

# ST JOHNS COUNTY, FLORIDA

## COASTAL STORM RISK MANAGEMENT (CSRM) STUDY CIVIL WORKS REVIEW BOARD PRESENTATION

Presented by:  
Colonel Jason A. Kirk, P.E  
U.S. Army Corps of Engineers  
Jacksonville District

March 23, 2017



NON-FEDERAL SPONSOR  
St. Johns County, Florida



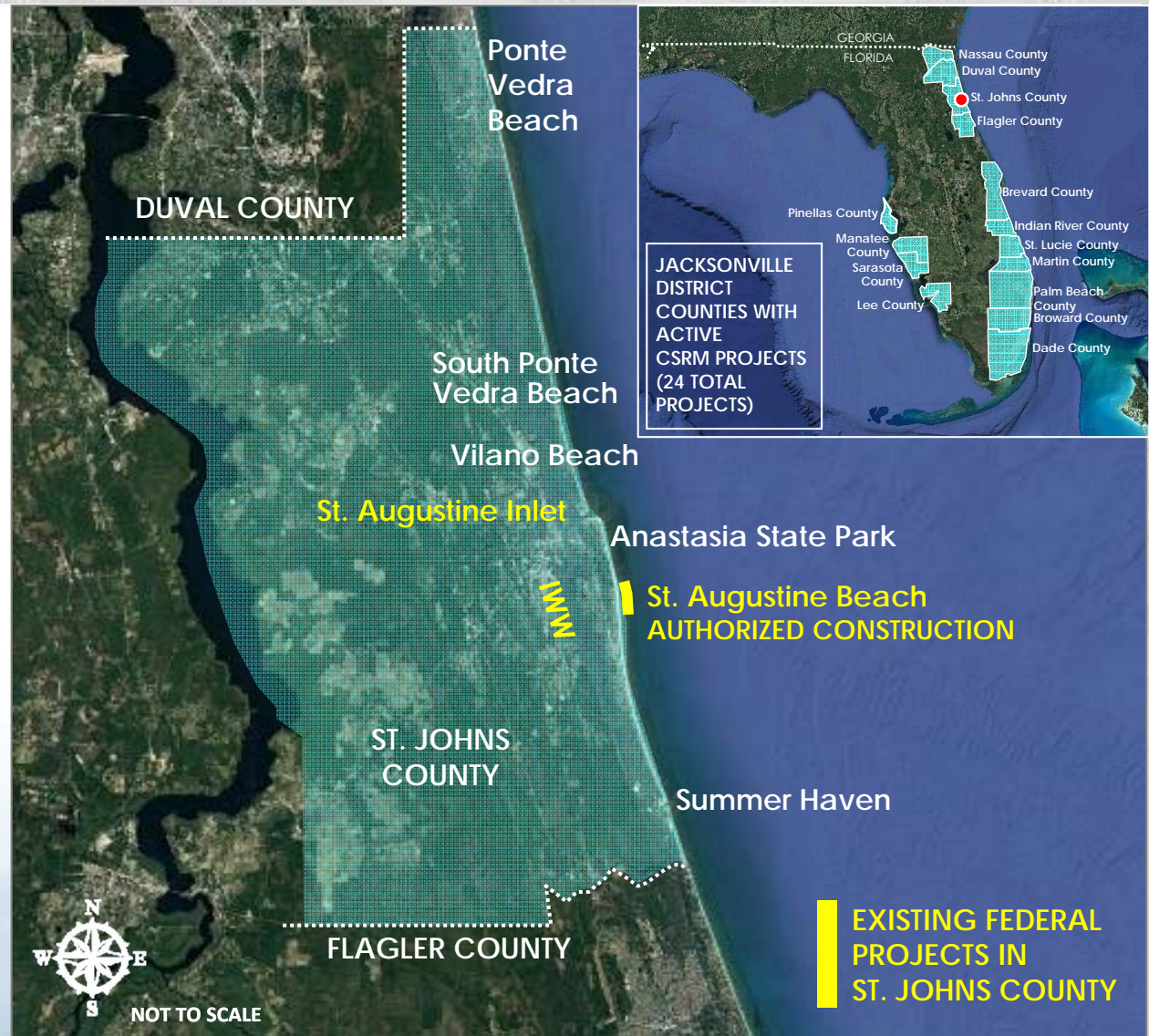
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# AGENDA

- Background: Purpose, Authority, Problems, Opportunities, Objectives, Constraints
- “Bottom Line Up Front”
- Existing & Future Without-Project Conditions
- Alternatives Milestone
- Tentatively Selected Milestone
- Agency Decision Milestone
- Recommended Plan Series
- Conclusions/Risk of No Action

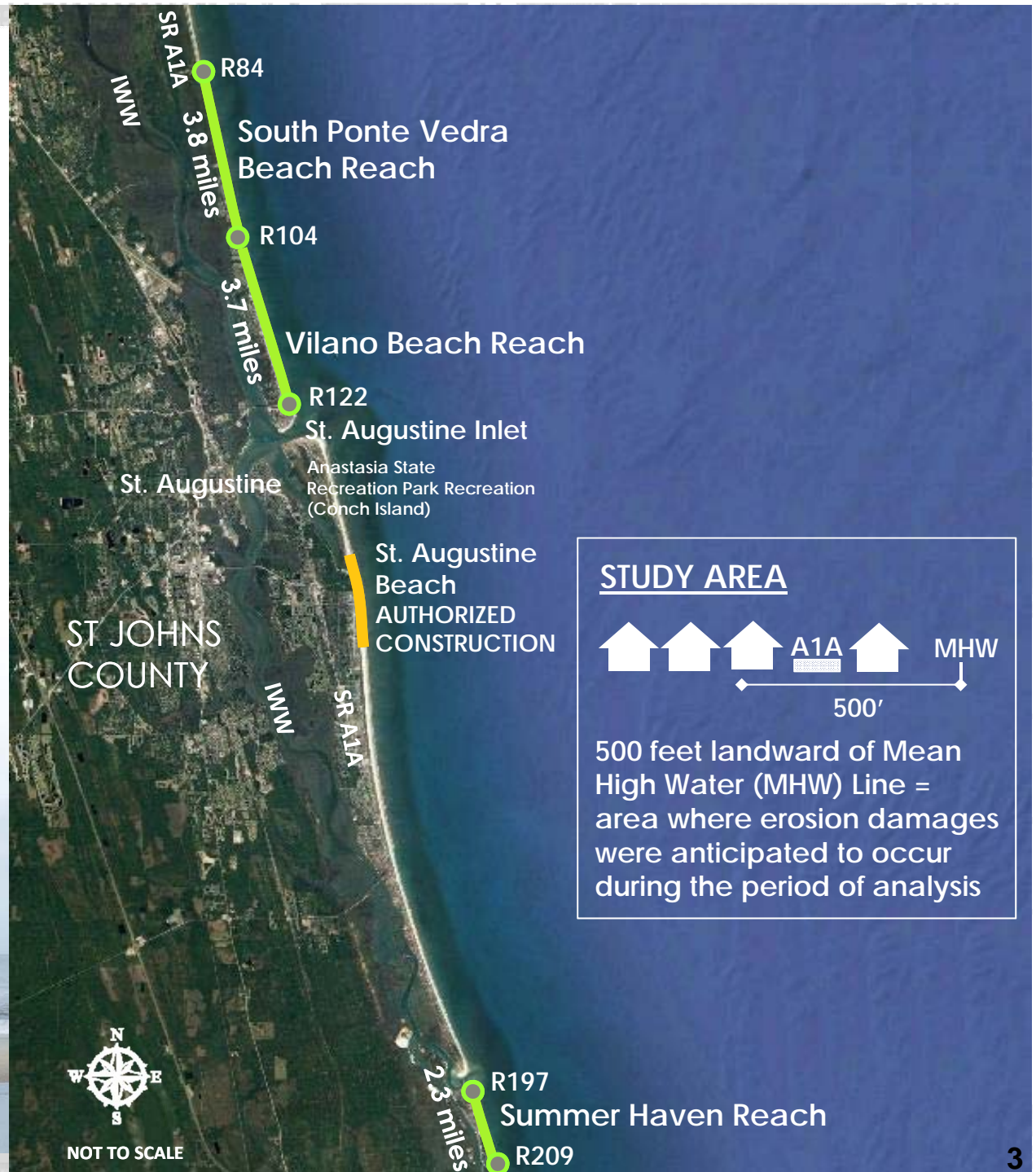




# STUDY AREA & PURPOSE

## STUDY PURPOSE

- 1) Determine if there is economic justification & Federal interest in coastal storm risk management (CSRM) in 3 additional reaches of St. Johns County
- 2) Formulate a CSRM Recommended Plan that includes incidental opportunities to maintain environmental habitat



## STUDY AUTHORITY

On June 21, 2000, House Resolution 2646 granted authority for a survey of the St. Johns County study area, which reads as follows:

"Resolved by the Committee on Transportation and Infrastructure of the United States House of Representatives, that in accordance with Section 110 of the Rivers and Harbors Act of 1962, the Secretary of the Army, acting through the Chief of Engineers, is requested to survey the shores of St. Johns County, Florida, with particular reference to the advisability of providing beach erosion control works in the area north of St. Augustine Inlet, the shoreline in the vicinity of Matanzas Inlet, and adjacent shorelines, as may be necessary in the interest of hurricane protection, storm damage reduction, beach erosion control, and other related purposes."



## PROBLEMS

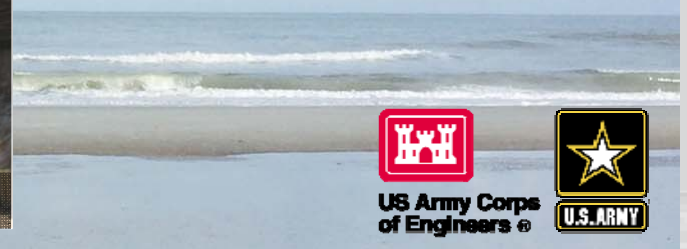


## OPPORTUNITIES

- Improve community & environmental resilience
- Leverage regional sediment management opportunities

## OBJECTIVES

- Reduce storm damage to infrastructure, including the only emergency evacuation route for the northern study area
- Maintain environmental quality provided by the beach/dune system for listed species (sea turtles & avian species)
- Maintain existing recreation (beach & nearshore)



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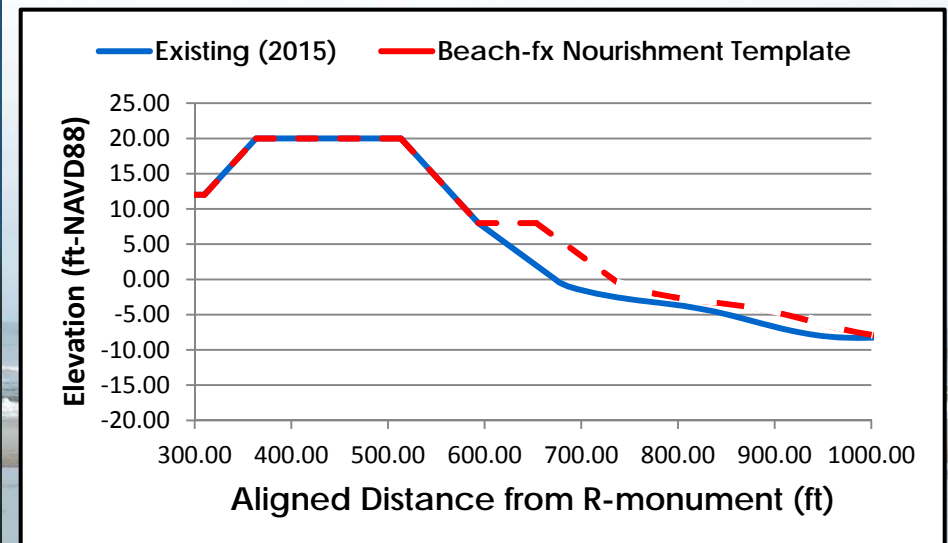
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## RECOMMENDED PLAN 50-year Participation

- 3-mile long project, including:
  - ▶ 60-foot beach & maintenance of 2015 dune along 2.6 miles (from +8 feet NAVD88)
  - ▶ Maximum tapers of 1,000 feet at northern & southern ends
- Initial construction: 1,310,000 cubic yards
- 3 periodic nourishment events (12-year intervals): average 866,000 cubic yards per nourishment
- Sand Source/RSM: Fill template with sand from St. Augustine Inlet System (shoals and channel)
- Total Project Cost (including contingency): \$78,417,000 (FY17 price levels)
- Cost Sharing:
  - ▶ Initial construction: 23.0% Fed / 77.0% non-fed
  - ▶ Periodic nourishments: 17.7% Fed/82.3% non-fed
- BCR: 1.3 @ 2.875%



# RECOMMENDED PLAN FEDERAL INTEREST & THE 4 P&G ACCOUNTS



## NATIONAL ECONOMIC DEVELOPMENT

- Efficient means of reducing risk from storms vs emergency funding for temporary repairs in project area:
  - ▶ \$65,579,000 structure & content value
  - ▶ 105 single-family structures
  - ▶ 10 multi-family structures
  - ▶ 5 commercial structures
- Emergency evacuation route State Road A1A (SR A1A)
- Miscellaneous (parking lots, recreation facilities, etc.)
- Population: ~2,700



## ENVIRONMENTAL QUALITY

- Continuous suitable nesting habitat for threatened & endangered species along entire 3-mile project length (~3.15 acres)
- Critical nearshore reproductive habitat for Loggerhead sea turtles



## OTHER SOCIAL EFFECTS

Facilitates the continuity of the barrier island's major north/south access road (SR A1A)

- 17-mile stretch without east-west access
- 14,000 vehicles per day (FDOT)
- Emergency evacuation route



## REGIONAL ECONOMIC DEVELOPMENT

Advances tourism (#1 industry in Florida)

- ~353,000 tourists per year visit project area \*
- Facilitates the continuity of a Scenic & Historic Coastal Byway (SR A1A) – under Federal Highway Administration's America's Byways Program
- Project location adjacent to St. Augustine (nation's oldest city)

\* Tourist estimate based on 2013 Florida's Statewide Comprehensive Outdoor Recreation Plan (includes in-state and out-of-state tourists)



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# EXISTING & FUTURE WITHOUT-PROJECT CONDITIONS

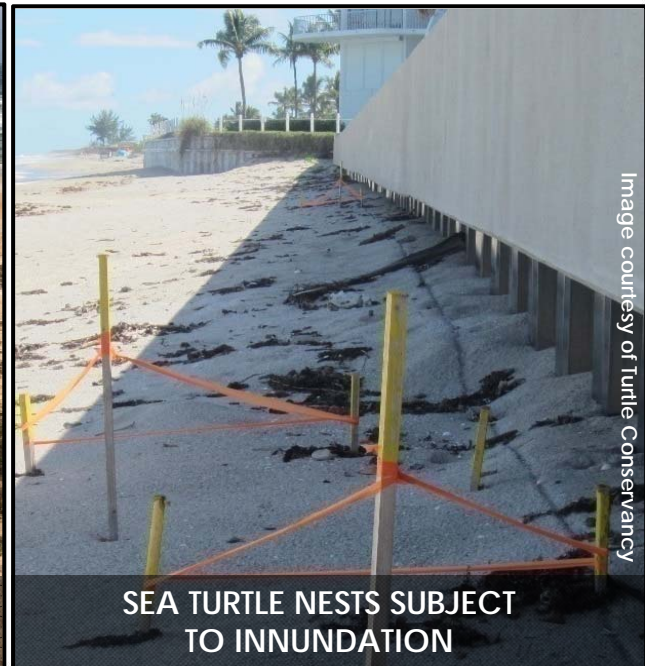
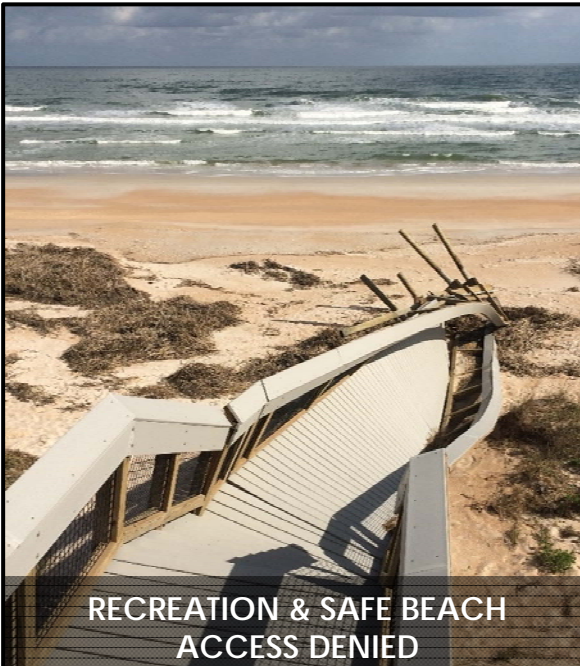
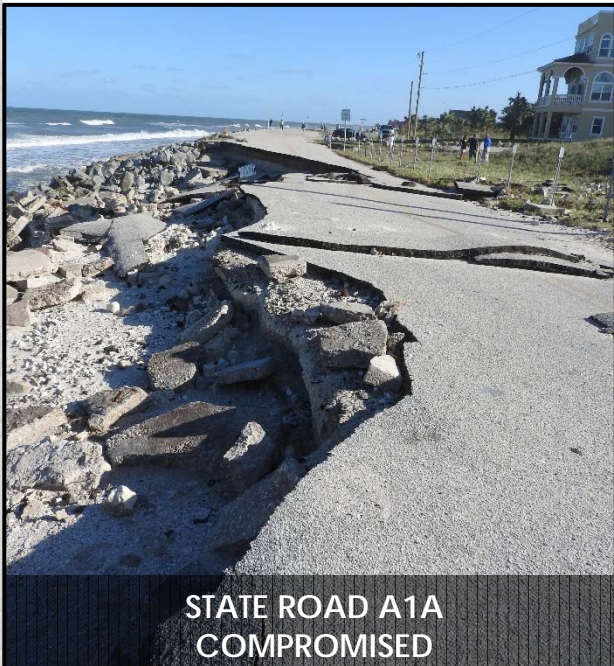
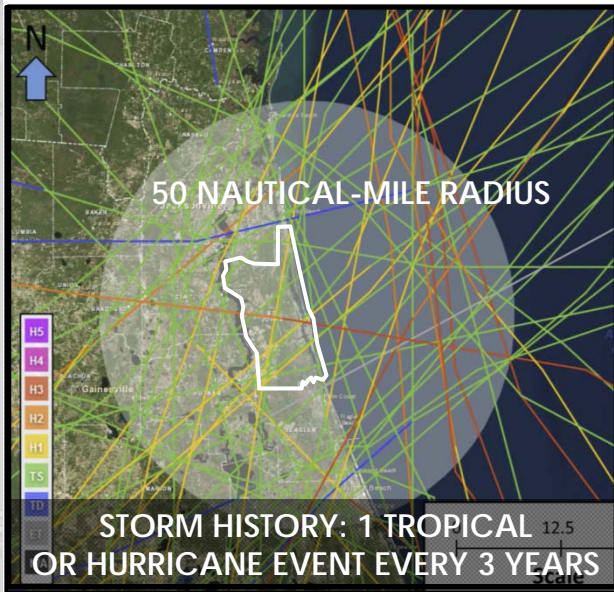


Image courtesy of Turtle Conservancy



# PLAN FORMULATION: ALTERNATIVES MILESTONE MEETING (AMM)

3/10/15



## INITIAL PLAN FORMULATION STRATEGY

- 17 structural & non-structural measures screened using:
  - Objectives & Constraints
  - Federal P&G Accounts (NED, RED, EQ, OSE)
- Remaining measures combined & scaled into **alternatives** based on Federal P&G Criteria - completeness, effectiveness, efficiency, & acceptability

## RESULTS

### Non-Structural/Structural Alternatives for South Ponte Vedra Beach & Vilano Beach Reaches

- No Action
- Acquisition of Land & Structures
- Dunes & Vegetation
- Beach Nourishment
- Beach Nourishment Plus:
  - Dunes & Vegetation
  - Dunes & Vegetation & Sand Covered Soft Structure
  - Dunes & Vegetation & Multi-purpose Artificial Reef
  - Emergent Breakwaters

## DECISION LOG

- Continued inclusion of South Ponte Vedra Beach reach (currently lacks adequate public access)
- Summer Haven reach screened from study (local efforts to acquire property & limited damageable infrastructure)
- Concurrence on array of alternatives

## PATH FORWARD

- Beach-fx modeling (alternatives/future without-project conditions); alternative evaluation; initial cost estimates



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# PLAN FORMULATION: TENTATIVELY SELECTED PLAN (TSP) MILESTONE



## RESULTS

- Formulation of a Tentatively Selected Plan (TSP)

## DECISION LOG

- South Ponte Vedra Beach reach screened from study due to insufficient access
- South Vilano Beach reach screened from study due to insufficient future-without project damages
- Concurrence that TSP includes Coastal Barrier Resources System Unit (no expenditure of Federal funds)
- Formulation of TSP approved
- Permission to release draft document with NEPA for public & technical review

## PATH FORWARD

- Concurrent Review (Corps & Public): February – April 2016
- Agency Decision Milestone scheduled: May 2016

## ALTERNATIVES SCREENED (PRELIMINARY COSTS & BEACH-FX MODELING)

- No Action
- ~~Acquisition of Land & Structures~~
- ~~Dunes & Vegetation~~
- Beach Nourishment
- Beach Nourishment Plus:
  - ▶ Dunes & Vegetation
  - ~~▶ Dunes & Vegetation & Sand Covered~~
  - ~~Soft Structure~~
  - ~~▶ Dunes & Vegetation & Multi-purpose~~
  - ~~Artificial Reef~~
  - ~~▶ Emergent Breakwaters~~

Beach-fx incorporates the cycles of beach erosion & recovery over time

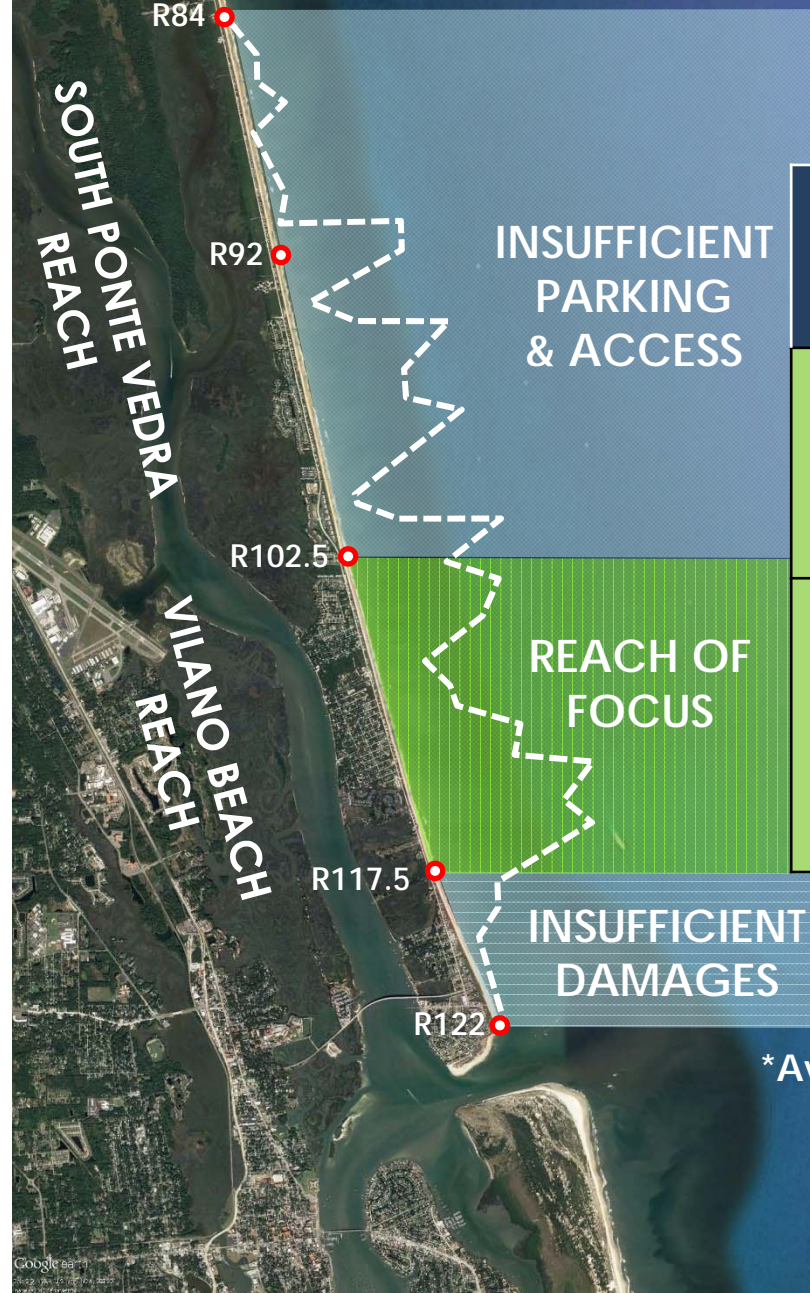


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# TSP MILESTONE PLAN FORMULATION OVERVIEW

(dotted line illustrates without-project damages)



REACH	CATEGORY	ALT	DUNE EXTENSION (FT)	BERM EXTENSION (FT)	AVERAGE ANNUAL NET BENEFITS
R102.5 - R117.5	Beach Nourishment	1	0	100	\$173,000
		3	0	80	\$265,000
		6	0	60	\$410,000
		9	0	40	\$267,000
R102.5 - R117.5	Beach Nourishment + Dunes & Vegetation	2	10	80	\$175,000
		4	10	60	\$342,000
		7	10	40	\$281,000
		13	10	20	\$6,000
		11	20	20	\$109,000

\*Average Annual Net Benefits based on 25 Beach-fx iterations

Benefits = Damages Reduced  
with Each Alternative



# TSP MILESTONE PLAN FORMULATION OVERVIEW

## FINAL ARRAY | BEACH-FX WITH-PROJECT CONDITION

SOUTH PONTE VEDRA  
REACH

R84

R92

R102.5

VILANO BEACH  
REACH

R117.5

R122

 NATIONAL ECONOMIC DEVELOPMENT PLAN (NED)  
Beach Nourishment: 60-foot Berm Extension +  
Maintenance of Existing Dune Profile

ALTERNATIVE #	DUNE EXTENSION (FT)	BERM EXTENSION (FT)	SHORELINE EXTENT (INCLUDING TAPERS)	AVERAGE ANNUAL BENEFITS (\$)	AVERAGE ANNUAL COST (\$)	BCR *	AVERAGE ANNUAL NET BENEFITS (\$)**
6	0	60	102.5-117.5	\$1,732,900	\$1,391,780	1.25	\$341,130
4	10	60	102.5-117.5	\$1,763,260	\$1,465,870	1.20	\$297,390

\* BCR does not include recreation or land loss benefits

\*\* Average Annual Net Benefits based on 100 Beach-fx iterations

Benefits = Damages Reduced  
with Each Alternative

# PLAN FORMULATION: AGENCY DECISION MILESTONE (ADM)



## RESULTS

- TSP modified: Number of periodic nourishments reduced from four to three (reduced mobilization/demobilization costs)

## DECISION LOG

- Corporate endorsement of the TSP as the Recommended Plan
- Approval of path forward for feasibility design & Cost Engineering Mandatory Center of Expertise (MCX) cost certification

## PATH FORWARD

- Incorporate concurrent review comments
- Prepare for Civil Works Review Board

## POST-ADM

- Recommended Plan remains unchanged
- 114 final comments received
- Hurricane Matthew & Recommended Plan Area
  - ▶ ~165,000 cubic yards of sand were eroded due to Hurricane Matthew
  - ▶ Volume is within the standard deviation for the initial construction volume
- Coastal Barrier Resources Act Letter of Compliance received from U.S. Fish & Wildlife Service (USFWS) for sand source (St. Augustine Inlet System)

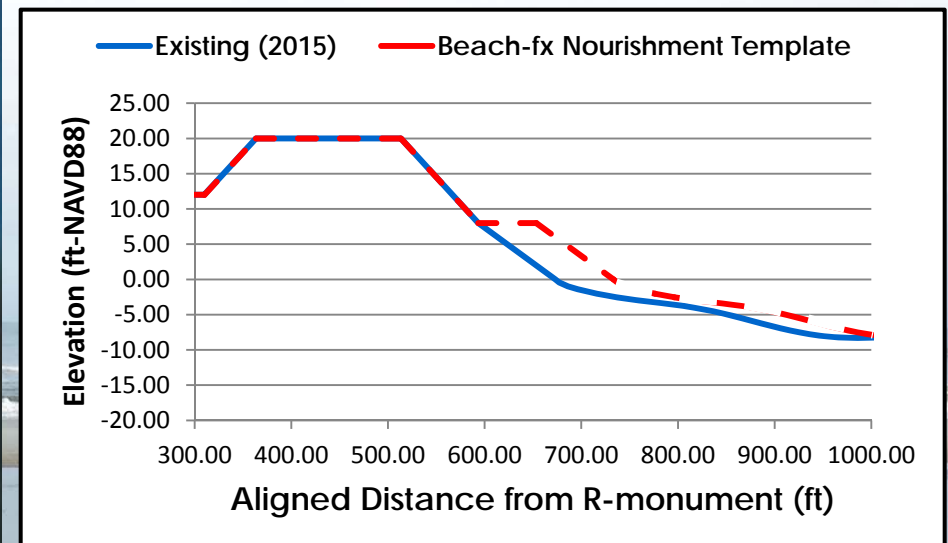






## RECOMMENDED PLAN 50-year Participation

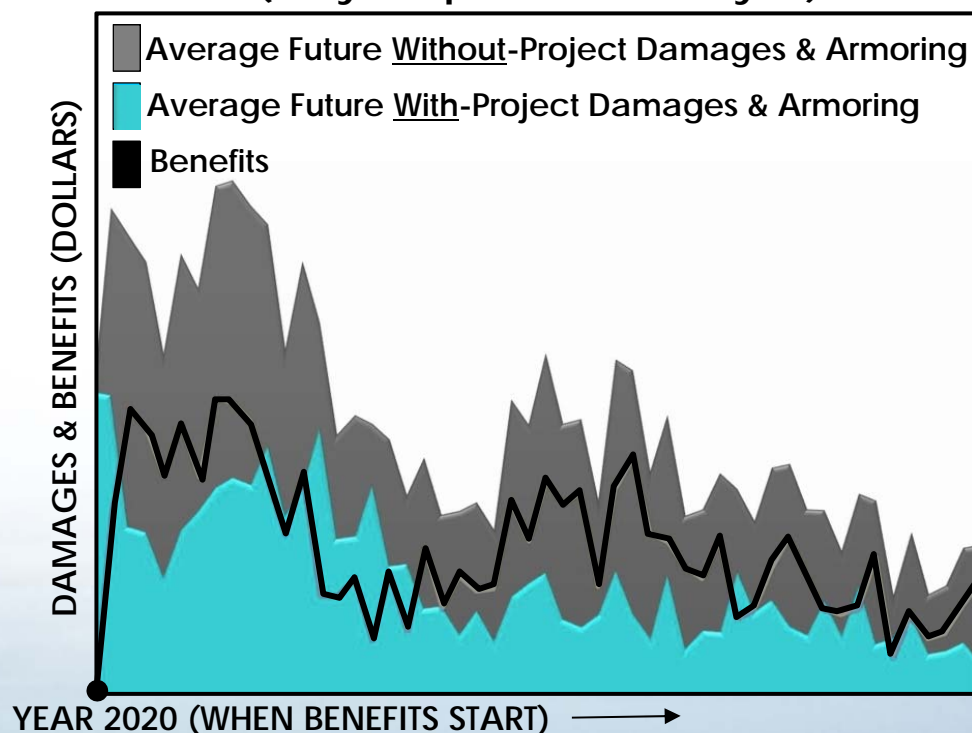
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  - BCR: 1.3 @ 2.875%



# RECOMMENDED PLAN ECONOMIC SUMMARY

ECONOMIC SUMMARY (FY 17 price level, 50-year period of analysis, 2.875% discount rate)	
Total Average Annual Cost	\$2,031,000
Average Annual Storm Damage Reduction Benefits	\$1,683,000
Average Annual Land Loss	\$278,000
Average Annual Recreation Benefits	\$692,000
<b>Average Annual Total Benefits</b>	<b>\$2,653,000</b>
Average Annual Net Benefits	\$622,000
Benefit Cost Ratio (BCR) (2.875 % discount rate)	1.3

## 71% REDUCTION IN DAMAGES (50-year period of analysis)



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# RECOMMENDED PLAN ENVIRONMENTAL SUMMARY

## BENEFITS TO FEDERALLY-LISTED SPECIES

- Threatened Species: Loggerhead Turtle, Red Knot, Piping Plover
- Endangered Species: Leatherback Turtle, Green Turtle
- Minimum of 3.15 acres of continuous nesting habitat (sea turtles & shorebirds) will be maintained over 50 years
  - ▶ Potentially zero habitat in the future without-project condition
  - ▶ Potentially saving over 300,000 sea turtle eggs

## CONSTRUCTION

- Berm & dune slopes designed to closely mimic the natural beach
- Sand source compatible with native beach sand
- Dune will be vegetated with native plants to stabilize the dune & promote wildlife usage (shelter; food; slope change signaling turtles to nest; etc.)
- No hardbottom or coral resources located in the sand source or placement areas
- Standard manatee, sea turtle & shorebird protective measures will be employed during construction

## CULTURAL RESOURCES

- Reduce potential damages to Scenic & Historic Coastal Byway SR A1A
- No impacts to cultural resources



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# RECOMMENDED PLAN ENVIRONMENTAL COMPLIANCE

- ☒ Public Involvement
- ☒ Environmental Assessment Prepared & Coordinated (NEPA)
- ☒ Endangered Species Act Coordination (USFWS SPBO\* ,P3BO\*\*)
- ☒ Endangered Species Act Coordination (NMFS SARBO\*\*\*)
- ☒ National Historic Preservation Act (SHPO)
- ☒ Essential Fish Habitat Coordination (NMFS)
- ☒ Coastal Barrier Resources System (USFWS)
- ☒ Clean Water Act (Section 404B)
- ☒ Clean Water Act (Section 401) – conditional until PED
- ☒ Coastal Zone Consistency (FDEP) – conditional until PED

## Public Involvement

- Scoping Letters: August 17, 2005; September 16, 2008
- Draft Report Public Comment Period: February 17, 2016 to April 4, 2016
- Community Workshops: June 2016
- Project Website
- Cooperating Agencies: National Marine Fisheries Service (NMFS) & Florida Department of the Environment (FDEP)

\* SPBO: USFWS Statewide Programmatic Biological Opinion  
\*\* P3BO: USFWS Piping Plover Programmatic Biological Opinion  
\*\*\* SARBO: NMFS South Atlantic Regional Biological Opinion

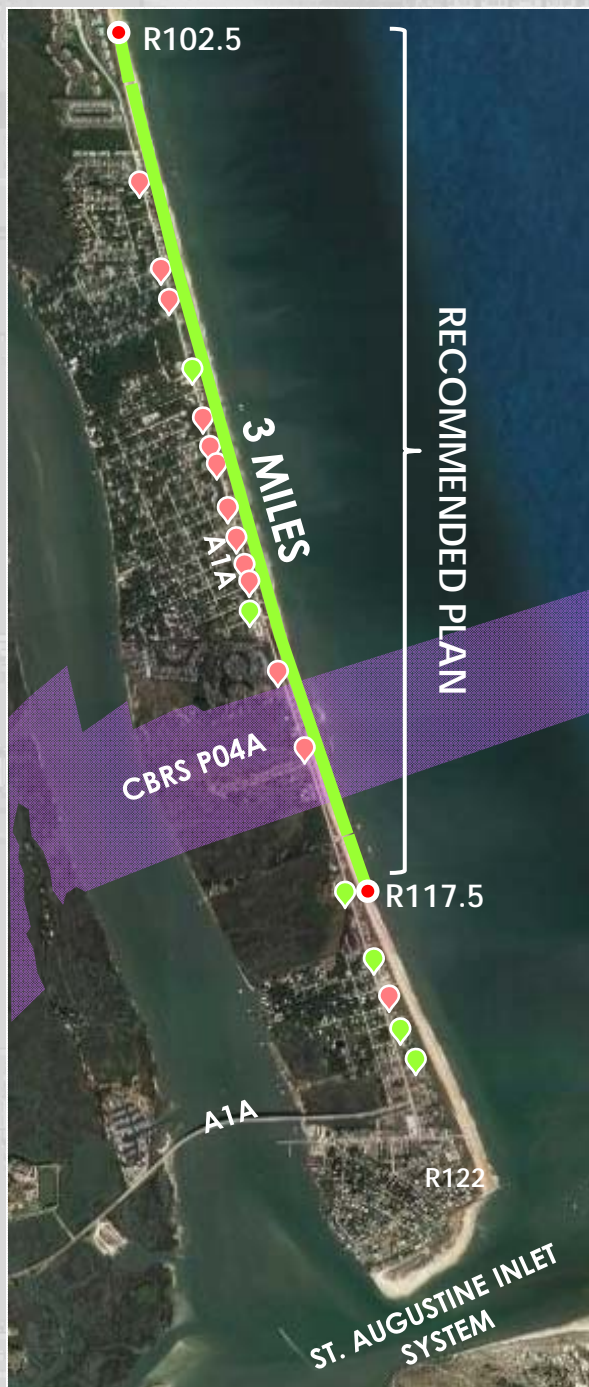


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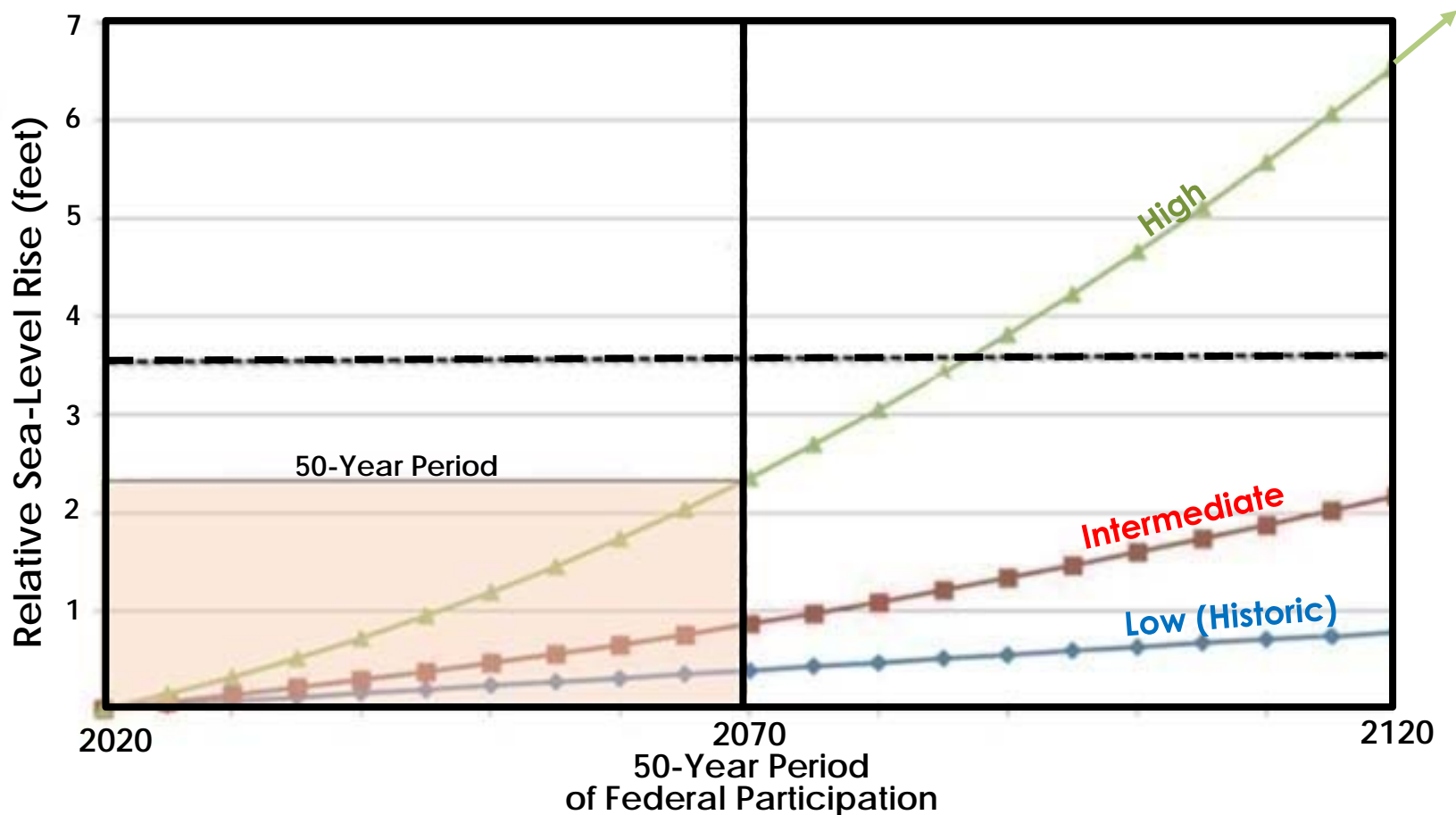
# RECOMMENDED PLAN COST SUMMARY

## COST SHARING: PARKING/ACCESS & CBRA

- 12 Public Access Points (No Parking)
- 3 Public Access Points with Parking
- CBRS Unit

SUMMARY OF PROJECT COST SHARING (PROJECT FIRST COSTS) (FY17 PRICE LEVELS)					
R102.5 - R117.5 (TOTAL PLACEMENT AREA, INCLUDING MAXIMUM TAPERS)					
INITIAL CONSTRUCTION					
ITEM	FEDERAL COST SHARE	FEDERAL COST	NON- FEDERAL COST SHARE	NON- FEDERAL COST	PROJECT FIRST COST
Coastal Storm Risk Management Costs	23.0%	\$5,712,000	77.0%	\$19,122,000	\$24,834,000
Non-federal LERRD Contribution*	0.0%	\$0	-	\$943,000	-
Non-federal Cash Contribution	-	-	-	\$18,179,000	-
PERIODIC NOURISHMENT					
Periodic Nourishment	17.7%	\$9,484,000	82.3%	\$44,099,000	\$53,583,000
INITIAL CONSTRUCTION + PERIODIC NOURISHMENT					
Final Project Cost Share & Cost (50 years)	-	\$15,196,000	-	\$63,221,000	\$78,417,000
* Includes non-federal admin costs only					
NOTE: Dollar values are rounded					

# RECOMMENDED PLAN SEA-LEVEL CHANGE



- BCR (Intermediate SLC): 1.11 and BCR (High SLC): 1.04
- Average dune height of 17 to 19 feet MSL in study area
- Most infrastructure within the study area is located at or above this elevation
- With a 50-year storm tide elevation of 7.8 feet, an 11.2-foot increase in sea level would be needed to meet or exceed the 19-foot MSL dune height



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# RECOMMENDED PLAN

## USACE COMPLIANCE REVIEWS

- ☒ Coastal PCX Review (throughout study process)
- ☒ Value Engineering Certification: October 2016
- ☒ Independent External Peer Review (IEPR):  
Exclusion November 2015
- ☒ Final Agency Technical Review (ATR): October 2016
- ☒ Cost Certification: February 2017
- ☒ Legal Certification: October 2016
- ☒ SAD Policy Compliance Review: January 2017
- ☒ HQ Review: March 2017
- ☒ Environmental Operating Principles  
(throughout project lifecycle)



Environmental Operating Principle #3:  
Creating mutually supporting economic  
& environmentally sustainable solutions



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# RECOMMENDED PLAN: COST, SCHEDULE & LIFECYCLE RISK



\* DATES SUBJECT TO AUTHORIZATION/APPROPRIATIONS

## RISK REGISTER

- The Risk Register informed the planning process
- Risks that could impact implementation are captured in the Cost & Schedule Risk Assessment (CSRA)

## COST & SCHEDULE RISK

- Project First Cost: \$78.4M
  - ▶ Initial Construction: \$24.8M
  - ▶ 3 Periodic Nourishments: \$53.6M
- \$17M (28%) Contingency:
  - ▶ \$16.3M (27%) Cost Risk
  - ▶ \$.7M (1%) Schedule Delay
- Cost MCX Certified: February 2017

## LIFECYCLE RISK

- Coastal storm damages in the project area, caused primarily by erosion, are reduced ~ 71% over the 50-year period of analysis (2020-2070) leaving residual damages of 29%

## COST DRIVERS

- Fuel prices capture the risk associated with large fluctuations in commodity prices in the fuel market
- Bidding climate captures risk associated with severe economic swings or weather events that could impact industry availability & decrease the number of potential bidders

## SCHEDULE DRIVERS

- Funding stream
- Environmental impacts & restrictions capture the risks associated with increased environmental regulation over time, which could delay or limit dredging & beach placement
- Bidding climate



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# PLAN FORMULATION: CIVIL WORKS REVIEW BOARD (CWRB)



## DECISIONS TO BE MADE \*

- Request approval and release of the proposed Chief's Report for State & Agency, & final NEPA review
- Request acceptance that identified study & project risk from the ADM has been addressed
- Request acknowledgment of project risk & uncertainty carried forward into PED

\* Per PB 2017-01



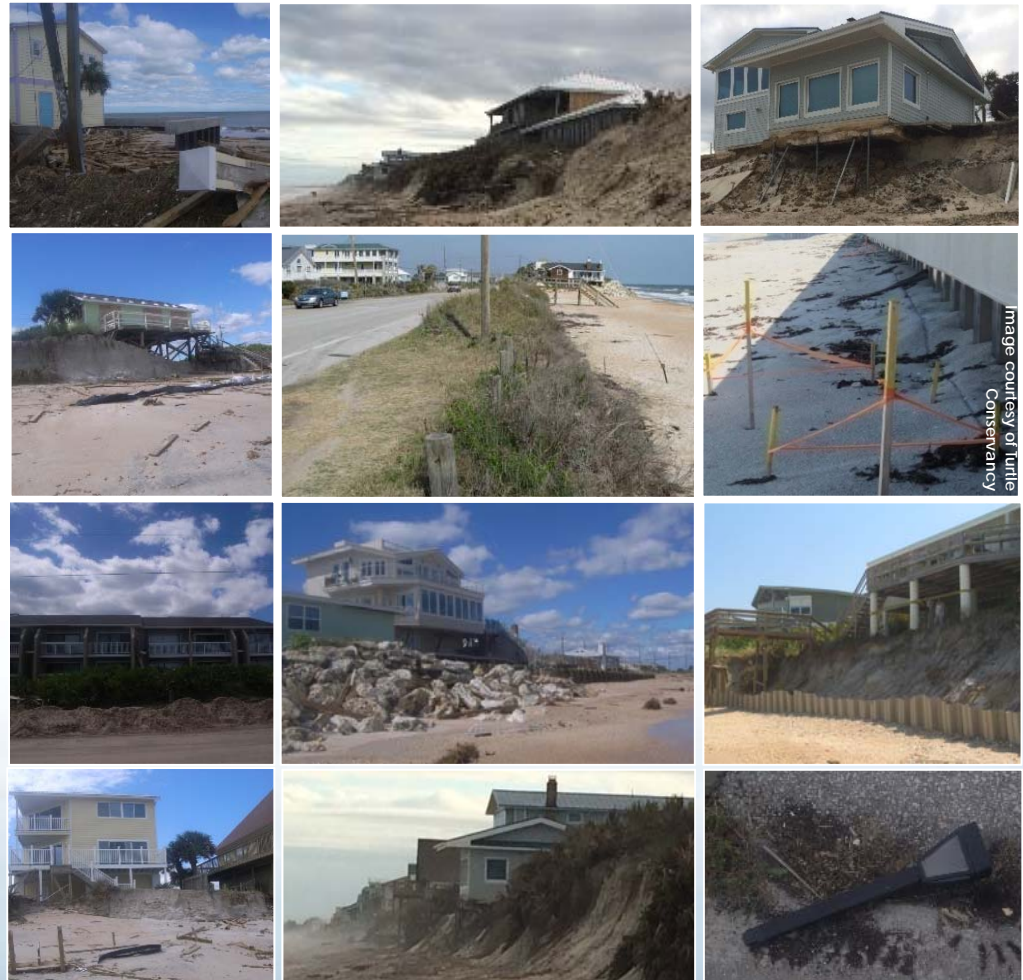
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## RECOMMENDED PLAN CONCLUSIONS & RISK OF NO ACTION

The Recommended Plan meets the objective to reduce coastal storm damage to infrastructure, is environmentally acceptable, & has been formulated according to USACE Policy:

- Project First Costs: \$78.4M
- \$2.6M total average annual benefits
- Benefit Cost Ratio: BCR: 1.3 @ 2.875%
- Maintains environmental habitat by a minimum of 3.15 acres (potentially "0" in the future without-project condition)
- Reduces potential damage to emergency evacuation/recovery route & scenic byway
- Maintains recreational & tourism opportunities
- Uses Regional Sediment Management strategy (St. Augustine Inlet System) for a sand source
- Full support from local sponsor



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LOCAL SPONSOR:

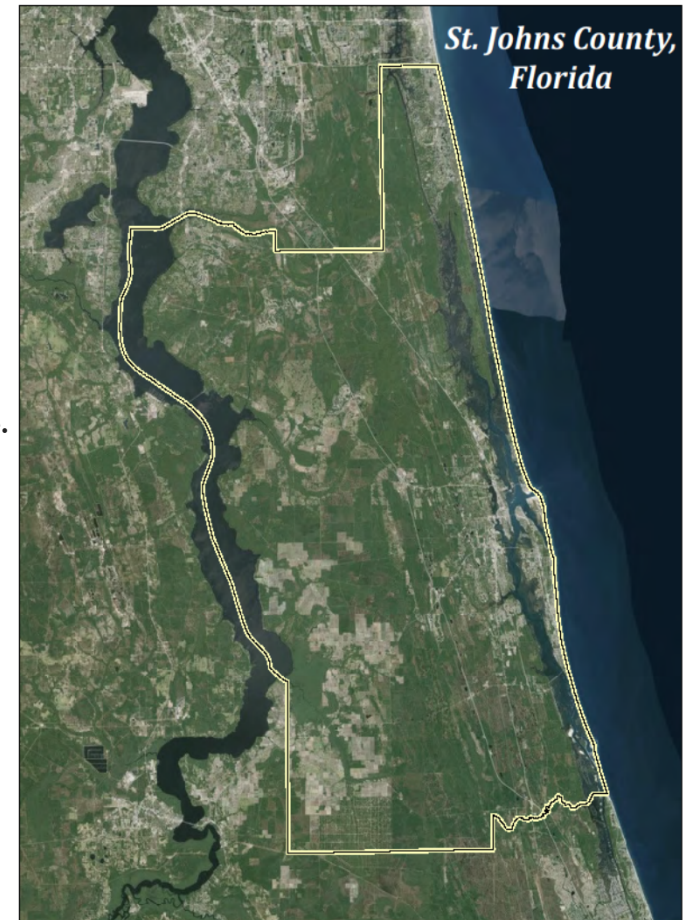
**ST. JOHNS COUNTY, FLORIDA**

MICHAEL D. WANCHICK  
COUNTY ADMINISTRATOR

March 22, 2017

# St. Johns County

- ❑ Population over 230,000/increasing by 10,000 annually.
- ❑ 42 miles of beaches and coastal parks located on three barrier islands.
- ❑ 6.5 million visitors annually.
- ❑ Numerous accolades:
  - Best Place to Live in Florida and Best in Travel 2017 – Money Magazine.
  - Top Five Places to Visit in the United States – CNN.
  - Best Places to Live for Jobs – CNNMoney.
  - Best 20 Small Towns to Visit – Smithsonian.
  - Top 22 Can't-Miss Beaches – CNNTravel.
- ❑ County bond rating recently upgraded to AA+.
- ❑ Financial capacity to participate in addressing Hurricane Matthew damage.





# Community Impact – Residential

- ❑ Historically, significant erosion has threatened beachfront homes.
- ❑ Hurricane Matthew has dramatically increased the erosion threat.
- ❑ County-wide loss of two million cubic yards of sand, affecting over 500 homes and \$200 million of real estate.
- ❑ Within the project area:
  - 170,000 cubic yards of sand loss.
  - 130 homes and structures affected.
  - \$65.6 million of real estate directly threatened.



# Community Impact – State Road A1A

- ❑ Integrity of SR A1A threatened by accelerated shoreline erosion.
- ❑ Periodic overtopping and overwash of SR A1A in multiple locations.
- ❑ Sole hurricane evacuation route for 6,000 barrier island residents.
- ❑ Southern evacuation route constrained by historical infrastructure within and around the City of St. Augustine.
- ❑ Cumulative threat to SR A1A, residences, and natural resources.





# Community Impact – Tourism

- ❑ Tourism is St. Johns County's primary economic engine:
  - Approximately 35% of the County's economy is tourism based.
  - Visitors spend in excess of \$710 million in St. Johns County annually.
  - Ranked in Top 10 Beaches in the United States.
  - Have become a recognized international destination.
- ❑ Strength of County's economy is highly dependent upon healthy beaches.
- ❑ Beaches heavily damaged by Hurricane Matthew.
- ❑ Requiring an ongoing, coordinated, comprehensive restoration program.
- ❑ Similar to existing successful St. Augustine Beach Shore Protection Project.



# Summary: Continuing the Partnership

- ❑ Impacts of Hurricane Matthew have created an urgent need for a plan of action.
- ❑ Broad community support for a plan of action involving both public and private financial resources.
- ❑ Strong Federal and State legislator support exists for remedial action and funding.
- ❑ County is fortunate to have the financial capacity to support the recommended project.
- ❑ Complete project is beyond financial capability of residents and County government.
- ❑ Federal financial assistance is necessary to frame project alternatives and move forward.
- ❑ Thankful for the USACE's comprehensive approach, expertise, and continued assistance.
- ❑ Respectfully request approval of the project and expedited design and construction.







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# SAD DIVISION COMMANDER

**BLUF:** Approve final report, release for State/Agency review, complete Chief's Report, and submit for authorization

## Strategic Value

- Coastal flood risk management projects provide a significant value in reducing damage and reducing the recovery effort. This project provides a 71% damage reduction compared to the Future Without Project condition.
- Economic benefit: (BCR 1.30) provides value to the nation, with average annual net NED benefits of \$622,000
- The recommended plan includes non-monetary, yet significant incidental benefits related to life-safety and the protection of important habitats
- Fully supported by community, state, and Federal agencies

## Feasibility Report is Legally and Policy Compliant

- ATR conducted by CFRM-PCX, all comments resolved or elevated, and ATR certified
- IEPR exclusion provided
- Cost MCX certified/VE completed/Beach-fx used for economic modeling

## Quality Assurance

Continuous involvement in the formulation and evaluation of this project throughout the Feasibility Study

## A Team Effort

Thanks to the entire team (internal and external, horizontal and vertical)



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# NATIONAL PLANNING CENTER OF EXPERTISE FOR COASTAL STORM RISK MANAGEMENT USACE



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# St. Johns County, Florida

Coastal Storm Risk Management Feasibility Study,  
Integrated Feasibility Report and  
Environmental Assessment

## Agency Technical Review

Mr. J. Bailey Smith – ATR Lead

National Planning Center of Expertise  
for Coastal Storm Risk Management

22 March 2017



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# ATR Team

Team Member	ATR Role	Corps of Engineers Office Symbol
J. Bailey Smith	ATR Team Lead/Plan Formulation	CENAP-PL-PC
Idris Dobbs	Economics and Risk	CESAJ-PD-D
Kevin Connor	H&H	CESAW-ECP-EC
Barbara Conlin	Environmental	CENAP-PL-E
Bill Bolte	Cost Engineering	CENWW-EC-X
Craig Homesley	Real Estate	CENAB-RE-C



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# ATR Scope/Charge

- Reviews completed for:
  - ▶ Draft Integrated Feasibility Report and Environmental Assessment dated 7 September 2016 – 68 comments
  - ▶ Final Integrated Feasibility Report and Environmental Assessment dated 16 December 2016 – 16 comments
  - ▶ Cost Engineering MCX Certification dated 12 July 2016
  - ▶ Beach-fx Future Without Project Condition Approval dated 16 July 2016
  - ▶ Tentatively Selected Plan Milestone Briefing ATR Participation (4 February 2016)
  - ▶ Agency Decision Milestone Briefing ATR Participation (26 May 2016)



# ATR Detailed Analysis

- Screening out of South Ponte Vedra Reach due to limited public access and parking
- Cost increase due to dredge estimating software (equipment rates, fuel prices and historical production factors)
- Plan Formulation with respect to CBRA acceptable
- Remaining risks acceptable
- Lessons Learned



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All DrChecks comments for the  
**St. Johns County, Florida Coastal Storm  
Risk Management Feasibility Study**  
have been resolved and closed out.  
Therefore, Agency Technical Review  
was completed on December 16, 2016  
and certified in accordance with  
EC 1165-2-214.



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# OFFICE OF WATER PROJECT REVIEW USACE



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# HQUSACE CONCERNS CIVIL WORKS REVIEW BOARD St. Johns County, FL

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Planning and Policy Division  
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*"The views, opinions and findings contained in this report are those of the authors(s) and should not be construed as an official Department of the Army position, policy or decision, unless so designated by other official documentation."*

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## HQUSACE ENGAGEMENTS & REVIEWS:

Alternatives Milestone	Mar. 2015
Tentatively Selected Plan Milestone	Feb. 2016
Draft Report Review	Apr. 2016
Agency Decision Milestone	May 2016
Final Feasibility Report/EA*	Jan. 2017

\*The review of the final report is now complete.

## HQUSACE TEAM MEMBERS:

Jeff Lin	Gary Hardesty	Jeff Trulick
Zach Jacobson	Marcia Deville	Patrick O'Brien
Mayely Boyce	Michael Sterling	

## POLICY ISSUES FROM DRAFT AND FINAL REPORT REVIEWS

- ☐ Existing Conditions
- ☐ Problems
- ☐ Planning Criteria
- ☐ Price Level and Discount Rate
- ☐ Cumulative Effects
- ☐ Incremental Justification
- ☐ Cost Sharing for LERRDs
- ☐ Cost Sharing for Coastal Barrier Resource Act Zones
- ☐ Cost Sharing for Undeveloped Public Lands
- ☐ Cost Contingency & Sea Level Rise Adaptability
- ☐ Executive Order 11988
- ☐ Depth Damage Functions
- ☐ Interest During Construction
- ☐ Items of Local Cooperation

## HQUSACE POLICY REVIEW TEAM RECOMMENDATION

**Release the Draft Chief's Report and accompanying Integrated Report and EA for State & Agency Review.**



# ST JOHNS COUNTY, FLORIDA

COASTAL STORM RISK MANAGEMENT (CSRM) STUDY

CIVIL WORKS REVIEW BOARD PRESENTATION

## LESSONS LEARNED



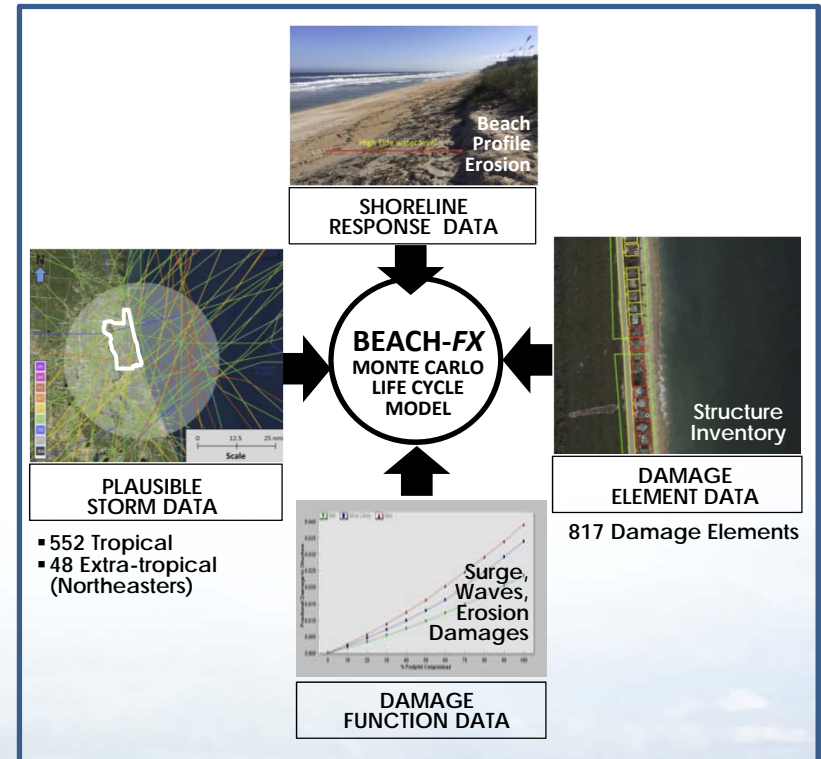
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# RECOMMENDED PLAN LESSON LEARNED

- From the Flagler CSRM Project:
  - ▶ Highlighting/attempting to quantify otherwise qualitative environmental & social project benefits
  - ▶ Application of sea-level change guidance (ER-1100-2-8162 / ETL-1100-2-1)
- During this study: Improved use of Beach-fx, including evaluating & incorporating benefits
- Sharing lessons learned:
  - SAJ Beach-fx technical forums
  - Coastal Working Group (CWG)
  - Florida Shore and Beach Preservation Association (FSBPA)
  - RSM Center of Expertise for South Atlantic Division



Incorporates the cycles of beach erosion & recovery over time



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