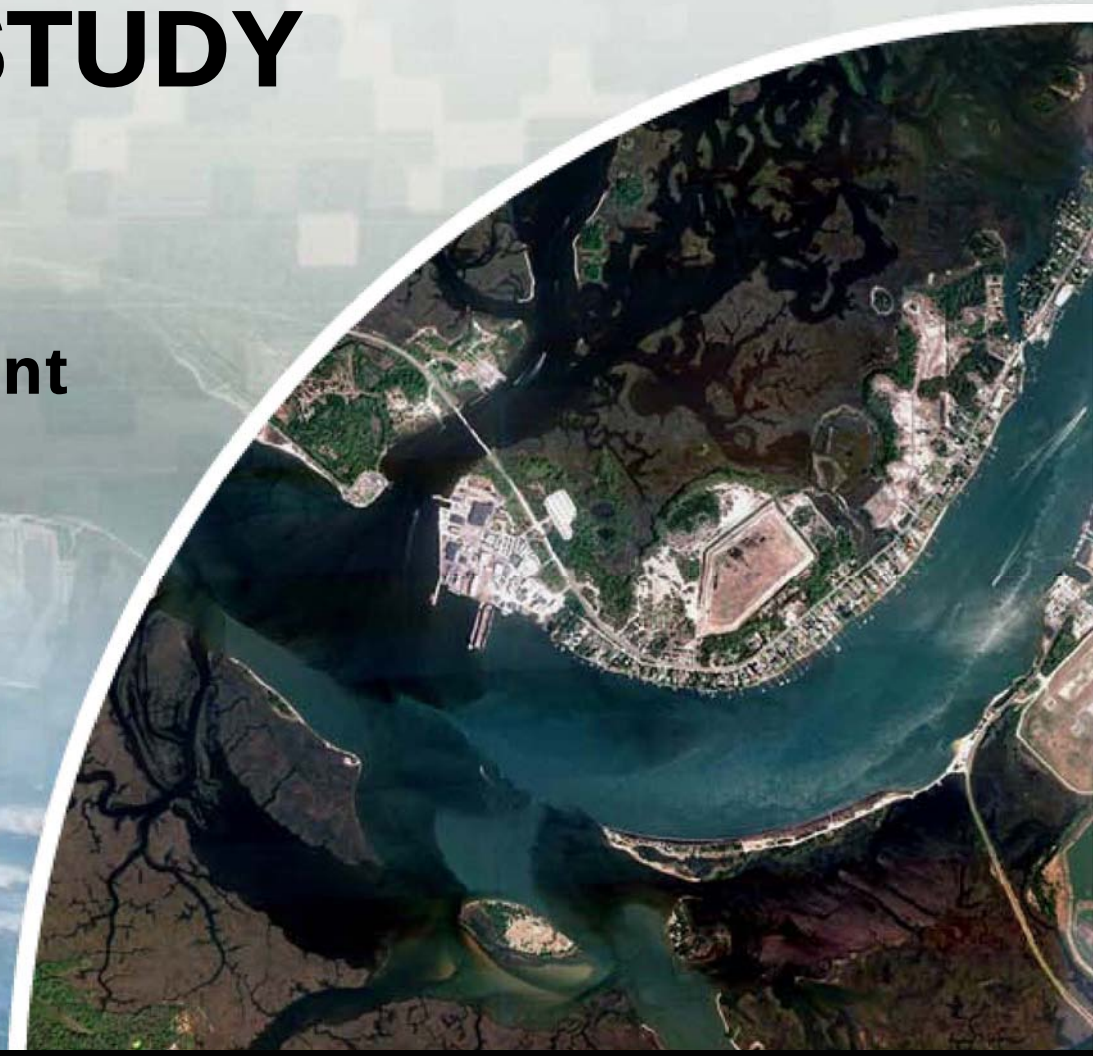
JACKSONVILLE HARBOR MILE POINT NAVIGATION STUDY

Duval County, Florida

Feasibility Report and Environmental Assessment

Presented by:
Colonel Al Pantano
Jacksonville District

Civil Works Review Board
December 13, 2011

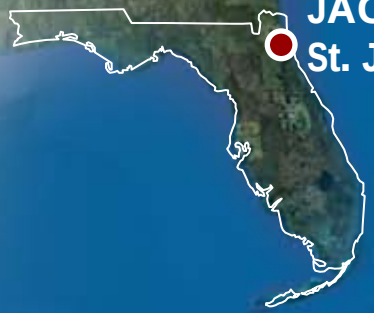


JACKSONVILLE HARBOR
SIGNIFICANCE

- **Florida: #7 in U.S. (Waterborne Traffic)**
- **Jacksonville Harbor:**
  - ▶ **#1 in Florida (Containers)**
  - ▶ **#3 in Florida (Tonnage)**
- **Transportation Nexus: Vessel – Highway – Rail**
- **Emerging global trade**

JACKSONVILLE HARBOR

MILE POINT



Atlantic Ocean

JACKSONVILLE HARBOR
St. Johns River

MILE POINT: THE BOTTOM LINE

Difficult Crosscurrents
At Ebb Tide

=

Navigation Restrictions

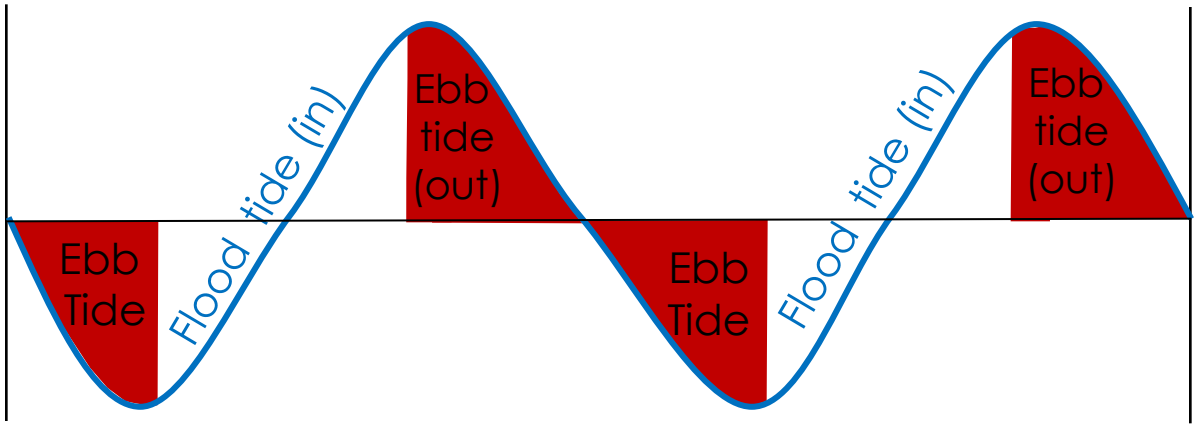
=

Economic Costs
(tidal delays to reach terminals)

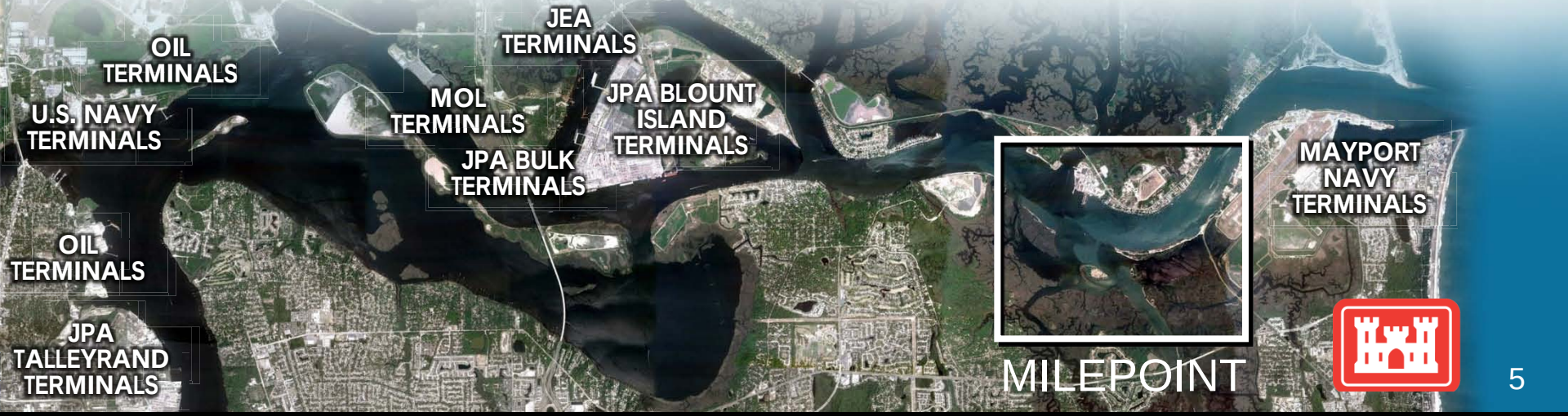
AUTHORIZATION **"…. in the interest of navigation and related purposes, with particular reference to erosion of the Mile Point shoreline."**

REDUCED USE OF EXISTING FEDERAL CHANNEL

- **Authorized project depth: 40 feet**
- **Fully operational only 45% of the time**
- **Average Delay Per Vessel: ~ 4 hours depending on draft**



TIDAL FLOWS ON VESSEL MOVEMENT (24-HR PERIOD)



TRANSPORTATION SAVINGS AFFECTED

RELEVANT TO MILE POINT

Navigation Economic Analysis and Achieving Transportation Savings:

- Larger vessels
- More efficient use of vessels
- Reduction in transit time
- Lower cargo handling and tug assistance costs
- Use of waterway transportation rather than land

PRESENTATION OUTLINE

- Authority
- History
- Existing Conditions
- Future Conditions
- Problems/Opportunities
- Objectives
- Plan Formulation
- Economic Analysis
- Environmental Issues
- The Recommended Plan
- Cost Share
- Peer Review
- Other
- Schedule

Jacksonville Harbor
Mile Point
Navigation Study
Duval County, Florida

Presented by:

Doug Darling

Executive Director, Florida Dept. of Economic Opportunity

Civil Works Review Board

Dec. 13, 2011

Jacksonville Harbor Mile Point Navigation Study

Duval County, Florida

Presented by:

Paul Anderson

JAXPORT Chief Executive Officer

Civil Works Review Board

Dec. 13, 2011

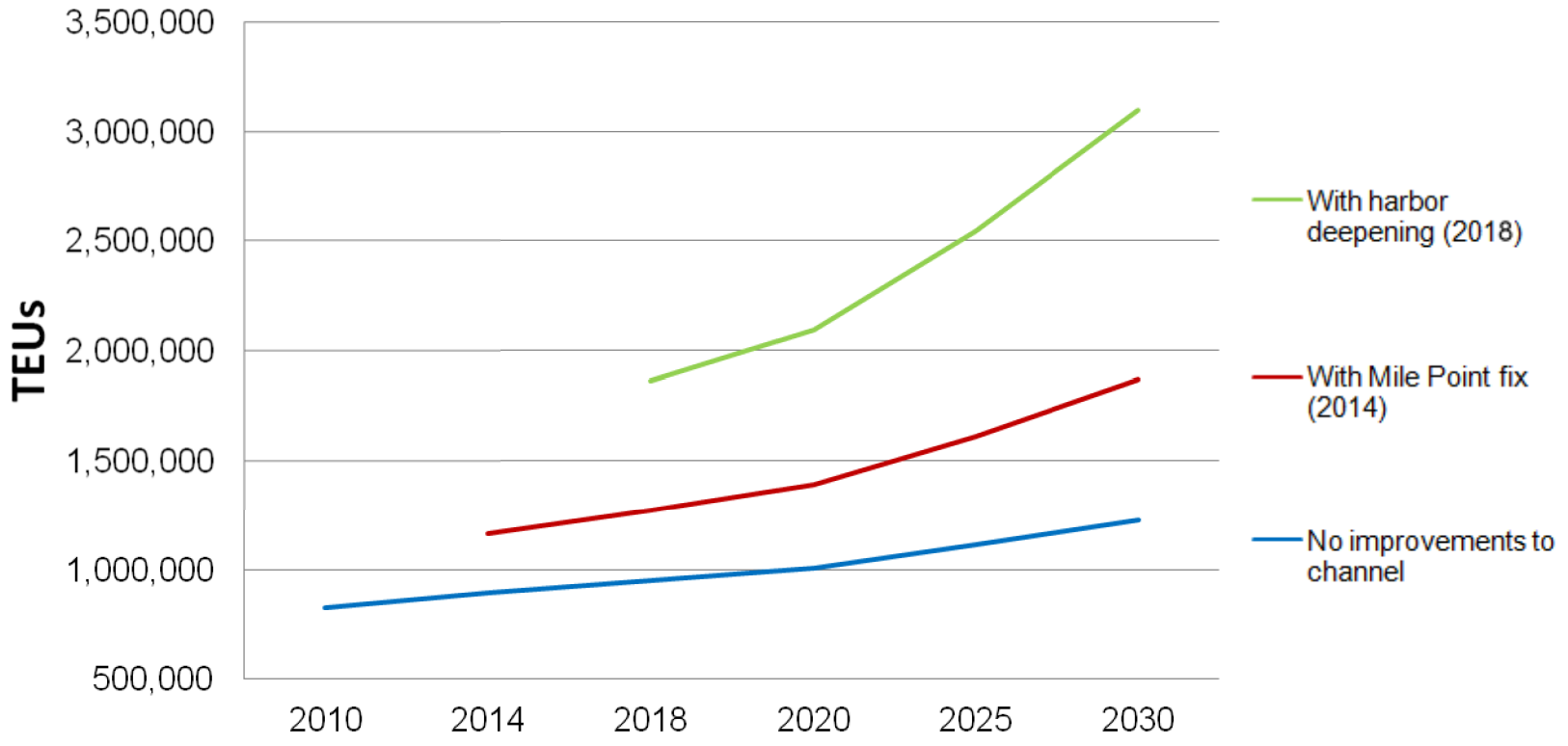
JAXPORT
JACKSONVILLE PORT AUTHORITY

Mile Point Project Economic Impact

Additional…

- ✓ **340,000 TEUs**
- ✓ **3,553 new jobs (direct, indirect, induced)**
- ✓ **Total economic impact: $1.8 billion**

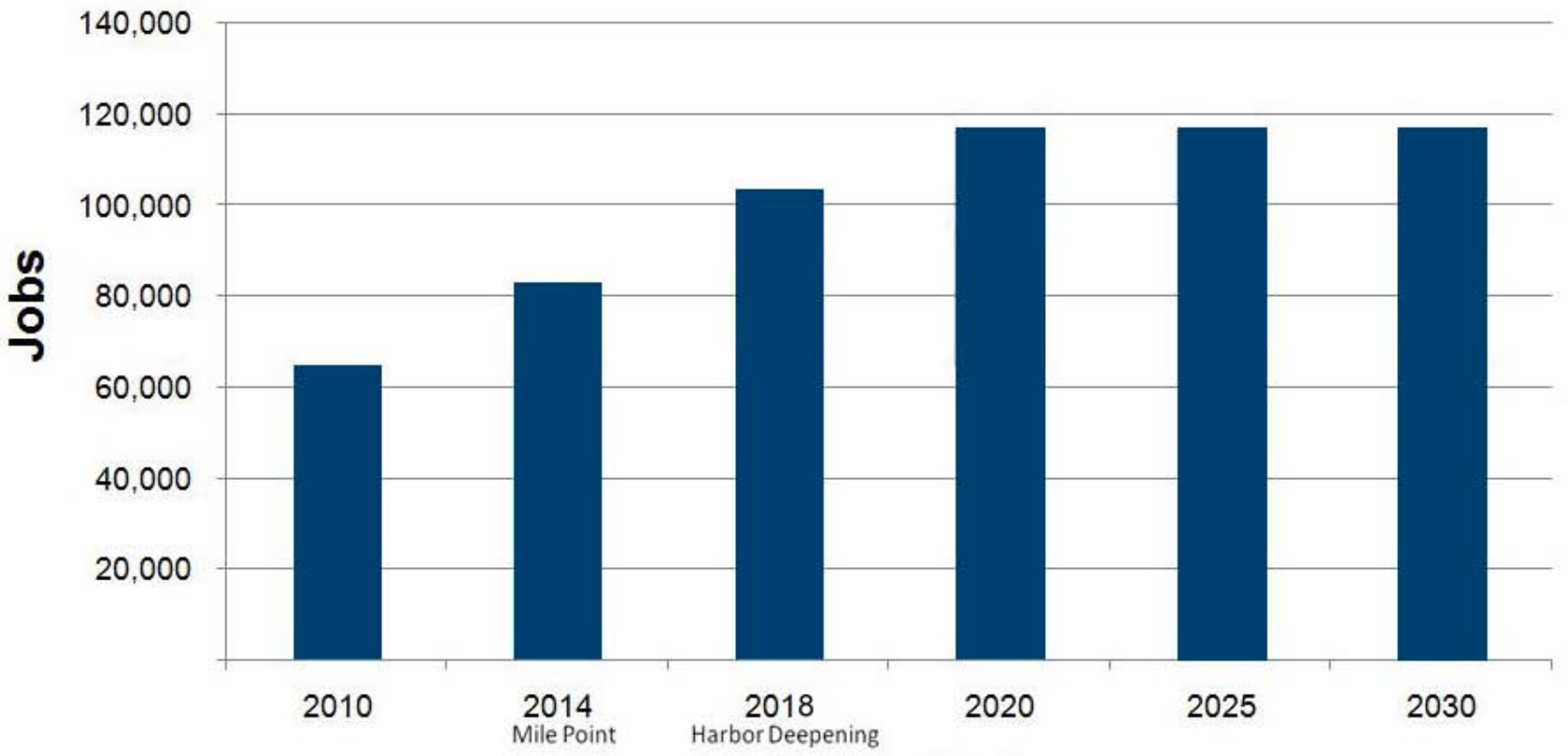
JAXPORT's Projected Container Growth



JAXPORT TEU projections based on 2 - 4 percent annualized growth

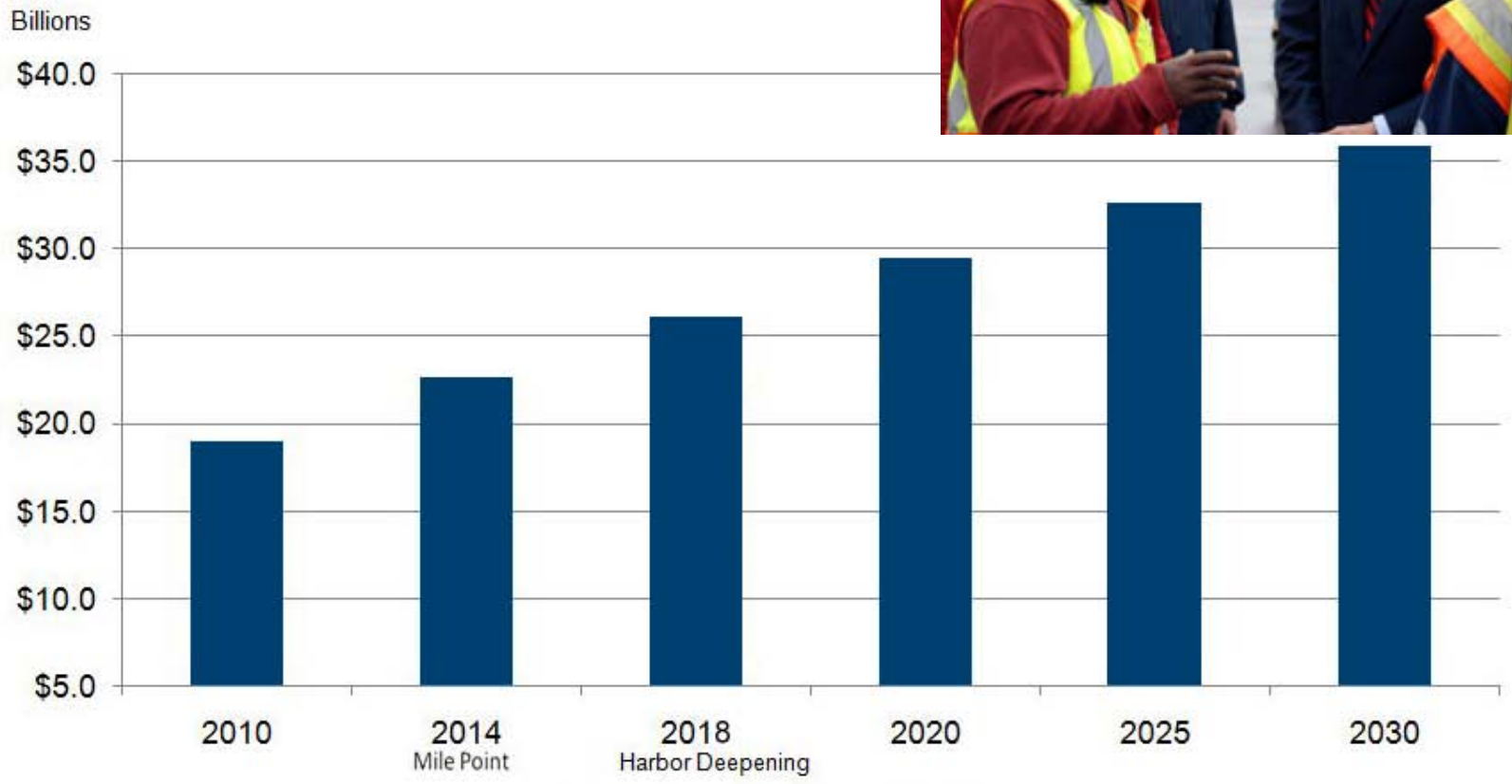
JAXPORT
JACKSONVILLE PORT AUTHORITY

NE FL Projected Job Impact



JAXPORT
JACKSONVILLE PORT AUTHORITY

NE FL Projected Economic Impact



"Jacksonville, in particular, ought to be a big-time shipping capital for the country."

Gov. Rick Scott

JAXPORT
JACKSONVILLE PORT AUTHORITY

“I want to do everything I can to ensure JAXPORT - a proven economic engine - continues to put people to work.”

Jacksonville Mayor Alvin Brown

“These unsafe waterway currents represent the biggest obstacle to safety and future port development at Jacksonville.”

U.S. Rep. John Mica

“[Mile Point] puts us in a very, very tough situation for building our business here.”

TraPac Regional VP and GM Dennis Kelly

"At the end of the day it will mean many, many, more jobs here and economic activity at the port,"
Sen. Bill Nelson, August 2011

JAXPORT
JACKSONVILLE PORT AUTHORITY

JAXPORT is ready to fund the Mile Point Project

NOW!

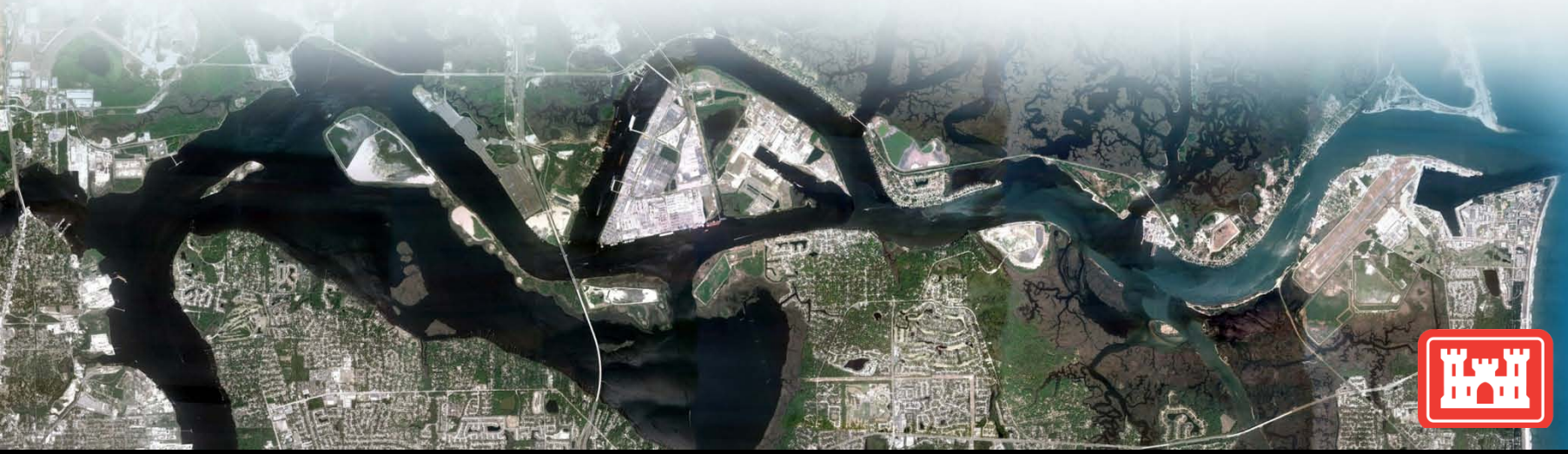
JAXPORT
JACKSONVILLE PORT AUTHORITY

LEGISLATIVE AUTHORITY

- **Authorization:** Resolution, Docket 2550, of House Committee on Transportation and Infrastructure adopted March 24, 1998 for Mile Point, Florida
- **Appropriations:** Congress added funding in the appropriations for Fiscal Year (FY) 2000 to begin the reconnaissance study

JAXPORT
JACKSONVILLE PORT AUTHORITY

The Jacksonville Port Authority (JAXPORT) is the non-federal sponsor



EARLY MILE POINT HISTORY

1896

- Deepen harbor from 12.5 feet to 18 feet
- Improve shoaling conditions at Dames Point, Cedar Creek and Mile Point with training dikes and dredging (originally constructed by local interests)

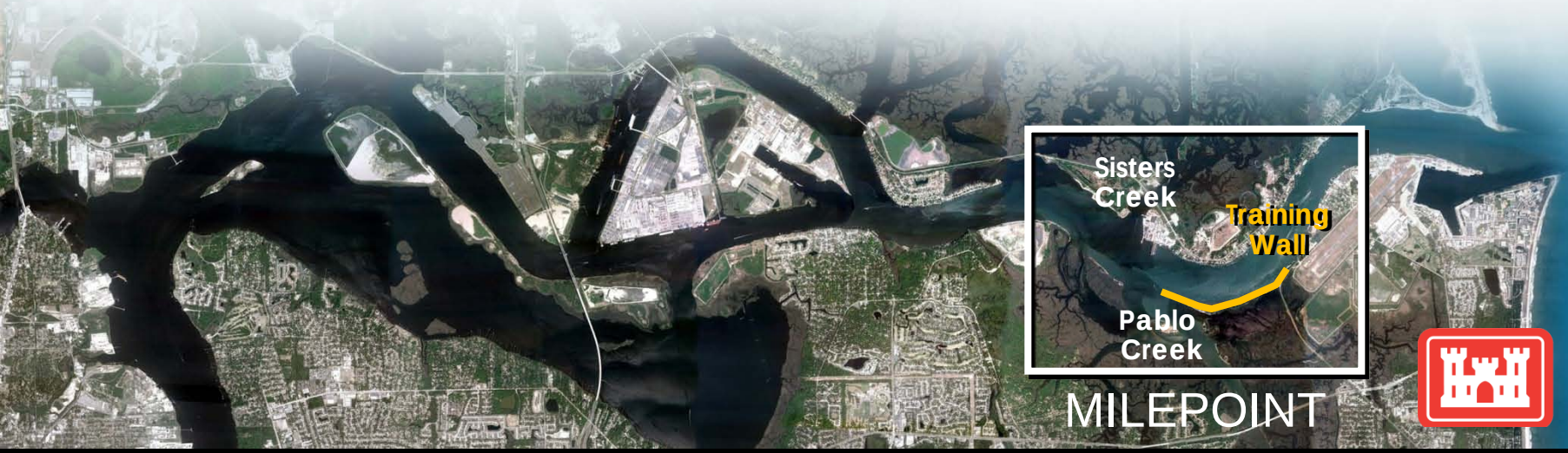
1910

- Deepen harbor to 30 feet
- Augment existing Mile Point Training Wall

1931*

- Repair 5,990 feet of Mile Point Training Wall to original design elevation of 6 feet above MLW

* Post-1931: repair of the landward end of the Mile Point Training Wall in 2001 (O&M)



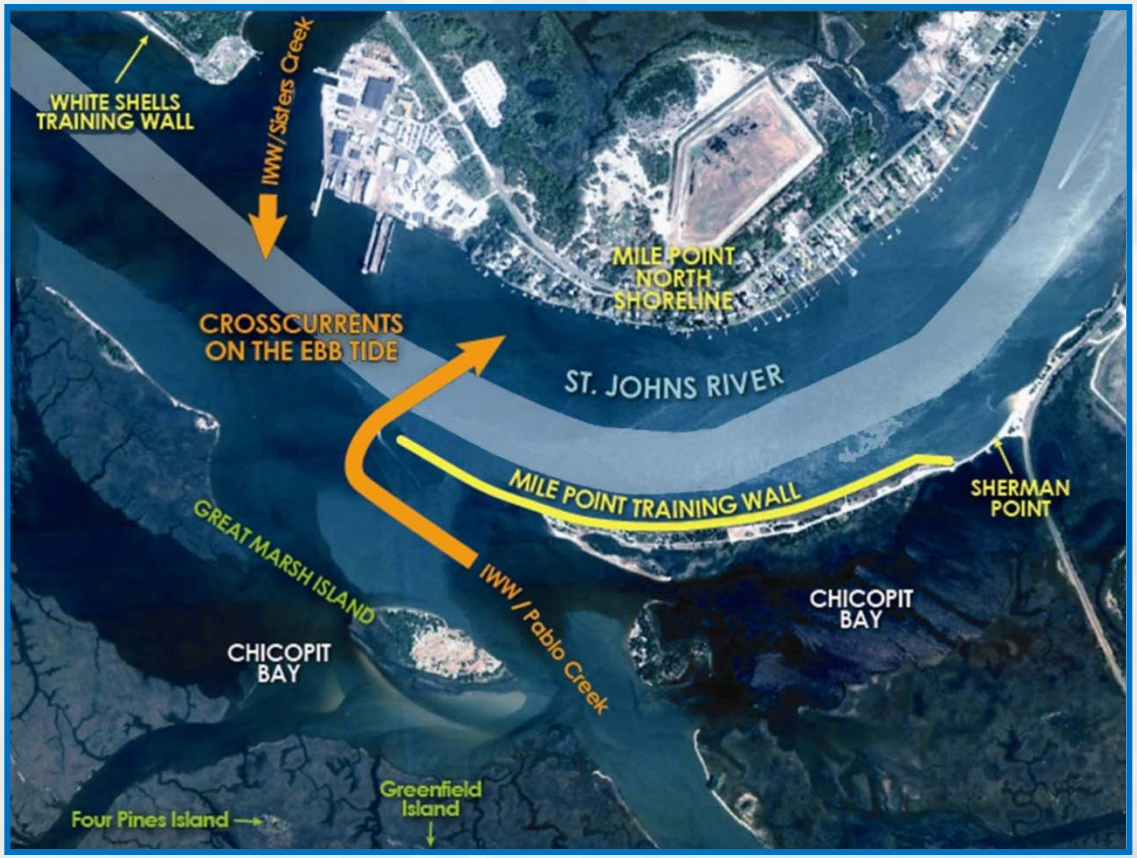
STUDY PURPOSE

Develop and evaluate alternative plans to reduce the effects of crosscurrents at the confluence of the St. Johns River and the Intracoastal Waterway (IWW) on:

- **Navigation and related restrictions for vessels transiting Jacksonville Harbor, and**
- **The Mile Point shoreline**

PROBLEMS/OPPORTUNITIES

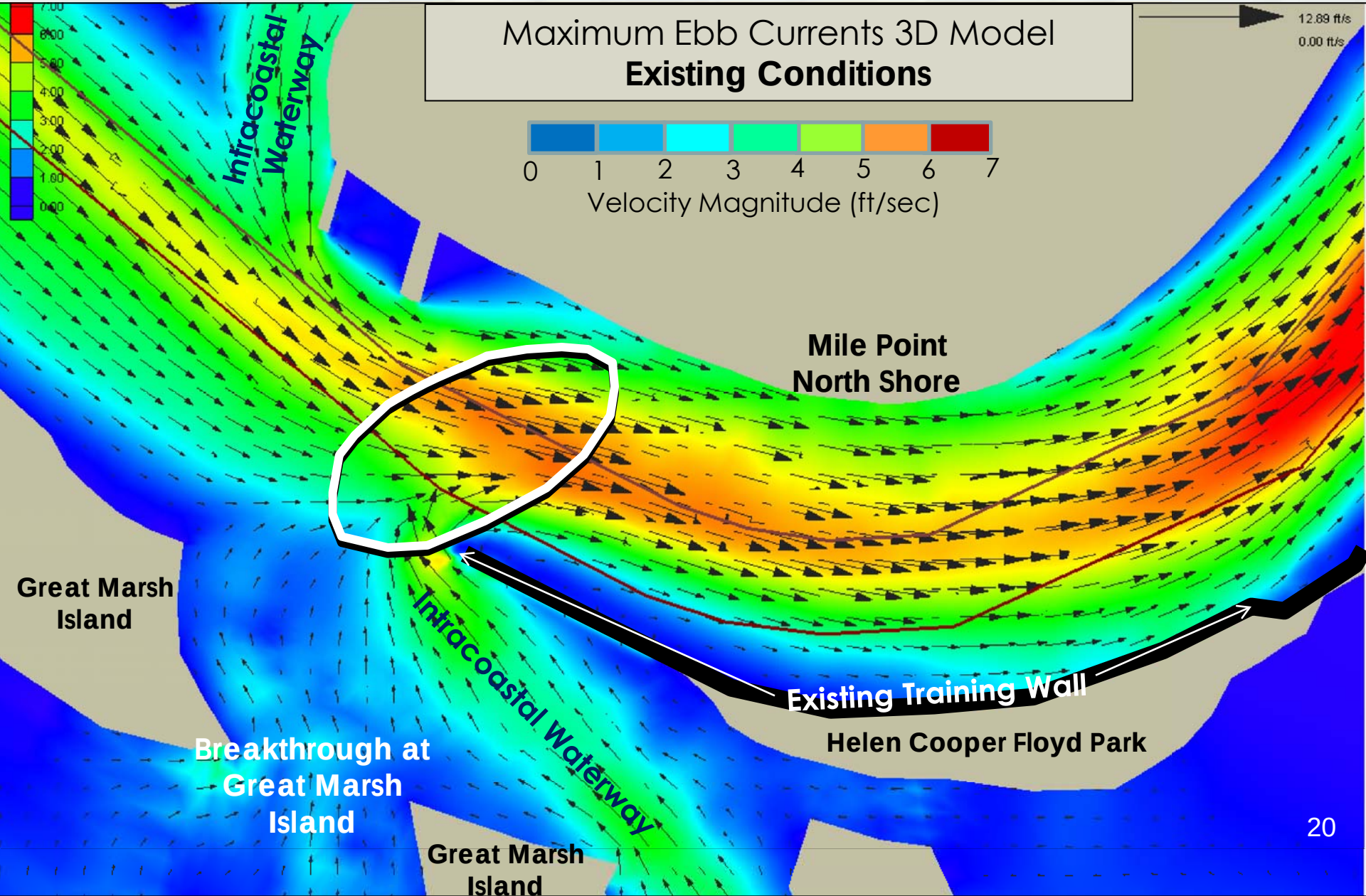
- **Difficult crosscurrents at the confluence of the IWW and the St. Johns River during the ebb tide result in:**
  - **Navigation restrictions during the ebb tide (depending on transit drafts of >33 feet or 34 feet)**
  - **Concerns about erosion of the Mile Point north shoreline**



Note: Restrictions have been in place since 1991, but vessels continue to enlarge

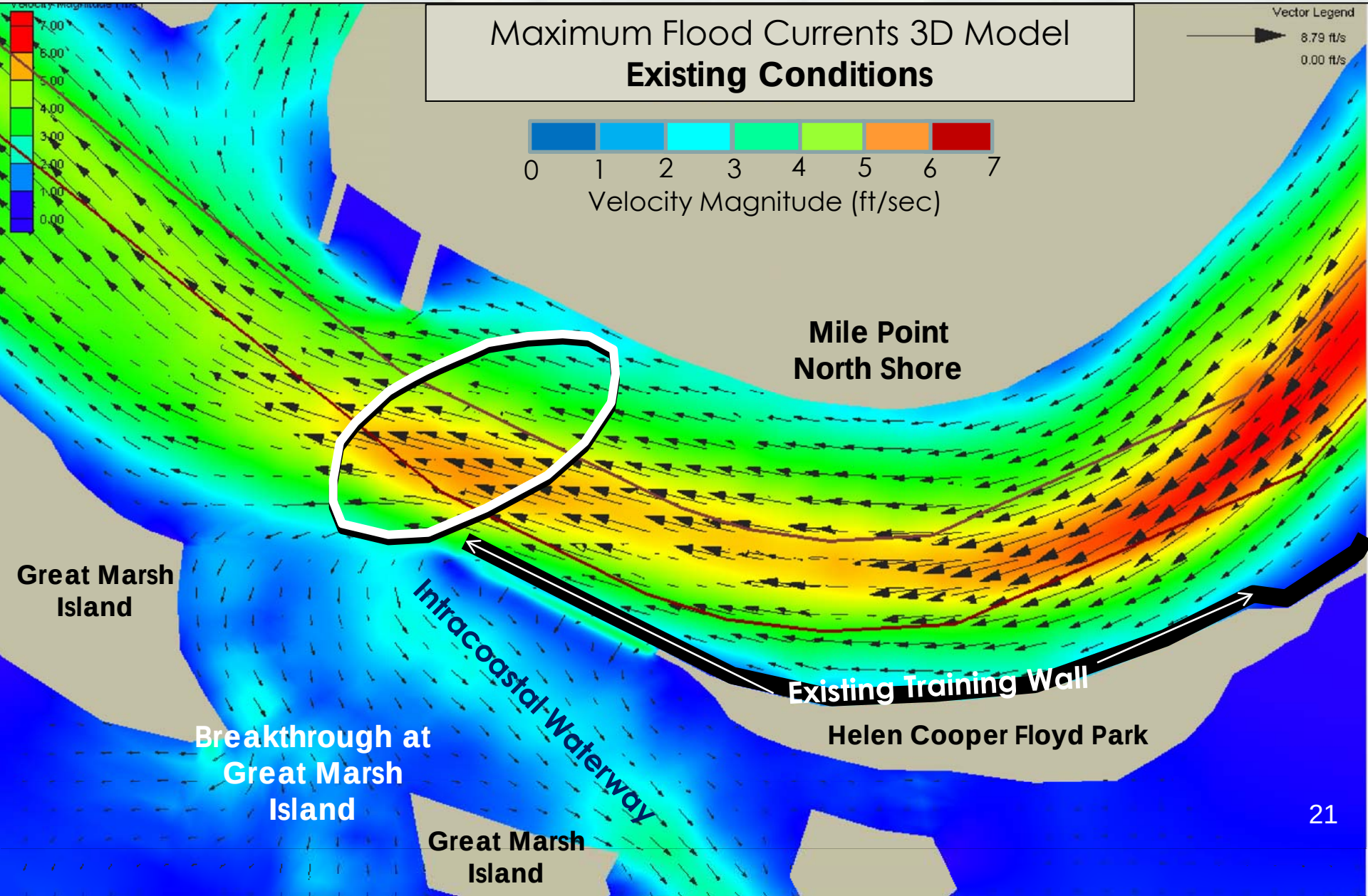
PROBLEMS/OPPORTUNITIES

EXISTING CONDITIONS - MAXIMUM EBB



PROBLEMS/OPPORTUNITIES

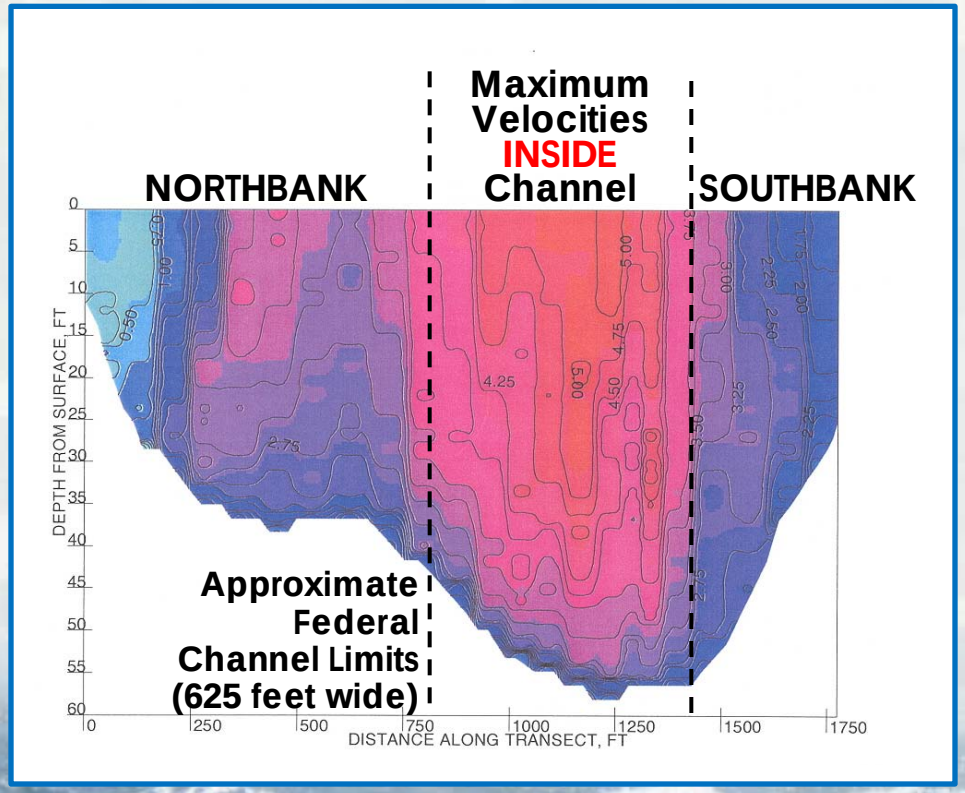
EXISTING CONDITIONS – MAXIMUM FLOOD



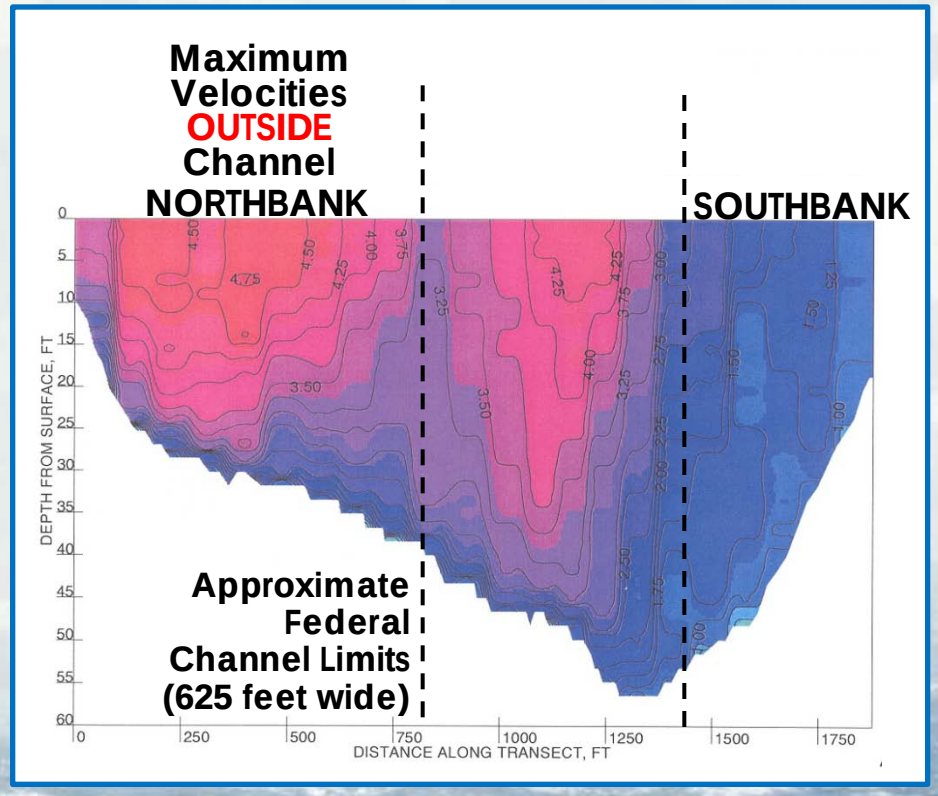
EXISTING CONDITIONS/PHYSICAL

ACOUSTIC DOPPLER CURRENT PROFILE (ADCP) DATA COLLECTION

Velocities at Maximum Flood Tide

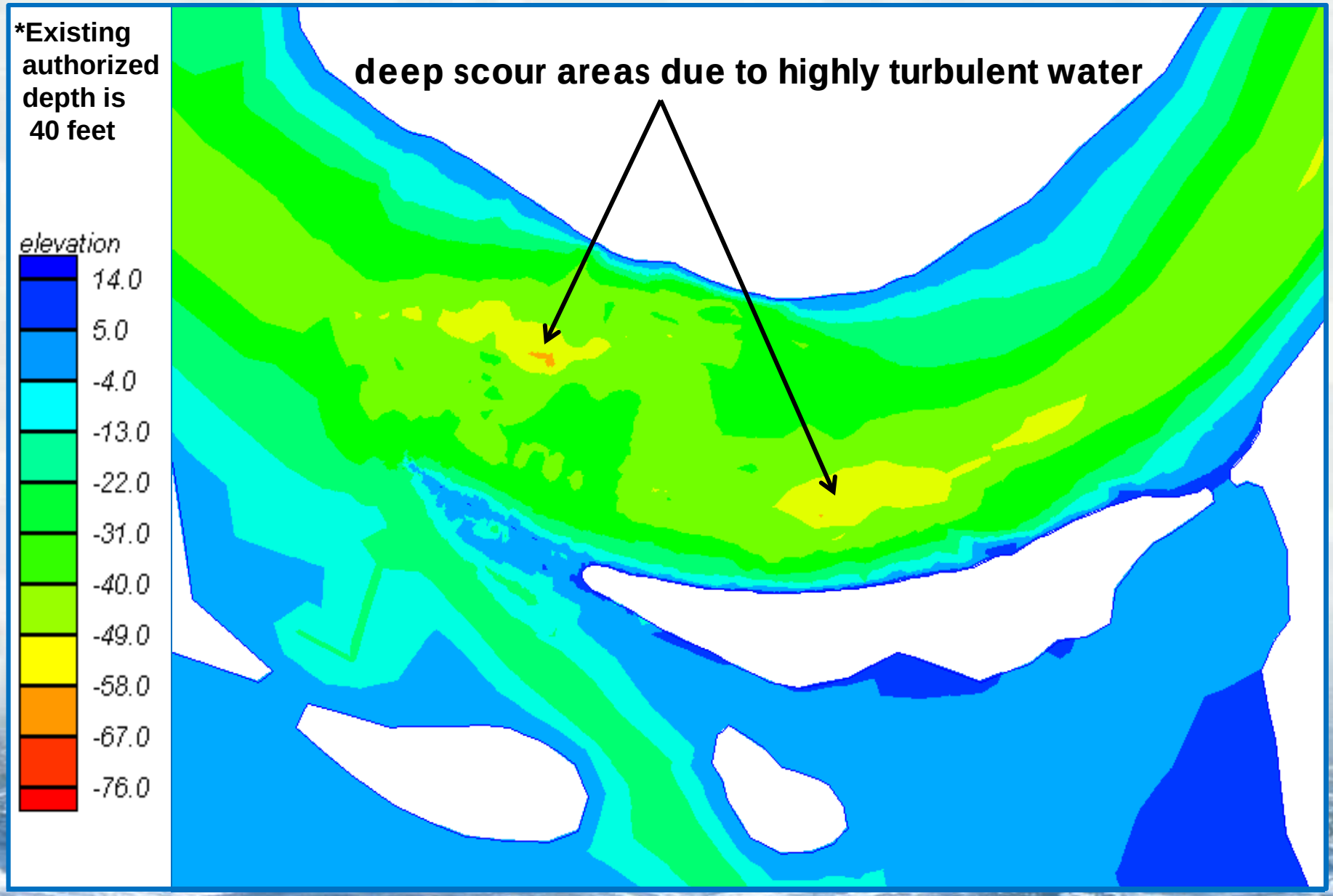


Velocities at Maximum Ebb Tide

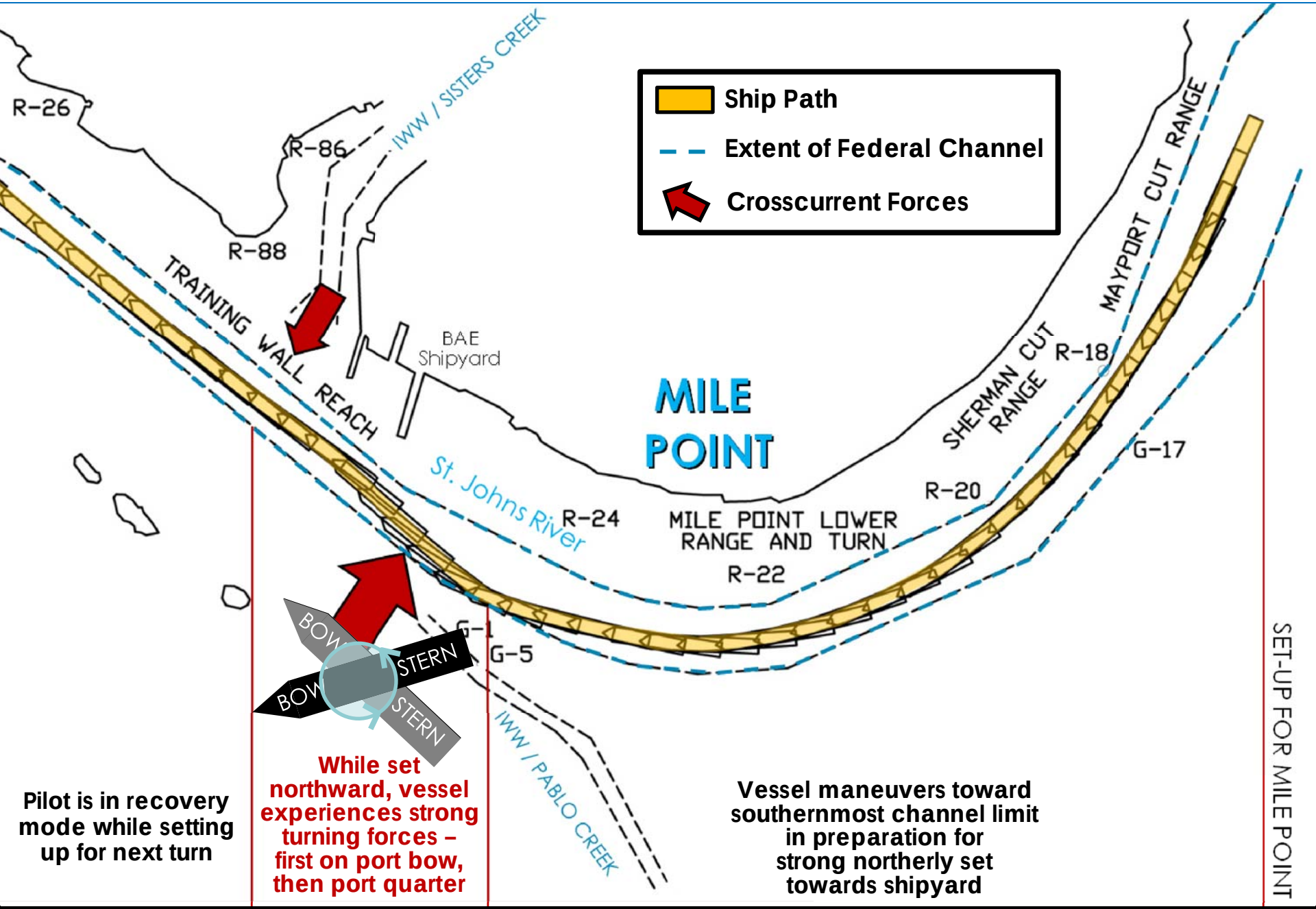


LOW — HIGH

BOTTOM ELEVATIONS FROM HYDROGRAPHIC SURVEY



ERDC SHIP SIMULATION RESULTS: NAVIGATING MILE POINT DURING EBB TIDE



EXISTING CONDITIONS/PHYSICAL
VELOCITIES OF THE CURRENTS

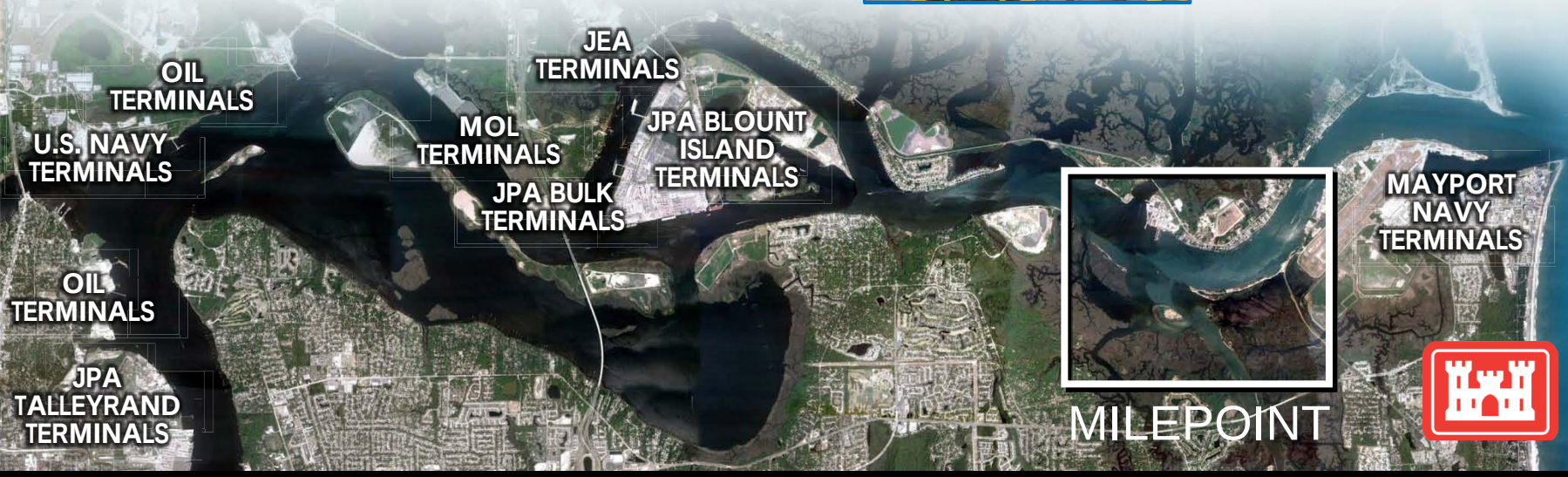
- **Ebb Tide Conditions**
  - **Pablo Creek:**
    - **Flows: Measured in excess of 55,000 cubic feet per second**
    - **Can exceed 25% of total flow in St. Johns River**
  - **Confluence IWW (Pablo Creek) and St. Johns River more than 130 degrees**
  - **High Flows and Extreme Confluence angle = deflection of main channel toward the northeast**

EXISTING CONDITIONS: ECONOMICS

Physical Conditions: Difficult Crosscurrents

Navigation Restrictions

Transportation Costs



EXISTING CONDITIONS

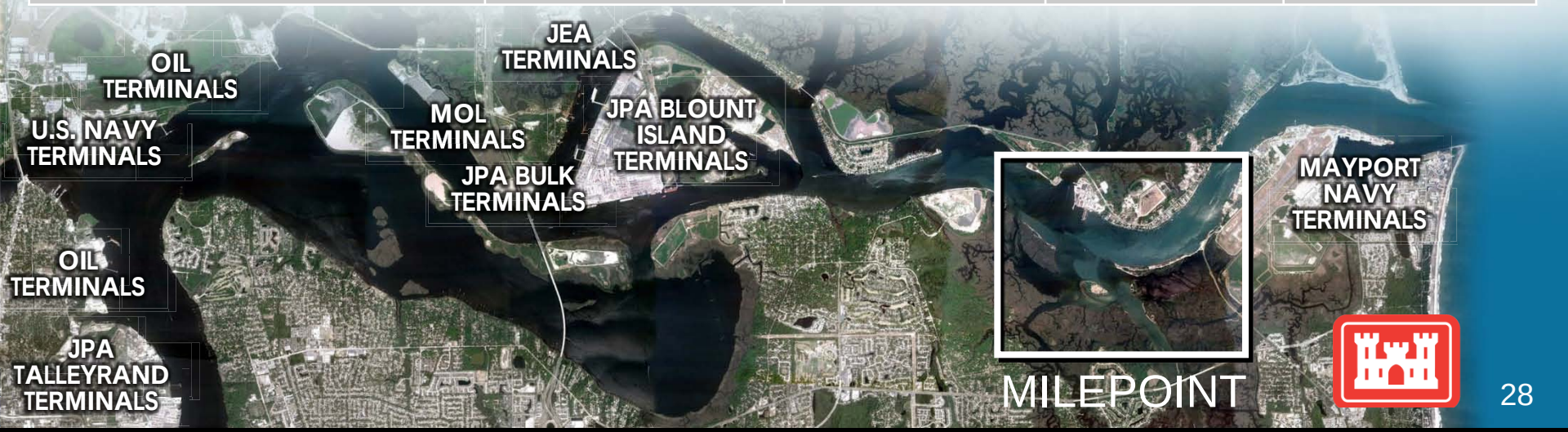
ECONOMICS

- **Mile Point Constrained Vessels**
  - ▸ Inbound > 33 feet
  - ▸ Outbound >36 feet
  - ▸ 40-foot Existing Project
  - ▸ Constrained vessels transit on the flood tide only
- **Major Vessels Delayed**
  - ▸ Dry Bulk – inbound
  - ▸ Liquid Bulk – inbound
  - ▸ General Cargo – inbound/outbound
  - ▸ Container – inbound/outbound

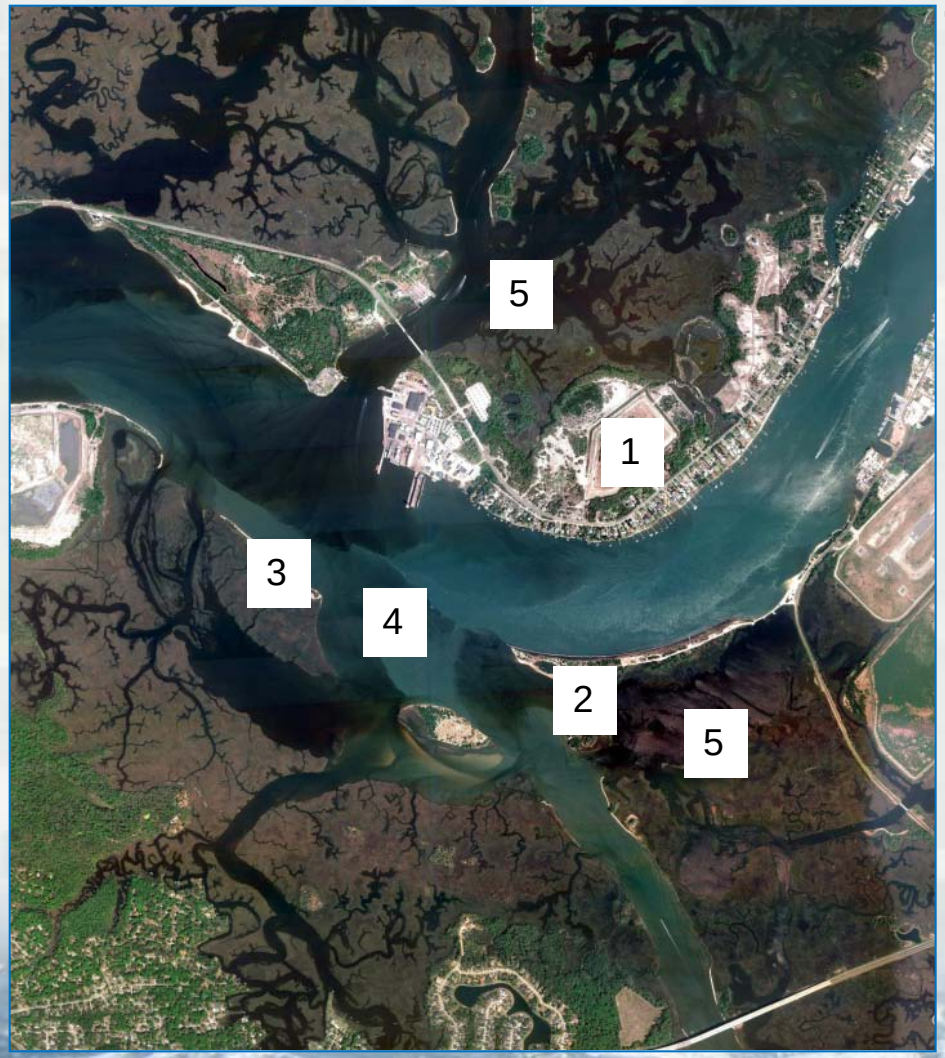
EXISTING CONDITIONS: ECONOMICS

AFFECTED VESSELS IN 2010, 2015, 2064

Annual Mile Point Affected Vessel Calls				
Marine Terminal	**Cargo**	**Year 2010**	**Year 2015**	**Year 2064**
Dames Point (MOL-TraPac)	Container	156	174	298
Blount Island /Talleyrand	Container	25	28	48
Dames Point	Dry Bulk	127	142	243
Blount Island/Talleyrand	General Cargo	59	66	113
Private Terminals (Between miles 14 & 20)	Liquid Bulk	154	154	154
Total	Total	521	564	856



EXISTING CONDITIONS: ENVIRONMENTAL

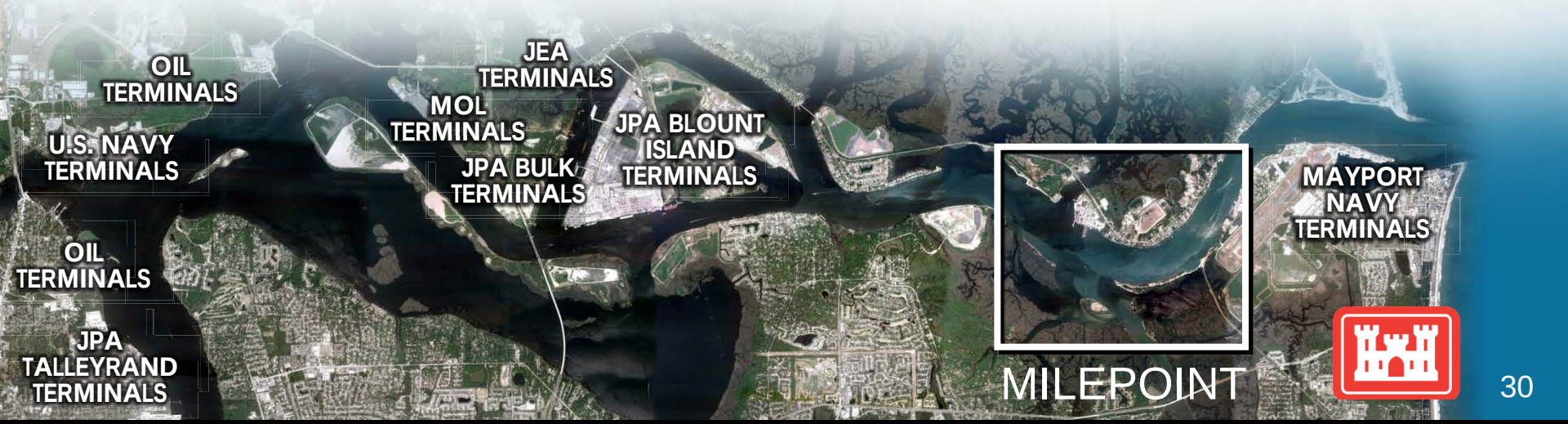


Tidally influenced estuarine environment with salt marsh and adjacent hardwood hammocks

1. **Northern Mile Point shoreline - dredged material on salt marsh (early 1900's)**
2. **Southern Mile Point shoreline (Helen Cooper Floyd Park)**
   - **Navy owned; leased / managed by City of Jacksonville**
3. **Great Marsh Island (primarily salt marsh)**
   - **Navy owned**
   - **Area continues to erode**
   - **Location of submerged prehistoric site**
4. **Threatened and Endangered Species, including manatee, sea turtles, wood stork, piping plover, sturgeon**
5. **Timucuan National Ecological and Historic Preserve surrounds project area**

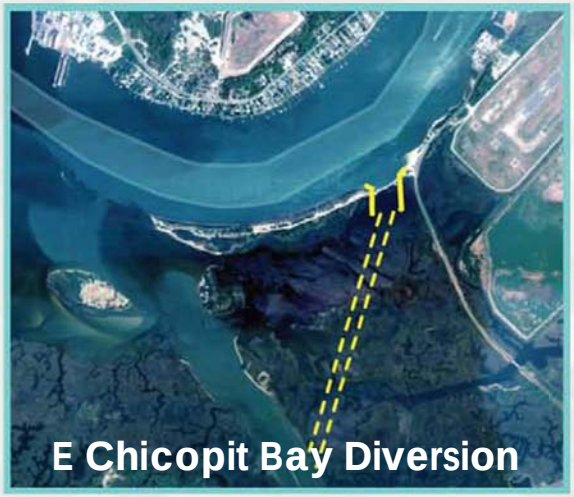
FUTURE WITHOUT-PROJECT CONDITIONS

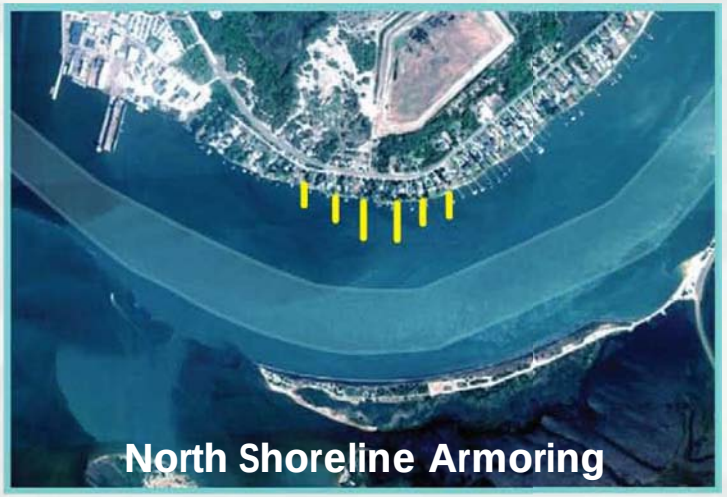
- **Crosscurrents remain – Leading to continued navigation restrictions**
  - ► **Increased transportation costs (conservative statement based on projected growth for existing fleet only)**
  - ► **Growing economic costs (due to delays and resulting transportation cost)**
- **Salt marsh would continue to be lost due to erosion**
  - ► **Wood stork habitat would decrease**
- **Submerged prehistoric site at risk due to potential continued erosion**

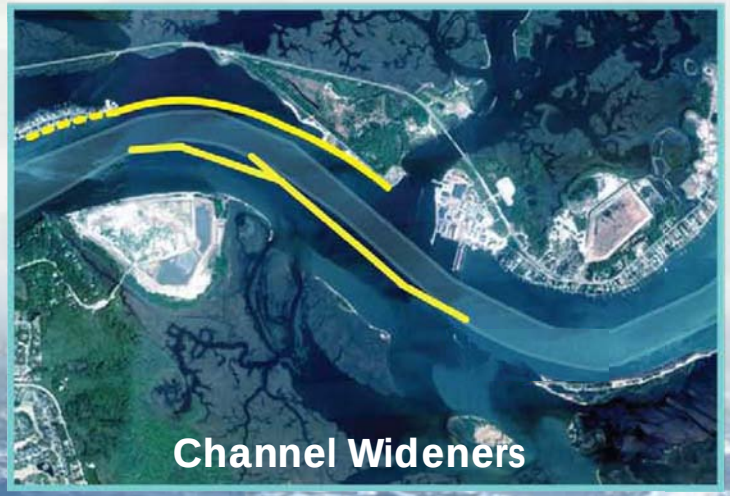


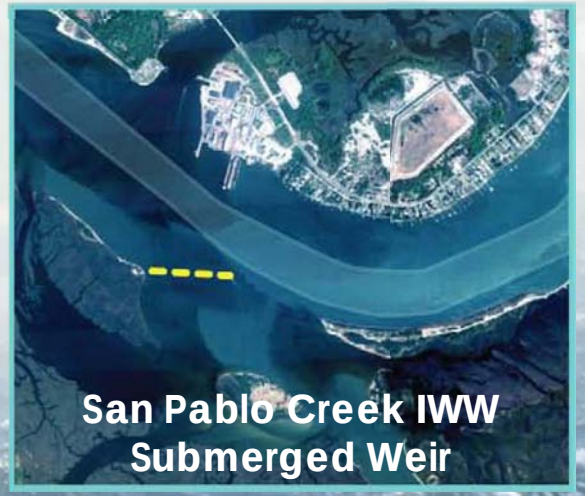
PLAN FORMULATION: MILE POINT ALTERNATIVES CONSIDERED

Variations of these alternatives were also evaluated, as well as non-structural (light-loading, use of tide, additional tugs) and a no action

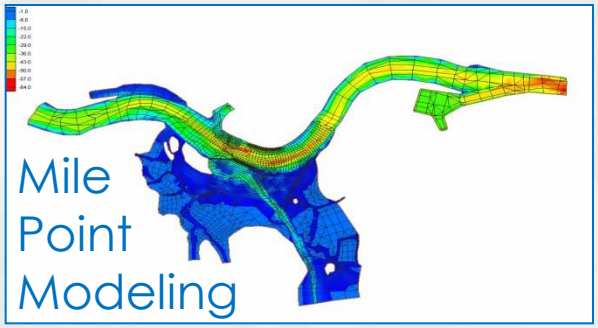








PLAN FORMULATION
SCREENING ALTERNATIVES



1. **Hydrodynamic modeling**
   (resulting vectors used as inputs into ship simulation studies)
2. **Ship simulation testing**

Alternatives that reduced crosscurrents were maintained

PLAN FORMULATION

FEASIBILITY ANALYSIS

Existing Fleet Only with Growth* ($1,000s)

Alternative	Benefits	Costs	AAEQ Cost	AAEQ Benefits	AAEQ Net Benefits	BCR
Relocation/Reconfigure	$52,400	$37,300	$1,737	$2,440	$703	1.40
Relocation/Reconfigure + Widen	$52,400	$76,300	$3,628	$2,440	-$1,188	0.67

Note: "Widening only" alternative did not reduce crosscurrents

* October 1, 2011 Price Levels and FY12 Discount Rate

PLAN FORMULATION

FEASIBILITY ANALYSIS

(Recommended Plan and Economic Scenarios)*

Scenario Analysis: Existing Fleet No Growth*

Alternative	AAEQ Net Benefits ($1,000s)	BCR
Relocation/Reconfigure	$139	1.08

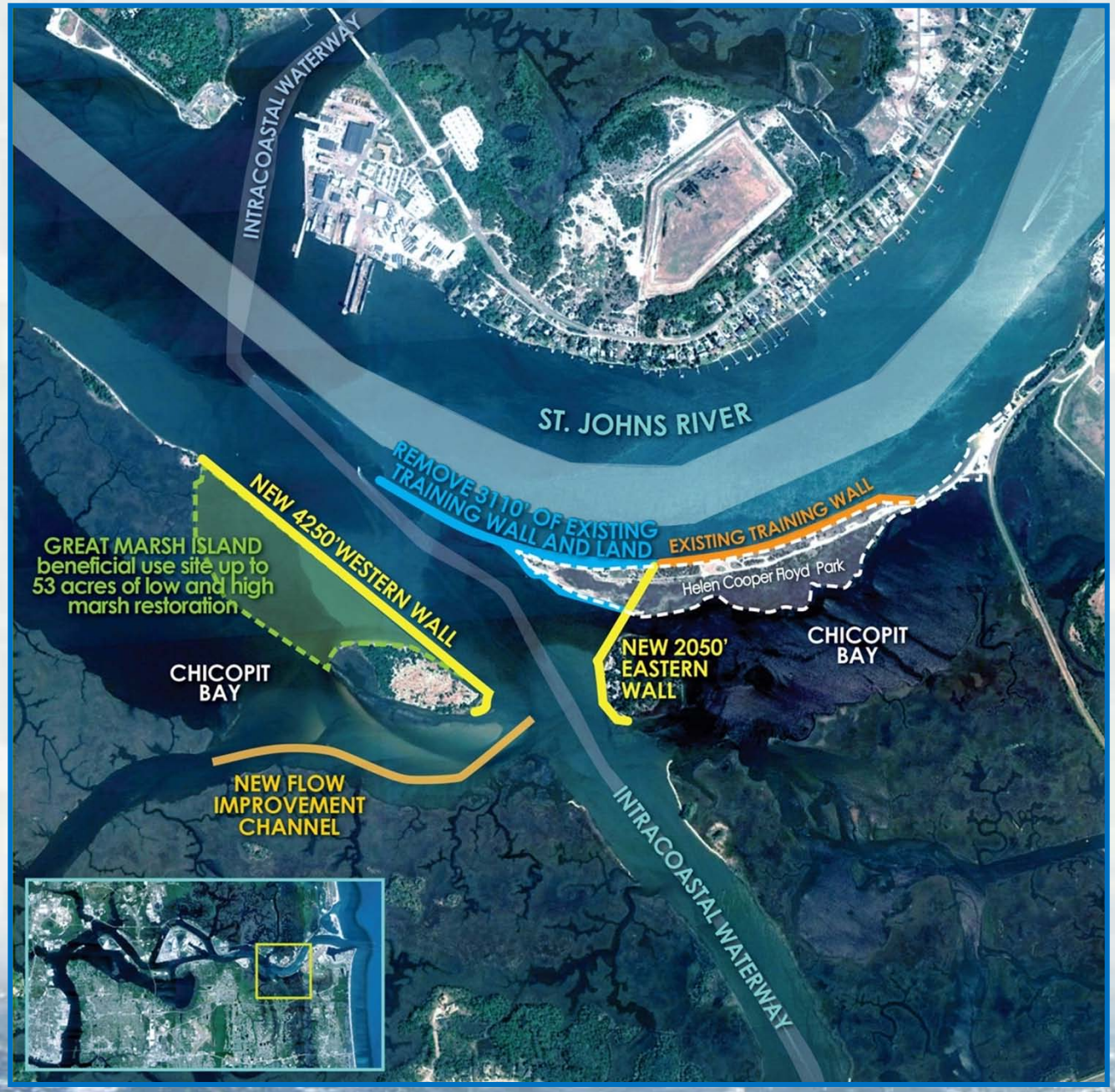
Recommended Plan: Existing Fleet Only with Growth

Alternative	AAEQ Net Benefits ($1,000s)	BCR
Relocation/Reconfigure	$703	1.40

Scenario Analysis: New Container Service*

Alternative	AAEQ Net Benefits ($1,000s)	BCR
Relocation/Reconfigure	$2,606	2.50

*October 1, 2011 Price Levels and FY12 Discount Rate



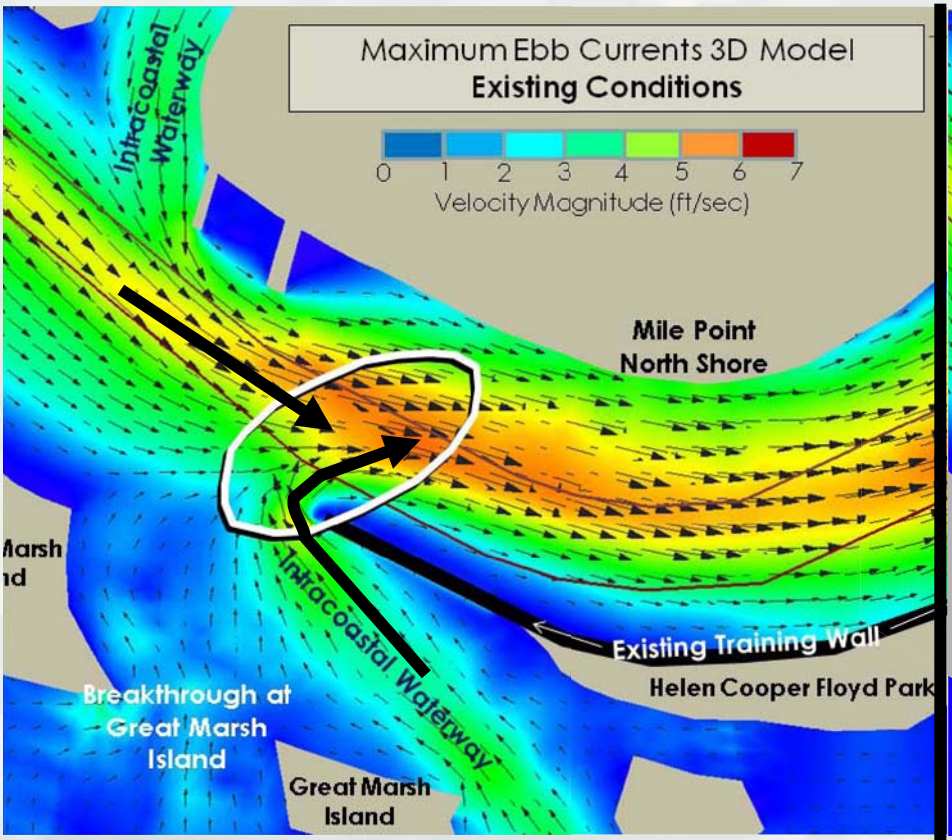
RECOMMENDED PLAN

Relocation/Reconfiguration of the Mile Point Training Wall

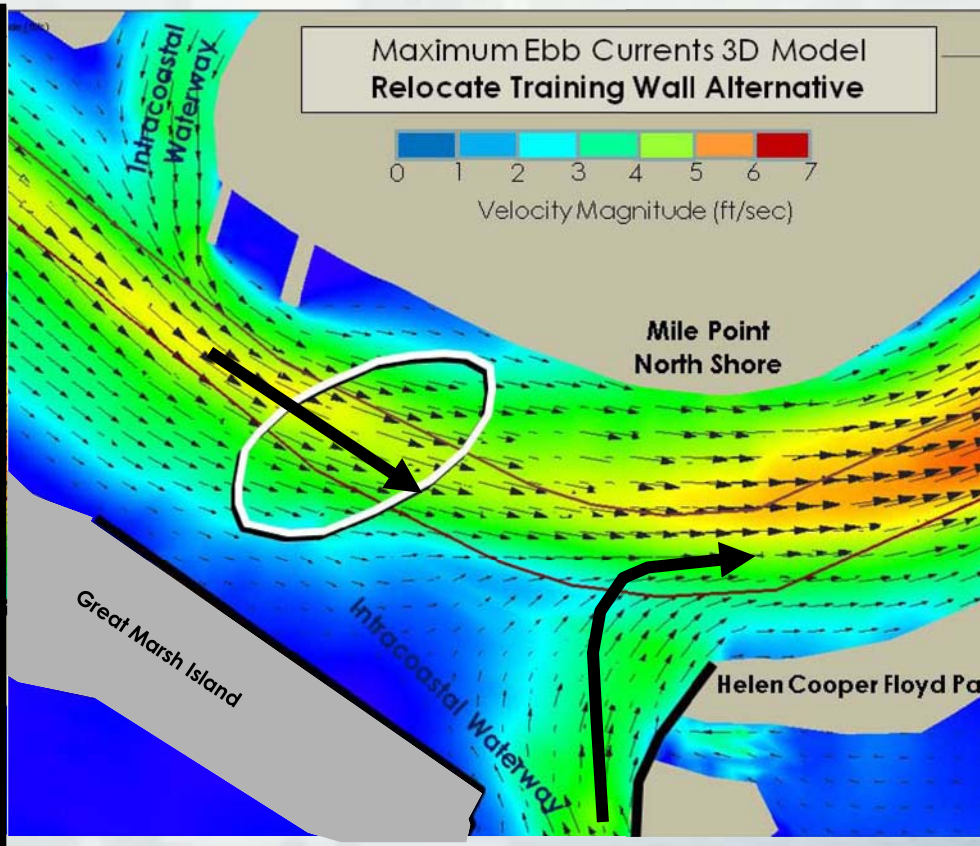
- **Existing Training Wall** (~3000 feet)
- **Training Wall Removal** (western ~3110 feet)
- **New Training Wall** (western leg ~4250 feet; relocated eastern leg ~2050 feet)
- **Great Marsh Island Restoration** (beneficial use of dredged material)
- **Flow Improvement Channel** (~80 feet wide, ~6 feet deep, ~3620 feet length)

RECOMMENDED PLAN

COMPARING RELOCATE/RECONFIGURE TRAINING WALL ALTERNATIVE TO EXISTING CONDITIONS - EBB TIDE



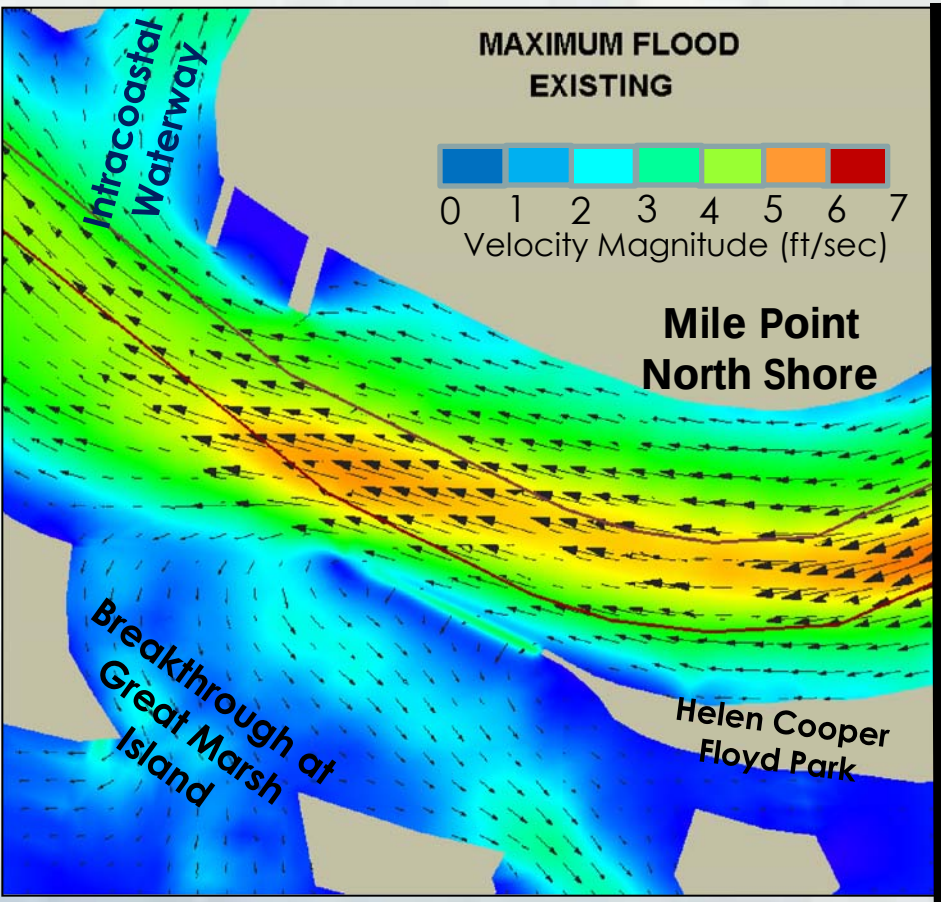
EXISTING CONDITIONS



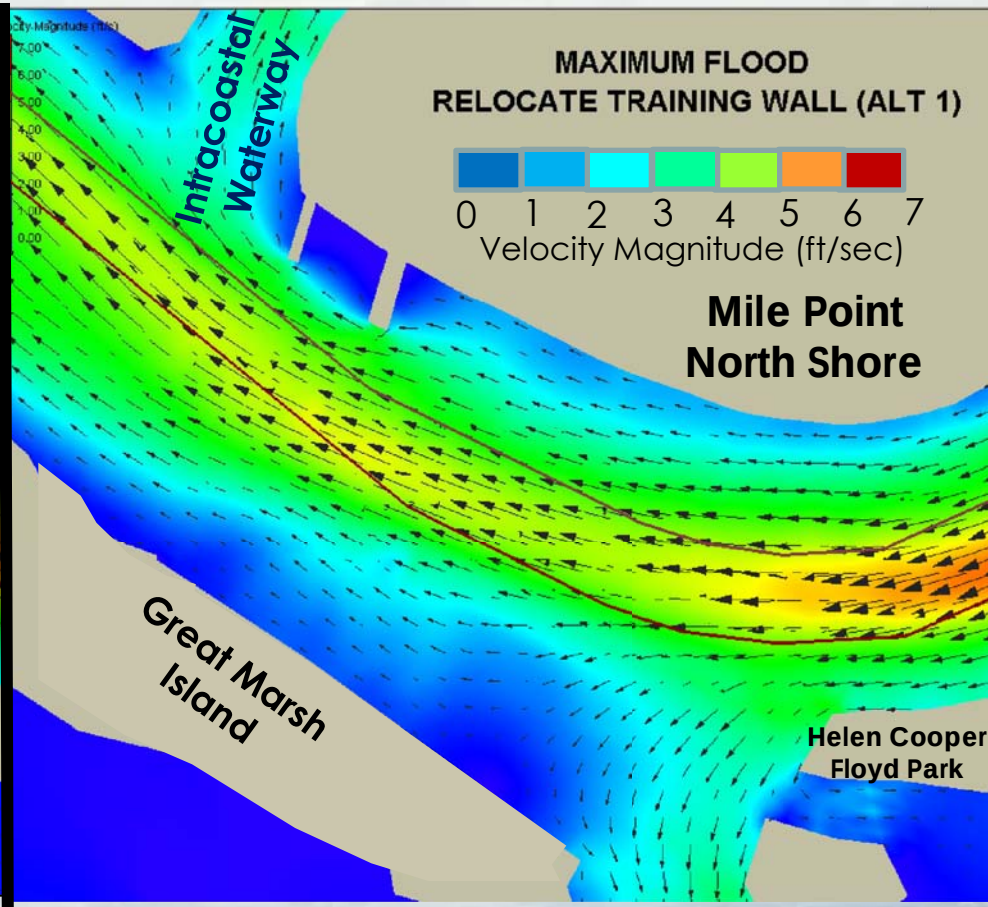
RECOMMENDED PLAN

RECOMMENDED PLAN

COMPARING RELOCATE/RECONFIGURE TRAINING WALL ALTERNATIVE TO EXISTING CONDITIONS - FLOOD TIDE



EXISTING CONDITIONS



RECOMMENDED PLAN

RECOMMENDED PLAN

VALUE ENGINEERING (VE) STUDIES

- **Relocate/Reconfigure Mile Point Training Wall Alternative refined via two VE studies (2008 and 2011)**
- **Total Savings: > $40 million**

2008: $21,290,000 Total Savings

- **Improved training wall sections and scour stone deleted ($12,234,000 savings)**
- **Dredge disposal via salt marsh restoration at Great Marsh Island versus Buck Island disposal ($9,056,000 savings)**
  - **Beneficial use of dredged material/least cost disposal site**

2011: $20,120,000 Total Savings

- **Use of the Concrete Structural Unit (CSU) system or selected commercial training wall structure versus stone**

RECOMMENDED PLAN

SUMMARY OF PROJECT COST

- **Fifty Year Period of Analysis: 2015-2064**
- **FY12 Discount Rate: 4%**
- **NED Plan: Costs October 2011 Price Levels**
- **Total Project First Cost: $35,999,000**
- **Total Cost Allocation.....$36,430,000**
- **Average Annual Equivalent Cost.....$ 1,737,000**
- **Average Annual Equivalent Benefits.....$ 2,440,000**
- **Average Annual Net Benefits.....$ 703,000**
- **Benefit-to-Cost Ratio..... 1.40**

COST ENGINEERING SUMMARY

- **Cost Certification:**
  - Total Project Cost Certified March, 2011
    - FY 2012 Price Level: $36,429,400
    - Fully Funded Amount (2014): $37,767,000
- **Cost and Schedule Risk Analysis Results**
  - 80% Confidence Level
    - 29% Contingency on Cost and Schedule included in the Total Project Cost

SEA LEVEL RISE (SLR)

(EC 1165-2-211)

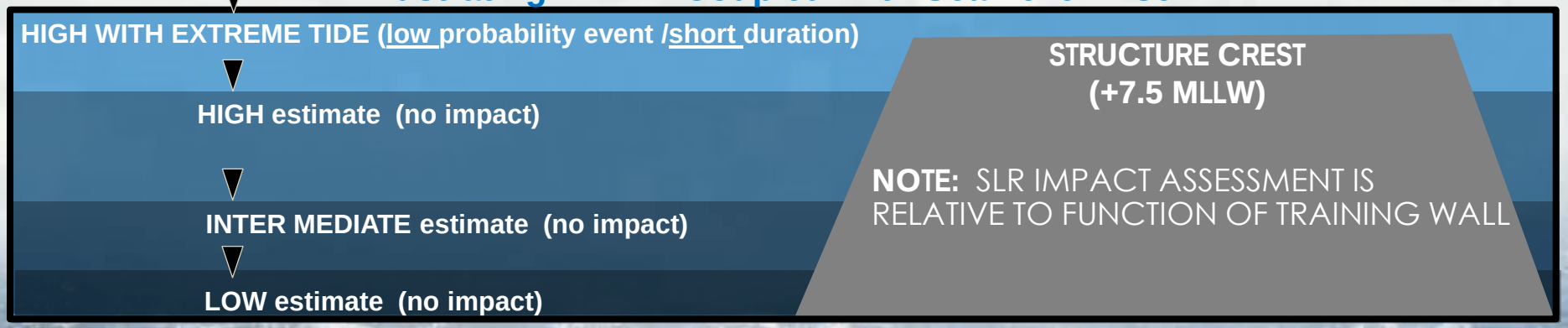
- **Three estimates required by EC guidance**
  - **Baseline (low estimate)** minimum expected sea level change
  - **Intermediate and high estimates** maximum expected sea level change

- **50-year period of analysis**
  - **Low** .12 meters (.39 feet)
  - **Intermediate** .25 meters (.81 feet)
  - **High** .66 meters (2.17 feet)

- **Impact Assessment**
  - **Low and Intermediate** inconsequential to structure performance
  - **High** no impact at MHHW, low probability of events exceeding MHHW level by more than .38 feet – however, structure will perform as intended (train the currents in the river)

SEA LEVEL RISE IMPACT ASSESSMENT

- Illustrating MHHW Coupled With Sea Level Rise -



PURPOSE OF STRUCTURE IS TO "TRAIN" THE RIVER CURRENTS

PUBLIC AND AGENCY INVOLVEMENT

Scoping and Draft EA

- Scoping letters: 2004; 2008
- Meetings with Landowners: 2008; 2011
  - Mayport Naval Station
  - Nature Conservancy (TNC)
- Coordination with local residents: 2008-2011
- Internet postings
- Draft EA coordinated, and comments incorporated
- Public Workshop: August 2011

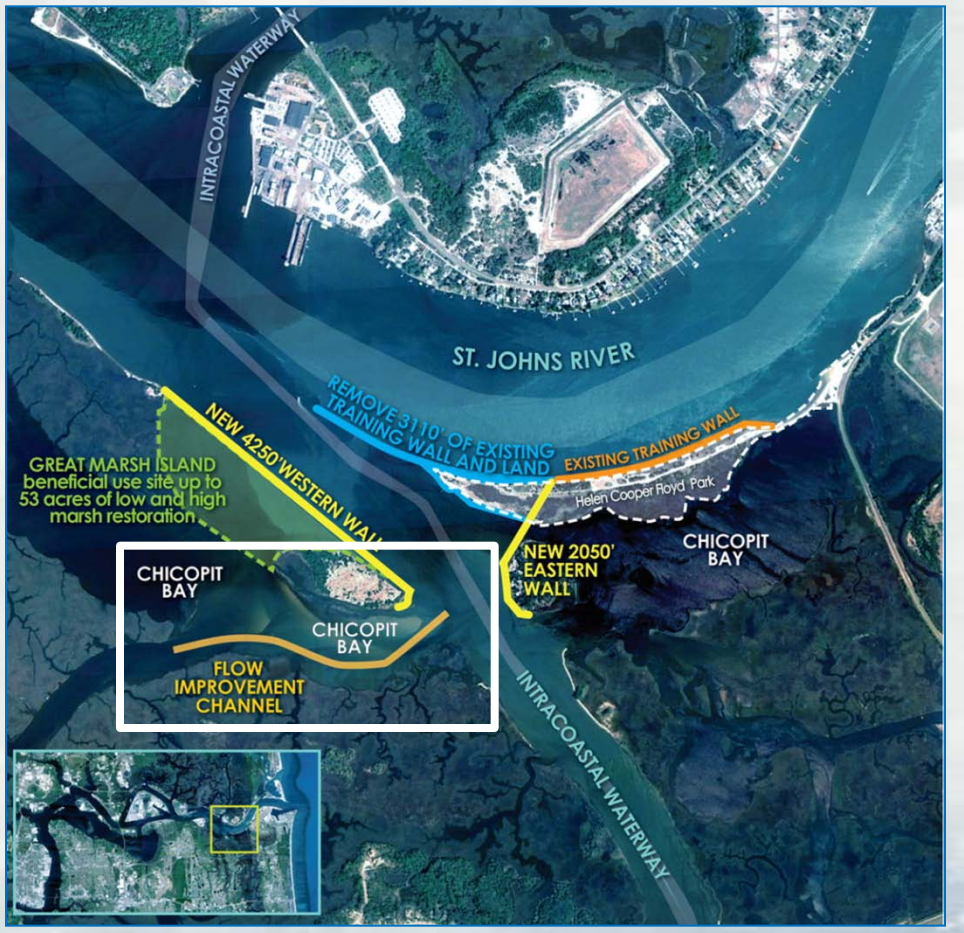
Agency Coordination

- FSM: July 2004
  - Federal and state agencies attended
- ESA coordination with USFWS and NMFS: 2011
- EFH coordination with NMFS: 2011
- Historic resource coordination with SHPO: 2011
- Coordination with Timucuan National Ecological and Historic : 2011
- WQC pre-application meeting: 2011

PUBLIC AND AGENCY REVIEW

ISSUES RAISED

- **Flow Improvement Channel (FIC)**
  - ► **State of Florida requested the FIC be built to maintain water quality and hydrological flow**
  - ► **Local residents requested the FIC be built prior to Great Marsh Island restoration to maintain recreational boating access and property values**
    - **Access will be maintained to the maximum extent practical during construction**
  - ► **FIC to be monitored for 5 years and corrective action recommended if necessary**

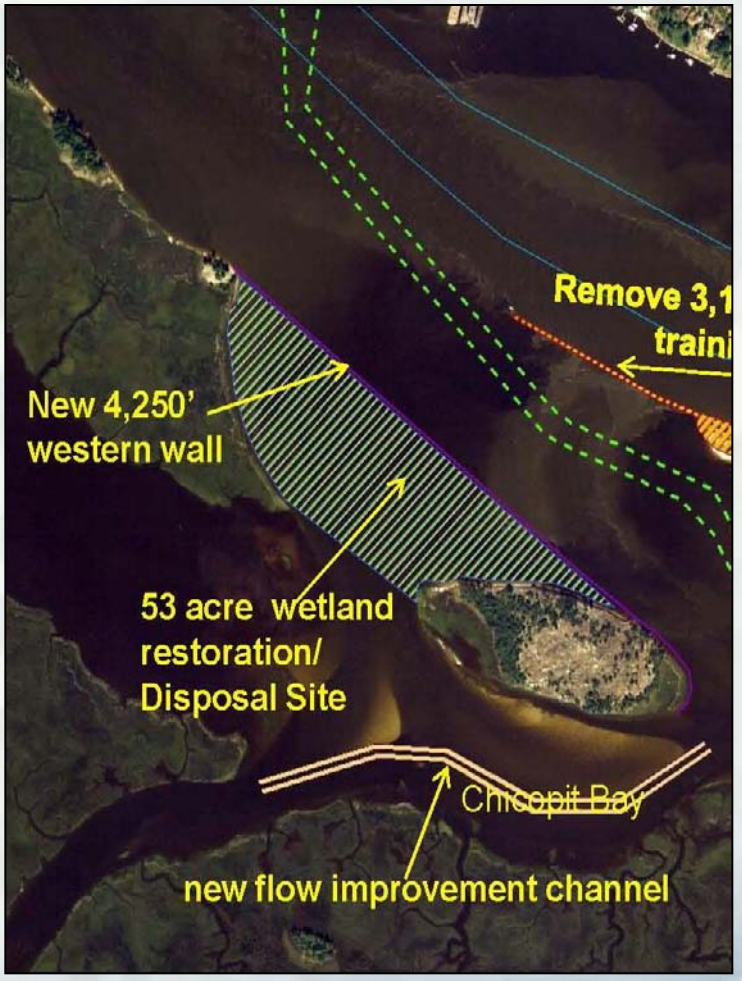


ENVIRONMENTAL OPERATING PRINCIPLES

- **“Strive to achieve environmental sustainability”**
  - Salt marsh restoration would result in a significant gain in wetland acreage
  - FIC would maintain long term water quality in project area
- **“Proactively consider environmental consequences”**
  - Restoration components were incorporated during Value Engineering to offset losses and lower costs
- **“Economic and environmental solutions that support and reinforce one another”**
  - Project design provides economic (navigation) benefits as well as environmental solutions by restoring salt marsh and protecting existing salt marsh from further erosion
- **“Respect the views of individuals and groups”**
  - Views expressed on the plan have been incorporated into the project design
- **“Find innovative win-win solutions to the nation's problems that also protect and enhance the environment”**
  - Mile Point provides this very “win-win” solution by providing navigation and environmental benefits

ENVIRONMENTAL COMPLIANCE

- **EA prepared and coordinated**
  - Includes mitigation plan
- **ESA coordination completed**
- **SHPO coordination completed**
- **Coordination on Section 401 WQC initiated**



PEER REVIEW

- ☑ FSM Guidance Memorandum: October 2004
- ☑ AFB/Draft Report DQC and Legal Certification: November 2008
- ☑ AFB Draft Report ATR Certification: March 2009
- ☑ IRC: August 2009
- ☑ AFB/Draft Report Revised DQC and Legal Certification: March 2011
- ☑ AFB/Draft Report Revised ATR Certification: March 2011
- ☑ AFB: 25 May 2011
- ☑ Hydrodynamic model ATR: June 2011
- ☑ IEPR exclusion: September 2011
- ☑ Environmental Model Approval (UMAM): September 2011
- ☑ Final ATR, DQC, and Legal Certification: October 2011
- ☑ DE Transmittal Notice: October 2011
- ☑ Economics Model Approval (Spreadsheet): November 2011

RECOMMENDED NATIONAL PRIORITIES/GOALS

1. **Reduce the Deficit[1,3]**
   - Indirect effects
2. **Create Jobs and Restore the Economy[1,3]**
   - RED benefits = JOBs, Economic Impact
3. **Improve Resiliency and Safety of Infrastructure[1,3]**
   - Navigations restrictions (implemented for safety) no longer needed
4. **Restore and Protect the Environment[1,3]**
   - Win-win solution through beneficial use of dredged material to restore salt marsh
5. **Maintain Global Competitiveness[2,3]**
   - Removal of restrictions to navigation = future growth in global trade
6. **Increase Energy Independence[2,3]**
   - Reducing delays = reduced transportation costs (fuel)
7. **Improve Quality of Life[2,3]**
   - Improved safety in the Federal Channel

1. FY2011 CW Budget Briefings to OMB, 2. President's 2011 State of the Union Address, 3. 2010 National Security Strategy

USACE CAMPAIGN PLAN

SUMMARY: The recommended plan for this project is consistent with the campaign plan. The project team took the latest policy and planning guidance to help provide safe, effective, and efficient navigation. The solution allows for free movement of vessels thus enhancing the national economy and reduces a major contributing factor of shoreline erosion. The beneficial use of dredged material to create salt marsh, oyster beds, tidal channels, and coastal stand will significantly increase the acreages of these desirable marine habitats.

GOAL 1: Deliver USACE support to combat, stability and disaster operations through forward deployed and reach back capabilities.

More efficient transit to navy fuel depot.

GOAL 2: Deliver enduring and essential water resource solutions though collaboration with partners and stakeholders.

Collaborative efforts toward the new training wall design plus the integrated beneficial use of dredged material to restore Great Marsh Island, as well as restoration of the historic flow improvement channel ALL result in a sustainable water resource solution (Objectives 2a and 2b).

GOAL 3: Deliver innovative, resilient, sustainable solutions to the Armed Forces and the Nation.

See Goal 2 discussion. Regarding risk, monitoring plans have been incorporated into the project; and the project design meets sea level rise guidelines AND is not impacted by sea level rise (Objectives 3a through 3d).

PROJECT IMPLEMENTATION

- **Key Dates:**
  - **February 2012: Execute Accelerated Funds PED Agreement**
  - **March 2012: Chief of Engineer's Report**
  - **Construction - Following Authorization and Appropriations**
- **Construction Duration:**
  - **1 Year: Construction of Relocated Training Wall**
  - **3 Months: Great Marsh Island Final Grading**

***There will be 1 year for a material consolidation period**

PROJECT IMPLEMENTATION

- **Authorization:**
  - **Federal Appropriations**
  - **Contributed Funds PPA – Federal funds**
  - **Advanced Funds PPA**
- **PED Review Plan:**
  - **Initiated at SAJ and under internal review.**
  - **Type II IEPR is not recommended – no impact to life safety**

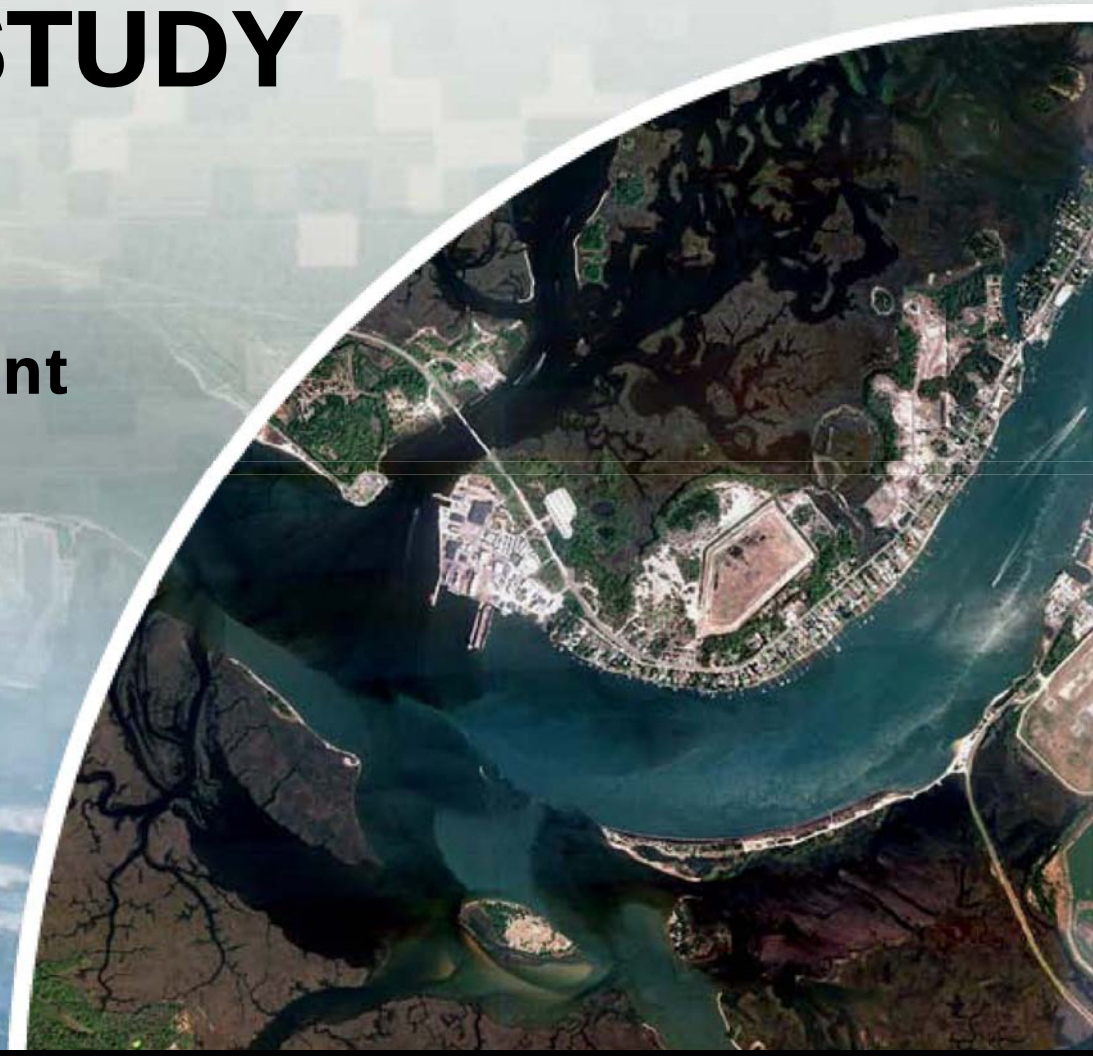
JACKSONVILLE HARBOR MILE POINT NAVIGATION STUDY

Duval County, Florida

Feasibility Report and Environmental Assessment

Presented by:
MG Todd T. Semonite
South Atlantic Division

Civil Works Review Board
December 13, 2011



Key Partners

- Jacksonville Port Authority
- St John’s River Bar Pilots
- Florida Department of Economic Opportunity
- Florida Department of Environmental Protection

OWPR HQ-DC
Team Members

- Wes Coleman, OWPR
- Jeremy LaDart, OWPR, Review Team Lead
- Lee Ware, OWPR
- Jeff Trulick, OWPR
- Scott Murphy, Counsel
- Rodney Hallstrom, Real Estate
- Bradd Schwichtenberg, SAD-RIT
- Marilyn Benner, CWRB Team
- Marianne Matheny-Katz, ASA(CW)

Rationale for SAD Support

- Concur with District Commander's findings & recommendations to Relocate/Reconfigure Mile Point Training Wall
- Plan supported by sponsor & congressional delegation.
- Significantly relieve cross current impacts to shipping and adjacent shorelines
- Plan will provide positive economic and incidental environmental benefits
- Economic Spreadsheet Model has been reviewed and "Approved for Use"
- Anticipate favorable response to draft Chief's Report.
- Report complies with all applicable laws in place at time of submittal to HQ.

Certification of Legal & Policy Compliance

- Legal certification of the final Feasibility Report made by SAJ District Counsel and SAD Division Counsel.
- Compliant with Corps policies
- Technical and Policy Compliance:
  - Review Plan approved
  - External ATR certification complete; all ATR comments have been resolved.
  - Project was excluded from IEPR

SAD Quality Assurance Activities

- Continuous involvement throughout development of the Feasibility Study.
- Worked w/DDNPCX, vertical team in establishment of peer review plan, execution of DQC, ATR, and IEPR Exclusion.
- Review of Policy Compliance Memo: all issues identified in draft Final Feasibility Report have been adequately addressed.
- Examples of quality assurance assistance actions:
  - Economic Workshop to resolve benefit issues
  - Environmental Workshops to resolve disposal placement

SAD Recommendation

- Approve Final Report
- Release for State and Agency Review
- Complete Chief's Report

Agency Technical Review

Mr. Bernard Moseby, Technical Director &

Mr. Robert Finch, Review Manager/Lead Reviewer

Deep Draft Navigation Planning Center of Expertise – South Atlantic Division

HQUSACE POLICY REVIEW CONCERNS

Civil Works Review Board

Jacksonville Harbor (Mile Point)
Navigation Study, Duval County, Florida

Jeremy LaDart
Office of Water Project Review
Planning and Policy Division
Washington, DC – 13 December 2011

US Army Corps of Engineers
BUILDING STRONG®

HQUSACE Team Reviews:

- FSM was held July 2004
- AFB was held May 2011
- Review of Draft Report completed
- Back check of remaining outstanding comments completed December 2011
- Final Feasibility Report/EA HQUSACE review completed

Significant Policy Questions from AFB and Draft Report Reviews

- Planning Constraints.
- Economic Benefit Projections.
- Mitigation Planning.
- Mitigation Costs.
- Operation and Maintenance Requirements.

Planning Constraints

CONCERN: The Alternative Formulation Briefing report did not clearly articulate the planning constraints.

REASON: It was not clear from the report how the planning constraints impacted the initial formulation of alternatives. Specifically, whether all reasonable alternatives were considered.

RESOLUTION: SAJ revised the report to more adequately describe how the planning constraints limited the formulation of alternatives and that all reasonable alternatives were considered.

RESOLUTION IMPACT: Concern Resolved.

Economic Benefit Projections

CONCERN: Two container terminals (Trapac and Hanjin) were either just constructed or anticipated to be constructed. As a result, limited data was available to confidently project future container traffic.

REASON: The justification of the project was highly sensitive to projected future container traffic (vessel movements, commodity volumes, and growth rates).

RESOLUTION: SAJ conducted eleven sensitivity analyses showing a BCR range of 1.08 to 2.5. All scenarios showed justification and the Most Likely Future showed a 1.4 BCR, which is highly certain and defensible.

RESOLUTION IMPACT: Concern Resolved.

Mitigation Planning

CONCERN: The process for mitigation planning did not appear to include sufficient incremental plans.

REASON: The mitigation planning tool used (UMAM) did not include a reasonable range of mitigation alternatives to properly identify requirements as defined in policy.

RESOLUTION: SAJ produced another increment to augment range of potential mitigation plans evaluated.

RESOLUTION IMPACT: Concern Resolved.

Mitigation Costs

CONCERN: Habitat mitigation costs appeared excessively high.

REASON: The costs for mitigation were lumped in with the total project costs in the Cost Effective and Incremental Cost Analysis (CE/ICA).

RESOLUTION: SAJ separated the costs for the mitigation planning from the rest of the project costs.

RESOLUTION IMPACT: Concern Resolved.

Operation and Maintenance Requirements

CONCERN: The report showed that no additional O&M would be required with the recommended project.

REASON: O&M is an important consideration in evaluating and comparing alternatives. The report showed that the recommended plan would require no additional O&M over current requirements for the existing authorized channel.

RESOLUTION: Analysis of with-project maximum flood and ebb tide current velocities showed that there would be little to no significant net increase in shoaling rates.

RESOLUTION IMPACT: Concern Resolved.

HQUSACE POLICY REVIEW TEAM RECOMMENDATION

Release the report and EA for S&A Review

LESSONS LEARNED

- **Start the model review earlier!**
- **Involvement with the agencies early is important to determining the correct plan. The beneficial use site was coordinated early, which identified the need for a flow improvement channel as a part of the mitigation.**
- **Public workshops and meetings are recommended even when not required by policy. The draft report review was very simple after agencies understood the project.**
- **Value Engineering done during the formulation process can offer substantial cost savings.**
- **Beneficial use of dredged material offered both cost savings and buy-in from the resource agencies.**

SAD Lessons Learned

- Importance of continuous coordination with sponsor, industry, and resource agencies.
- Identify all models early and work to secure certification or approval for use
- Engage the vertical team early on technical issues in order to prevent delays and the need to redo work / analysis. HQ staff very receptive to help with our needs on this project.
- Importance of identifying policy issues quickly – *they may not be quickly resolved!*
- *When new guidance is issued insure vertical team agreement on its applicability to ongoing activities.*