JACKSONVILLE HARBOR NAVIGATION STUDY

Duval County, Florida

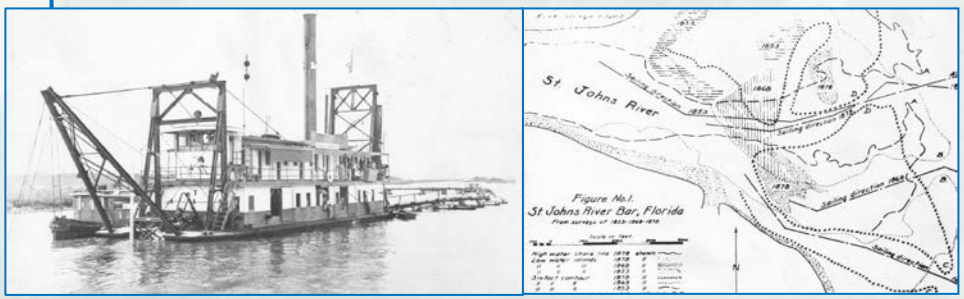
Environmental Symposium

Briefing

August 23, 2013

Jacksonville Harbor Deepening History

1880	1896	1910	1978	2003	2010	2013
12.5 ft	18 ft	30 ft	38 ft	40 ft	40 ft	TSP 47 ft
				Miles 0 to 14.7	Miles 14.7 to 20	

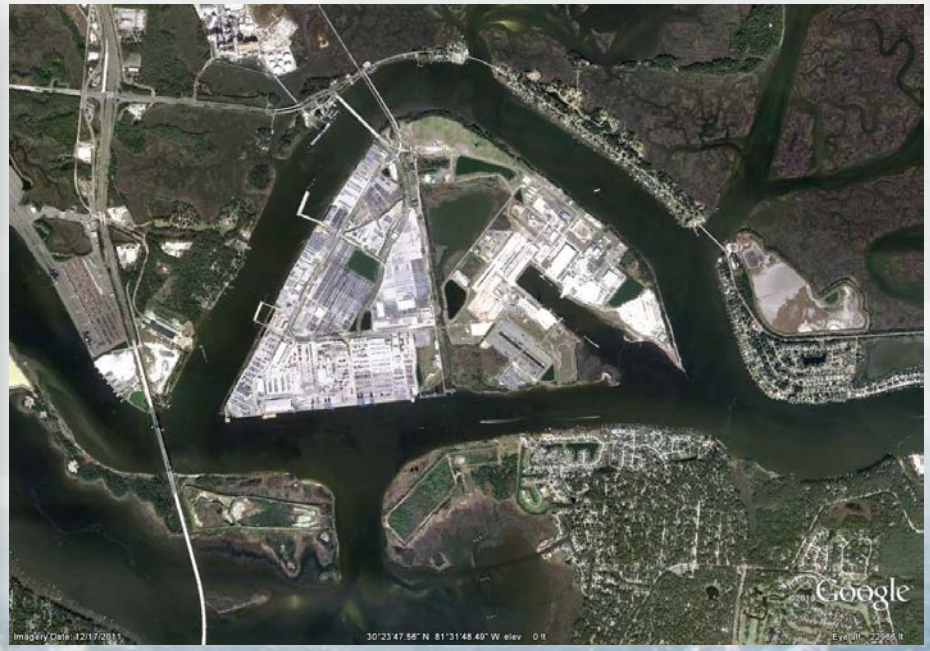


Federal participation begins

Jacksonville Harbor
Channel Alteration
Fulton Cutoff 1952

1943 Aerial

2011 Aerial



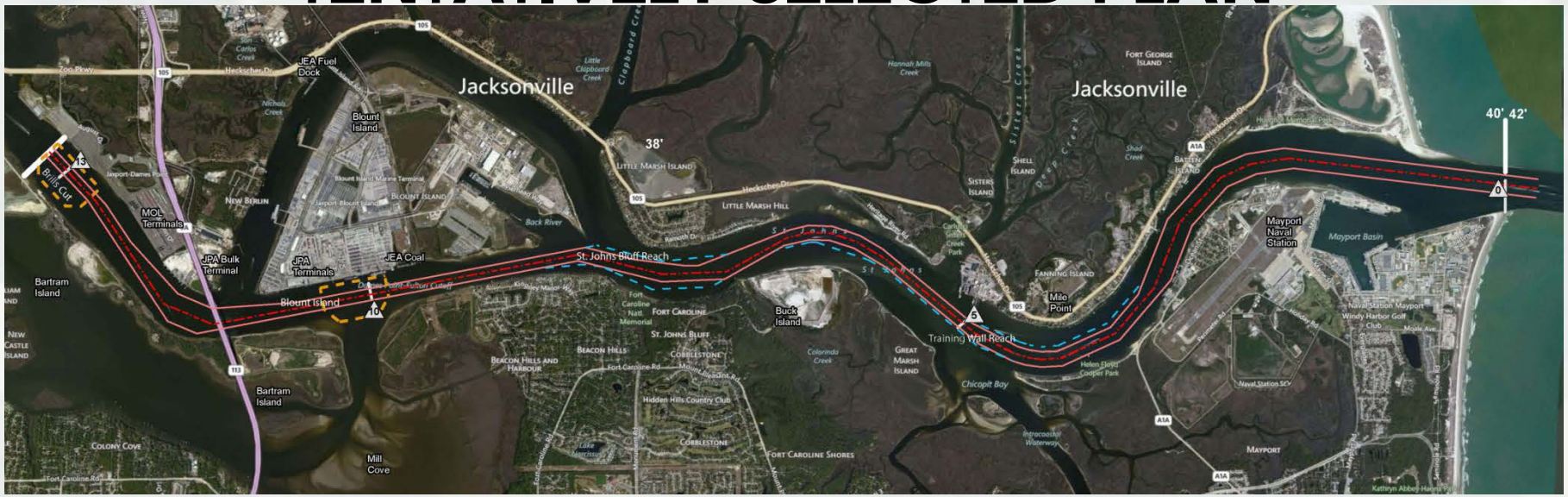
Jax GRRII Study Purpose

- Evaluate reductions Navigation Transportation Costs
- Evaluate Navigation Constraints (one-way traffic areas)
- Evaluate accommodation of Larger Vessels
- Develop a Recommended Plan that builds a sustainable future for the nation and will not result in an significant impact to the St. Johns, its tributaries or the surrounding natural and human environment

Study Area

Segment 1: Entrance Channel to Mile 14 (Reduced to ~ Mile 13)
Segment 2: Mile 14 to 20 (eliminated)
Segment 3: West Blount Island Channel (Cuts F&G) (eliminated)

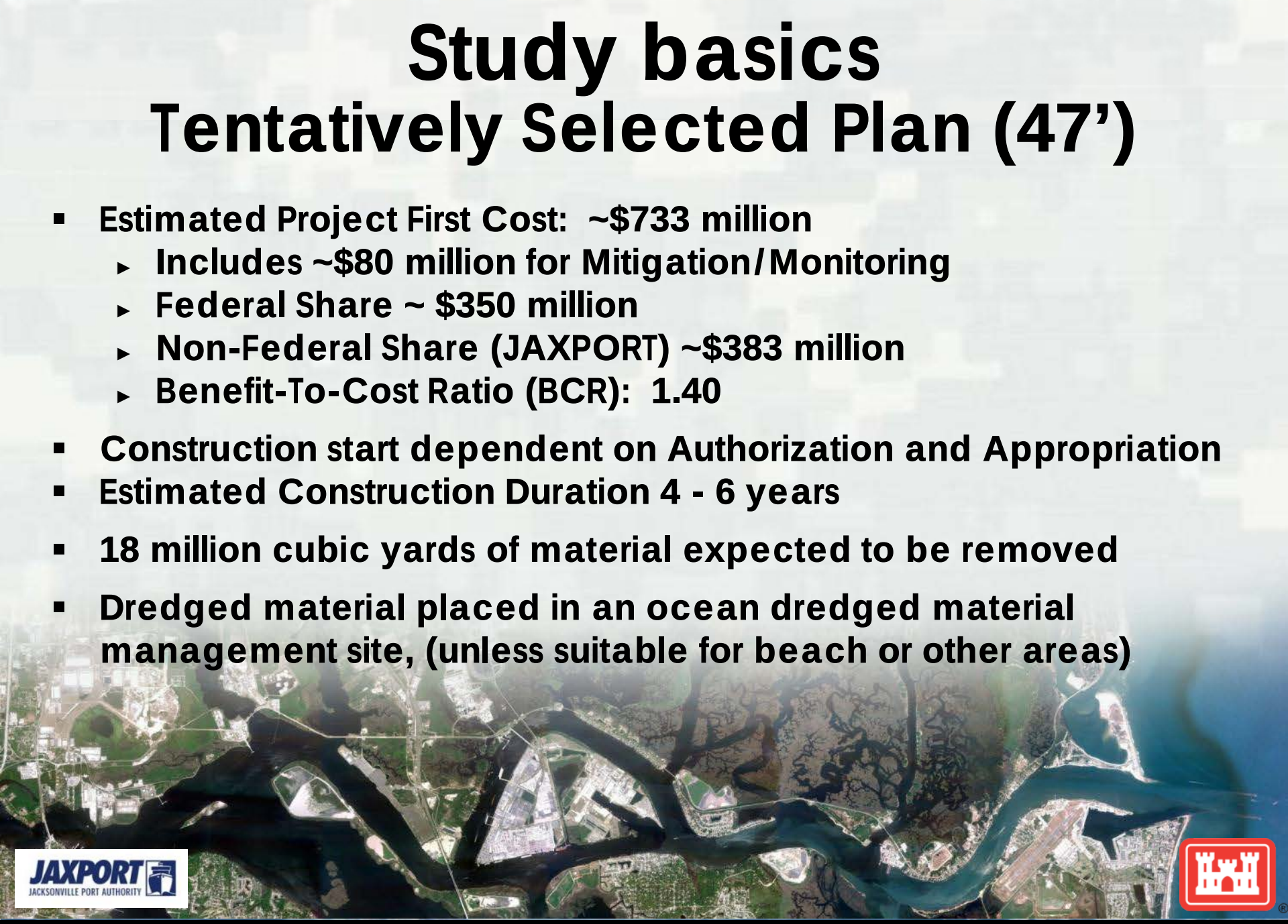
TENTATIVELY SELECTED PLAN



- **Deepening Areas:**
  - Deepen from the Entrance Channel to approximately River Mile 13 from the existing 40-foot depth to 47 feet (LPP), 45 feet (NED)
- **Widening Areas:**
  - Area 1: Mile Point: increase to the north by 200 feet for Cuts 8, 9, 10, 11, 12, & 13
    Training Wall Reach: increase to the south 100 feet by Cuts 14/15 & 16 transitioning to 250 feet for Cut 17 and back to 100 feet for Cuts 18 & 19
  - Area 2: St. Johns Bluff Reach/White Shells Cut: both sides of the channel by varying amounts of up to 300 feet for Cuts 40 & 41
- **Turning Basin Areas:**
  - Blount Island: ~ 2700' long by 1500' wide located in Cut 42
  - Brills Cut: ~2500' long by 1500' wide located in Cut 45

Study basics
Tentatively Selected Plan (47')

- Estimated Project First Cost: ~$733 million
  - Includes ~$80 million for Mitigation/Monitoring
  - Federal Share ~ $350 million
  - Non-Federal Share (JAXPORT) ~$383 million
  - Benefit-To-Cost Ratio (BCR): 1.40
- Construction start dependent on Authorization and Appropriation
- Estimated Construction Duration 4 - 6 years
- 18 million cubic yards of material expected to be removed
- Dredged material placed in an ocean dredged material management site, (unless suitable for beach or other areas)



Jacksonville Harbor Navigation Study

Current Status

Project Timeline
President's "We Can't Wait Initiative"

ACTIVITY	DATES
Public Review Period Ends	July 31, 2013
Submit Final Report to Division Commander	Oct 31, 2013
Chief of Engineer's Report	April 30, 2014
Congress Receives Report for Authorization*	September 30, 2014 **Pending Administration Approvals*
Construction Starts*	****Pending Authorization and Appropriations***

Report Update

- Public Review Period has been extended an additional 60 days to allow the public an opportunity to review ongoing modeling efforts—September 30, 2013
- Environmental/Engineering Modeling Efforts are ongoing
- Comments currently received are being evaluated and addressed.
- Mitigation, Monitoring, Adaptive Management plans are being examined to reflect new modeling reports

Ongoing Modeling Efforts

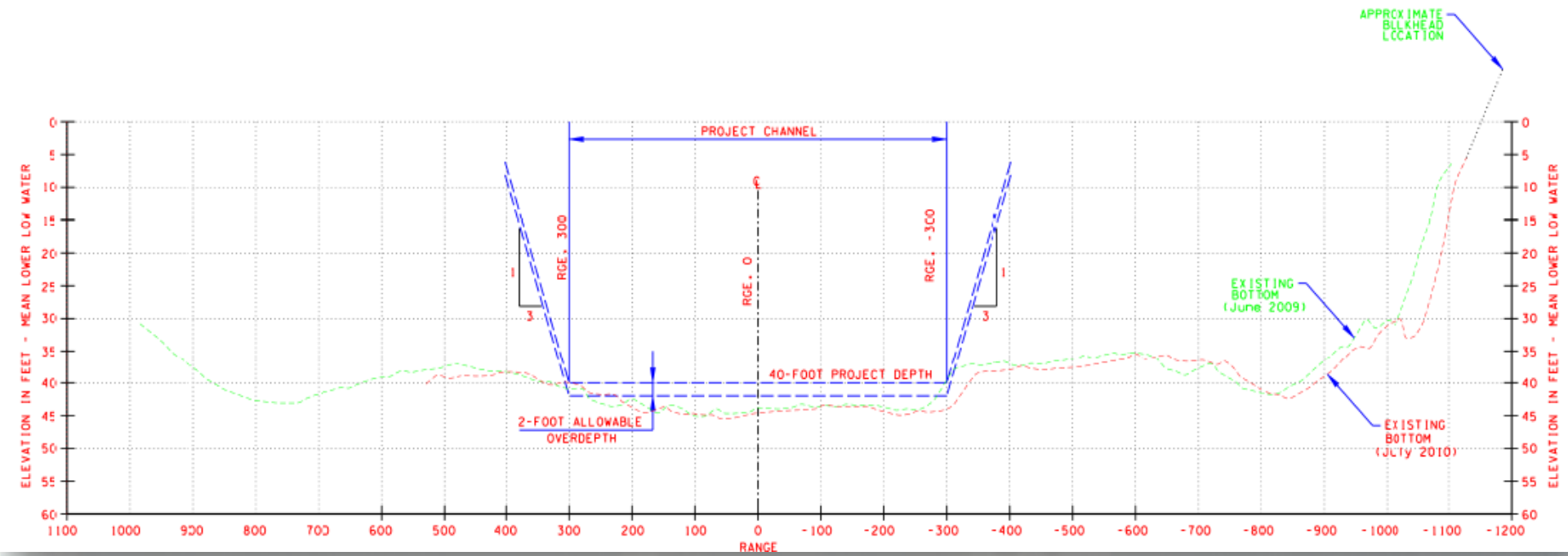
Activity	Public Release Date
USGS Groundwater Report	7 Aug
Shoaling ADH Analysis	20 Aug
Storm Surge/Sea Level Rise Model	20 Aug
Ship Wake ADH Analysis	30 Aug
Ecological Main Stem Model	30 Aug
Revised Adaptive Mgt/Monitoring Plan	30 Aug
EFDC Salinity Main Stem Modeling (Sea Level Rise)	10 Sep
Water Quality Modeling	30 Sep
Tributary/Salt Marsh Modeling	15 Oct

End of public review

Environmental Issues/Concerns

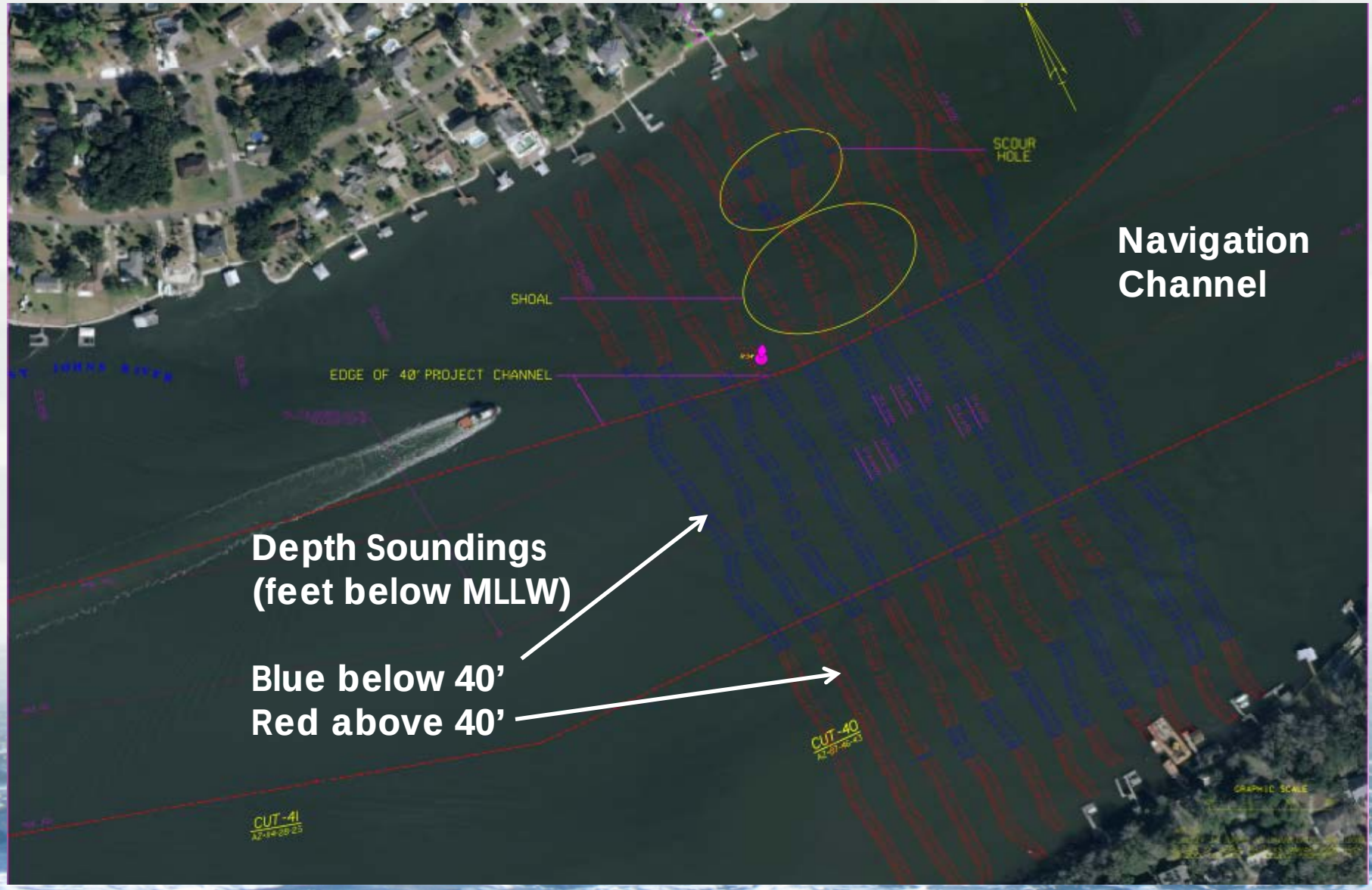
- How Deep? Changes to Salinity
- Salinity Impacts (Freshwater Wetlands, Grass Beds, Fish, Shrimp)
- Monitoring
- Mitigation

Federal Channel
Current Design at Cut 40 (Ft. Caroline area)



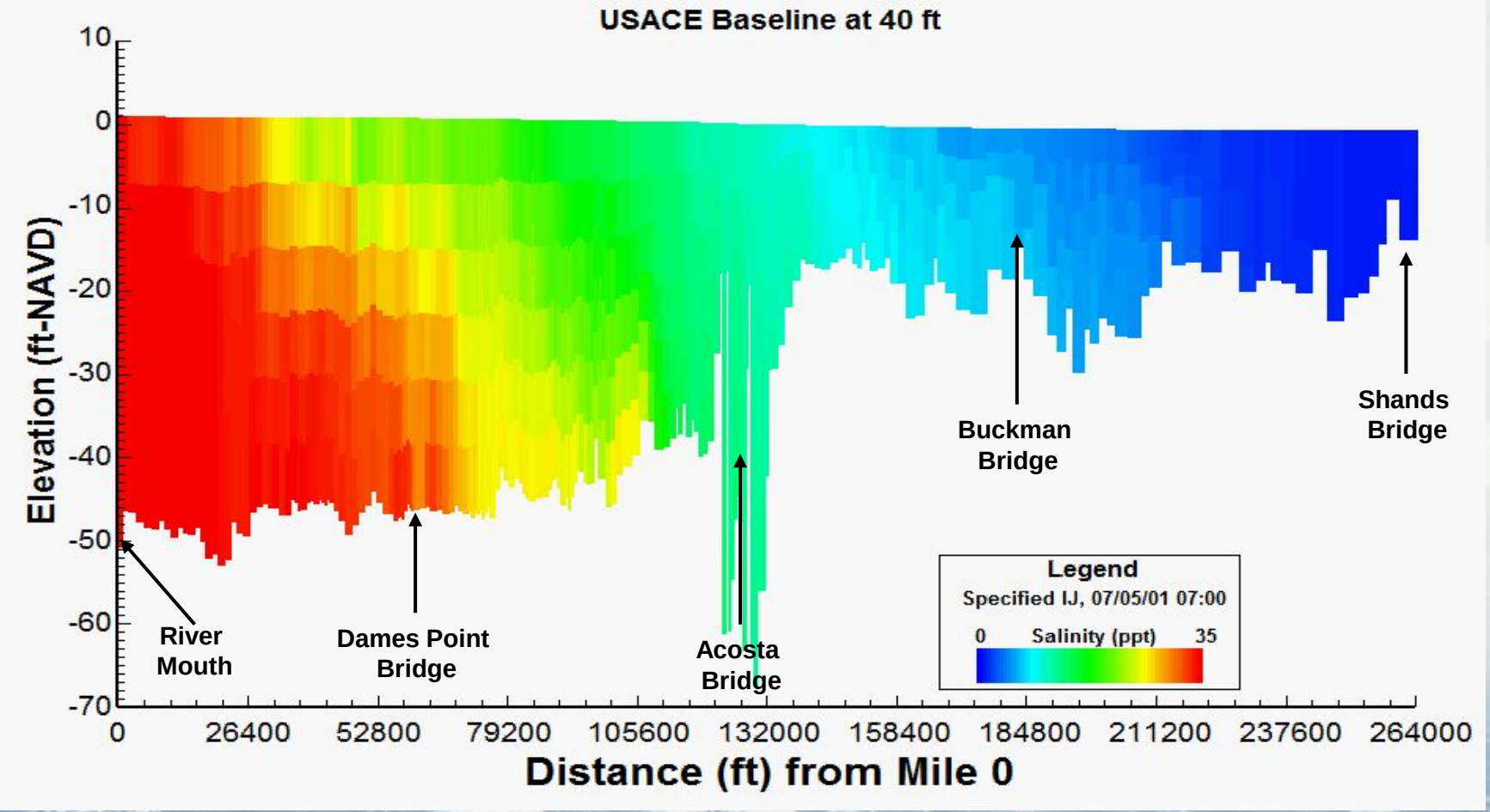
Note: x-axis (width) scale is skewed 10:1 from y-axis (depth)

Federal Channel



Salinity Profile

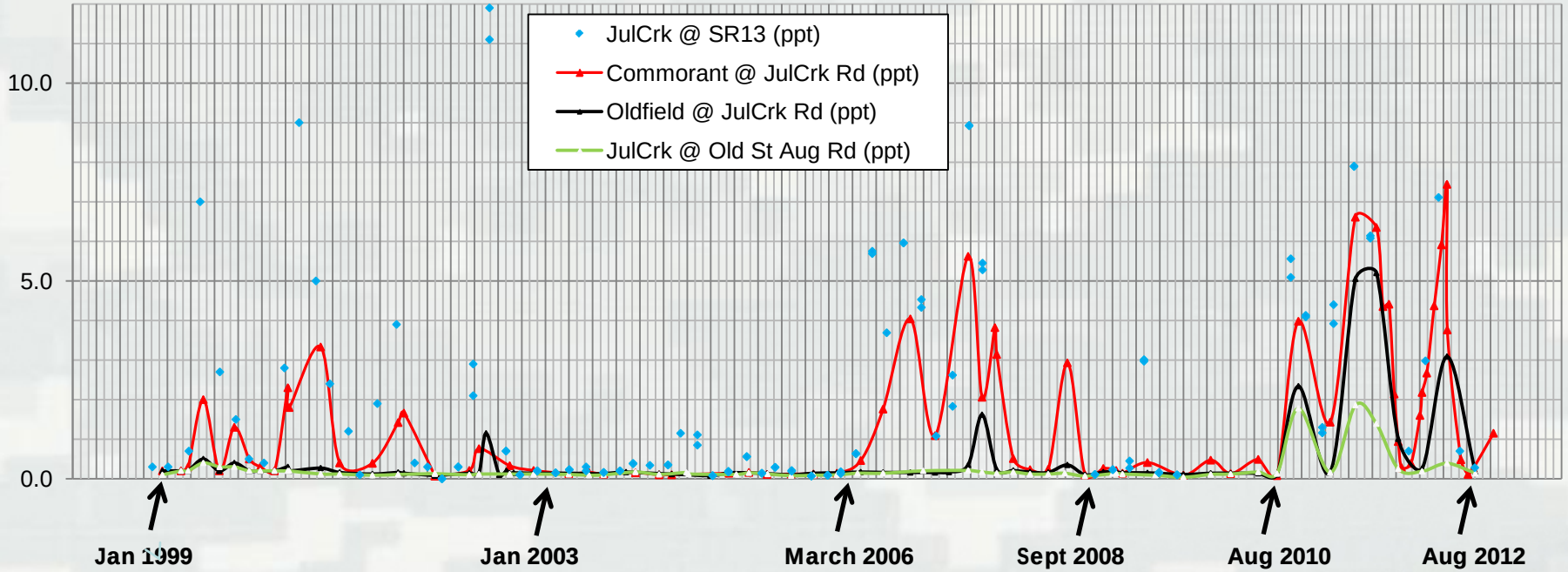
Baseline at 40-foot project depth

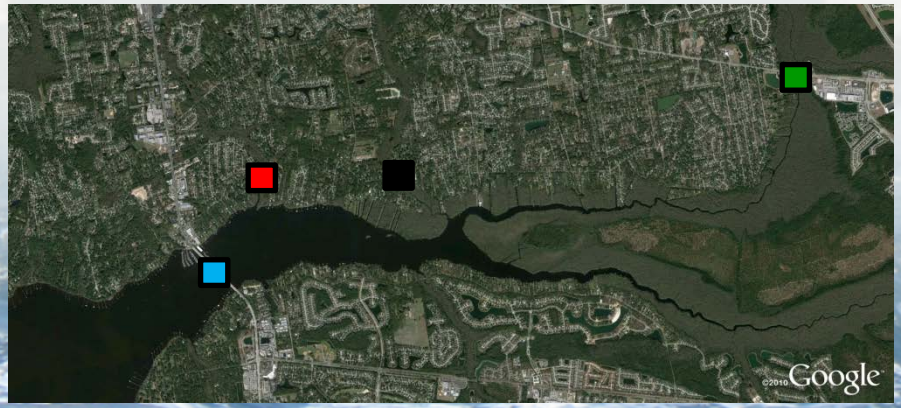


River Mouth

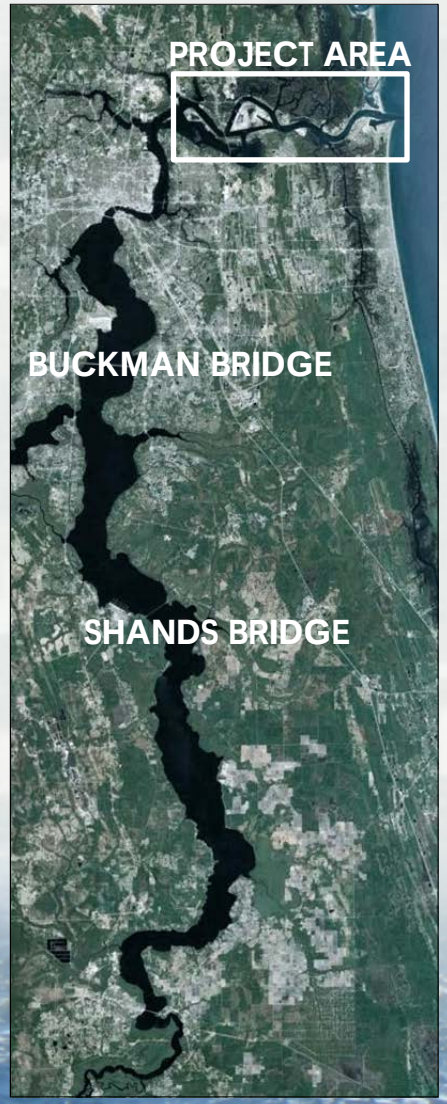
Tributary Salinity Profiles

Historical Data (City of Jacksonville)





Changes to Salinity



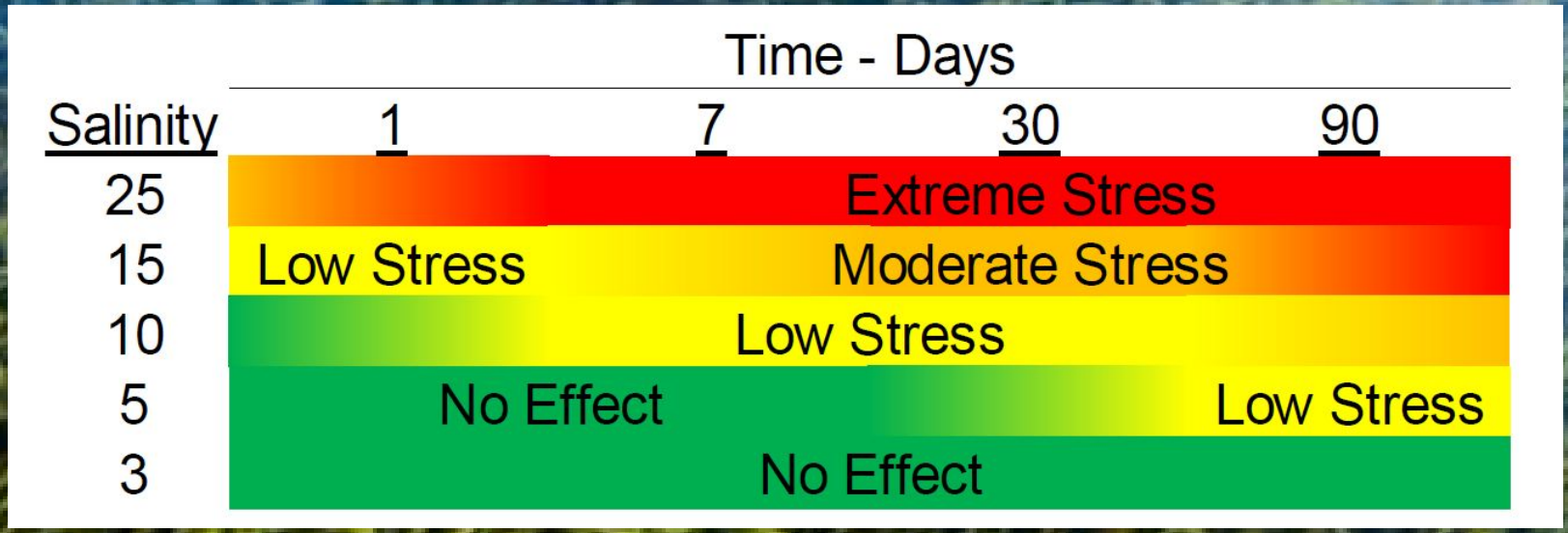
- Hydrodynamic modeling predicts “small” increases in salinity levels within the St. Johns River main stem
- Small in comparison to other factors that can influence salinity such as drought, ocean level, sea level rise, etc.
- Tributary modeling is still ongoing, but effects are expected to be commensurate with findings in the mainstem.

Example, at Buckman Bridge, (Mile 34)

- Without-project average salinity = 2.0 ppt
- With-project average salinity increase < 0.1 ppt
- Extreme dry year (2011) average salinity = 7.3 ppt

Submerged Aquatic Vegetation (SAV) Effects Thresholds

(St. Johns River Water Management District WSIS, 2012)



Freshwater Wetlands Effects Threshold

Exceedence of 1 ppt salinity for more than 25% of time during high tide

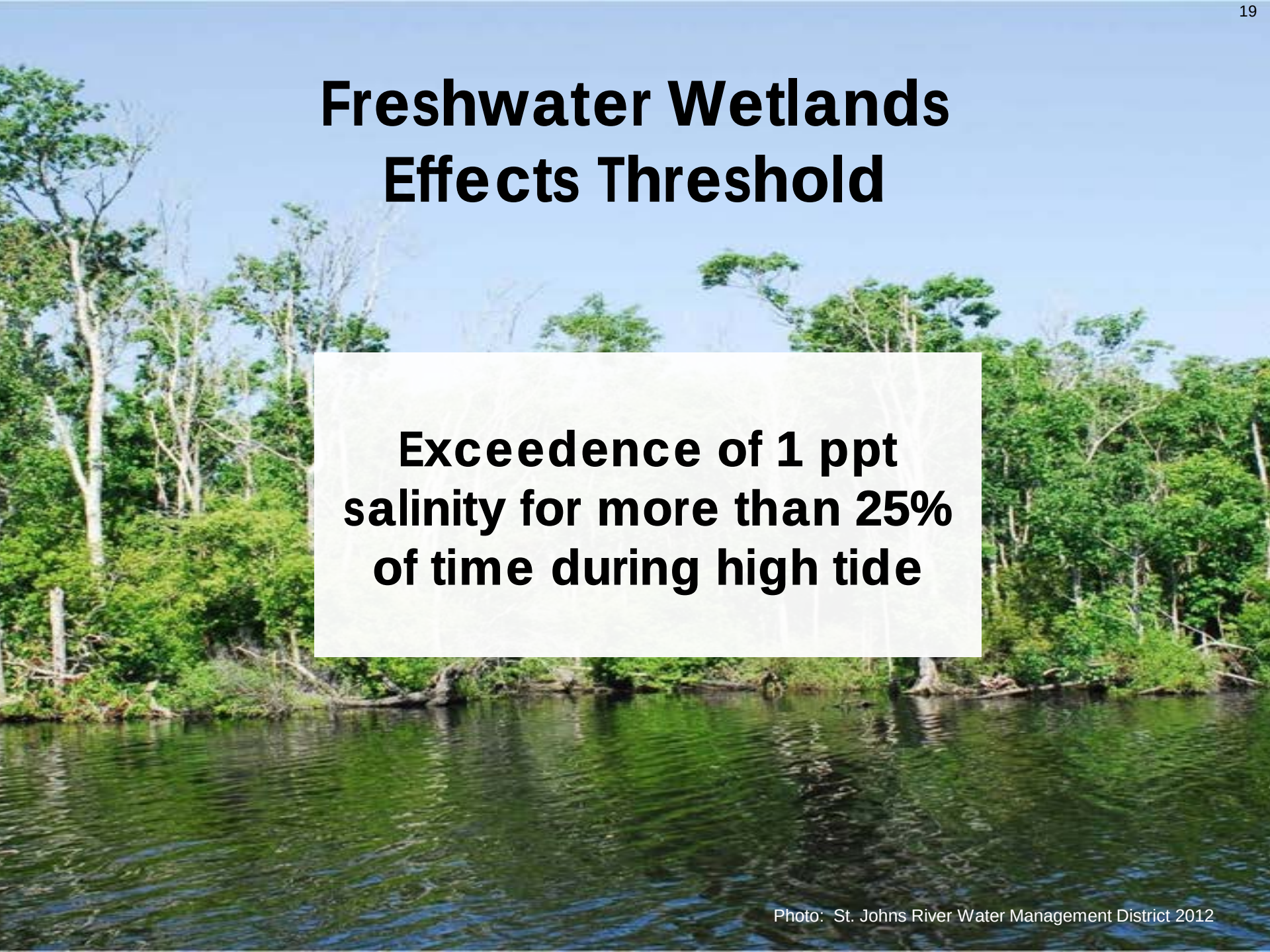


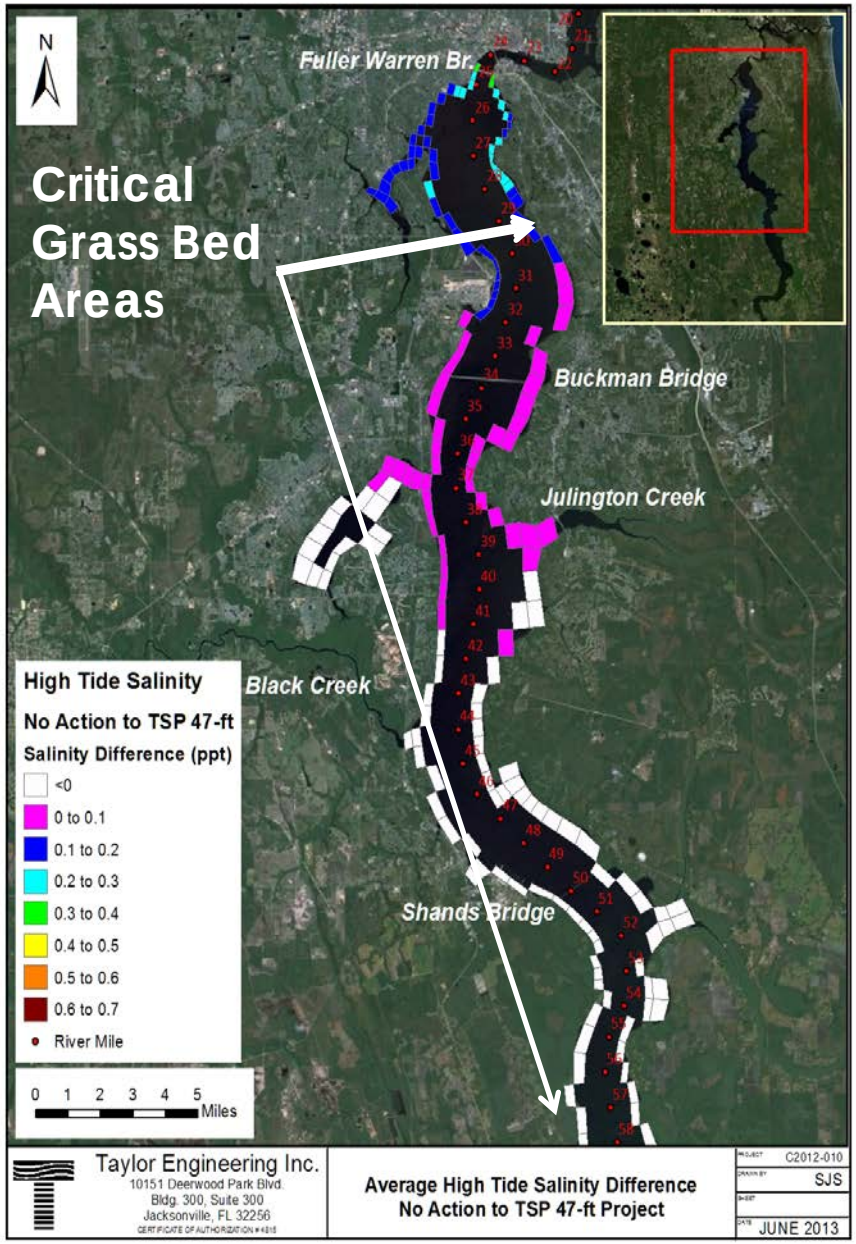
Photo: St. Johns River Water Management District 2012

Salinity Impacts to Ecosystem

Wetlands, Grass Beds, Fish, and Shrimp

Ecological modeling predicts minor main stem salinity effects

- **No elimination of grass beds or wetlands in main stem**
- **Small increases in salinity were noted, (0.1-0.3 ppt). Stress levels caused by drought, ocean levels, etc overwhelm study findings.**
- **Fish and shrimp modeling is ongoing. Preliminary results indicate small change in fish and shrimp distribution, (typically less than 1% north or south).**



Salinity	Time - Days: 1	7	30	90
25	Extreme Stress			
15	Low Stress	Moderate Stress		
10	Low Stress			
5	No Effect			Low Stress
3	No Effect			

Monitoring

USACE proposes a long-term (~15 years) monitoring plan to include:

- **Placement of water quality monitoring stations in the main stem and selected tributaries**
- **Grass beds, wetlands, and fisheries monitoring**
- **Additional modeling would be performed to determine causes of any observed changes**
- **Per the adaptive management plan, if effects from deepening are greater than predicted, additional mitigation will be implemented**

Mitigation Options

Mitigation options being considered include:

- **Preservation of wetlands and important upland habitats**
- **Funding nutrient reduction projects (such as agricultural storm water and wetland treatment facilities) that are not required for meeting regulatory/TMDL targets**
- **Other options are being explored**

Additional Issues/Concerns

- Study Schedule
- Public Review Period
- Confined Blasting
- Bank Erosion

Public Comments

- **Public comments are due <u>September 30, 2013</u>**
- **Please send all comments to:**

  Attn: Paul Stodola
  U.S. Army Corps of Engineers
  P.O. Box 4970
  Jacksonville, FL 32232-0019
  (904)232-3271, Paul.E.Stodola@usace.army.mil

- **The Draft Jacksonville Harbor General Reevaluation Report II (GRR2) and Supplemental Environmental Impact Statement (SEIS) can be found at the following locations:**
  - **<u>Library Locations:</u> Main, Highlands, Mandarin, Regency**
  - **<u>Online:</u> http://www.saj.usace.army.mil/Missions/CivilWorks/Navigation/NavigationProjects/JacksonvilleHarborChannelDeepeningStudy.aspx**