

Year 1 Overview of The St. Augustine, Florida Back Bay Coastal Storm Risk Management (CSRSM) Feasibility Study

**FSBPA 37th Annual National Conference on Beach Preservation Technology
Presentation #58**

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***The views I am about to express are my own
and do not necessarily represent the views
of the Army or the DoD.***

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February 9, 2024



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**US Army Corps
of Engineers**



**CITY OF
ST AUGUSTINE
EST. 1565**



AGENDA & ACKNOWLEDGEMENTS



Presentation Agenda...

- Study Background
- Scoping Process & Policy
- Key Scope Factors
- Path to Tentatively Selected Plan (TSP)
- Wrap-up

Acknowledgements for the information presented is given to...

- City of St. Augustine Staff
- Jacksonville District Team
- USACE Vertical Team
- Agencies, Stakeholders, and Public Residents
- Lessons Learned from Previous “Back Bay” CSRM Studies



STUDY BACKGROUND



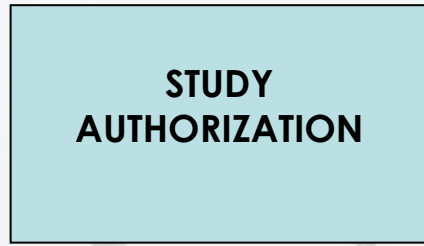
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September 2018

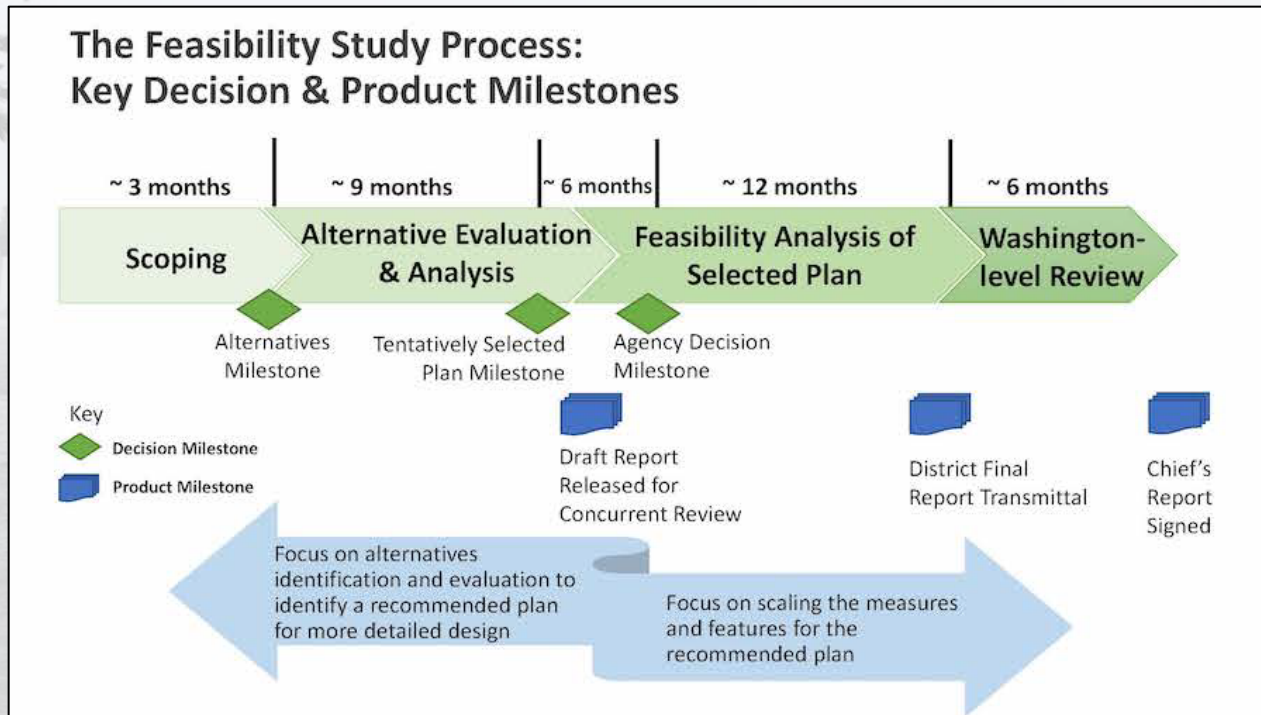
House Resolution 2646
(June 21, 2000)

April 2022

 **We Are Here**



2012 SMART Planning & Section 1001 of WRDA 2014 (aka 3x3 rule)...

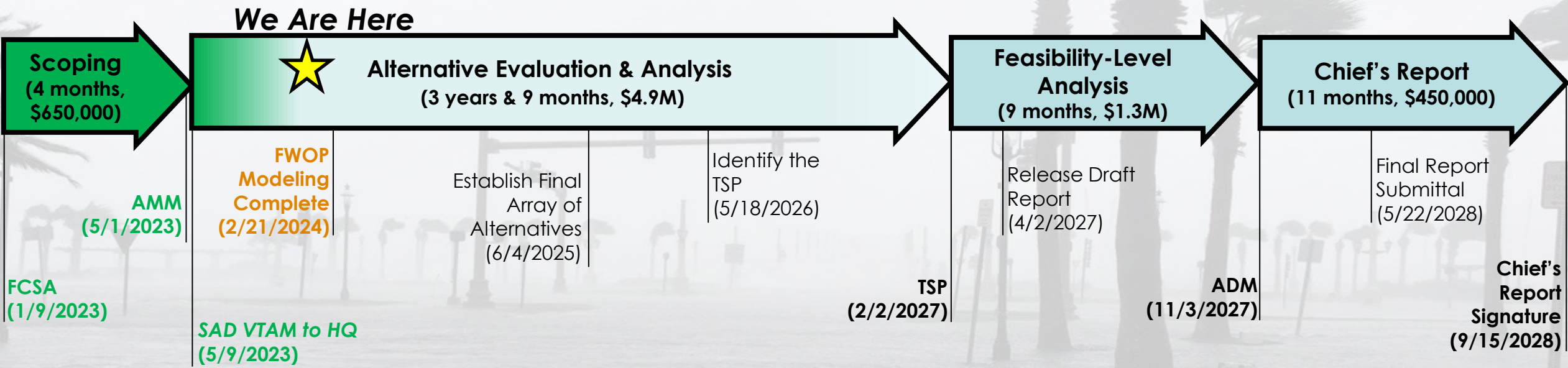


More Recent Developments...

- New Feasibility Phase Requirements/Focus over the last several years Including...
 - Comprehensive Benefits
 - Life-Safety
 - Compound Flooding
 - Environmental Justice
 - NEPA Compliance
 - Design Maturity
- July 2022, Vertical Team Alignment Memo (VTAM) Guidance



Schedule & Budget Overview: 5 years & 9 months, \$7.3M



Key Study Scope Factors:

- Study Area
- Robust Community Outreach
- Visual Resources Assessment
- Compound Flooding

Acronyms:
 FCSA = Feasibility Cost Share Agreement
 AMM = Alternatives Milestone Meeting
 FWOP = Future Without Project
 SAD = South Atlantic Division
 VTAM = Vertical Team Alignment Memo
 HQ = Headquarters
 TSP = Tentatively Selected Plan
 ADM = Agency Decision Milestone



KEY SCOPE FACTORS Study Area



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- Entire City Municipal Boundary
- 17 Distinct Neighborhoods
- 3 Separate Land Masses
- Interconnected Water Bodies

**Environmental
Justice (EJ)
Communities**

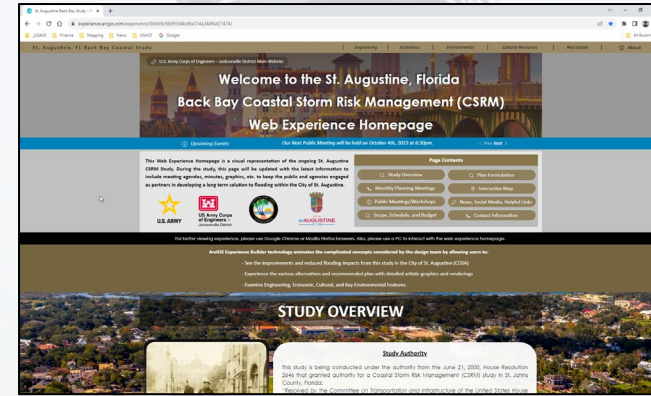


KEY SCOPE FACTORS Robust Community Outreach



- Monthly Webinars
- In Person Workshops Every 6 Months
- Study Experience Website...

[St. Augustine Back Bay Study - Web Experience Homepage \(arcgis.com\)](#)






KEY SCOPE FACTORS Visual Resources Assessment



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- VRAP = "Visual Resources Assessment Procedure"
- A method to evaluate visual resources affected by Corps water resources projects.
- The procedure is quantitative, systematic, and tractable.
- Public input is included in the procedure.
- Considers various visual resource components (e.g., water, landform, vegetation, land use, user activity) that are prominent in the landscape.



US Army Corps of Engineers

ENVIRONMENTAL IMPACT RESEARCH PROGRAM


INSTRUCTION REPORT EL-88-1

VISUAL RESOURCES ASSESSMENT PROCEDURE FOR US ARMY CORPS OF ENGINEERS

by
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Waterways Experiment Station, Corps of Engineers
PO Box 631, Vicksburg, Mississippi 39180-0631




March 1988
Final Report

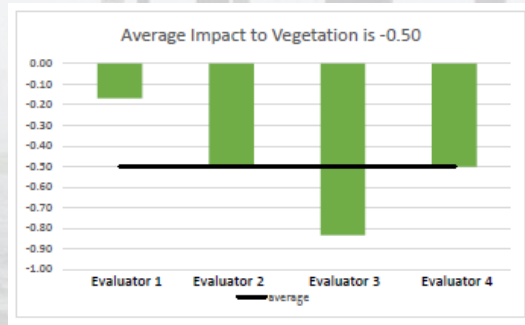
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Prepared for DEPARTMENT OF THE ARMY
US Army Corps of Engineers
Washington, DC 20314-1000

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US Army Engineer Waterways Experiment Station
PO Box 631, Vicksburg, Mississippi 39180-0631
Under EIRP Work Unit No. 32264



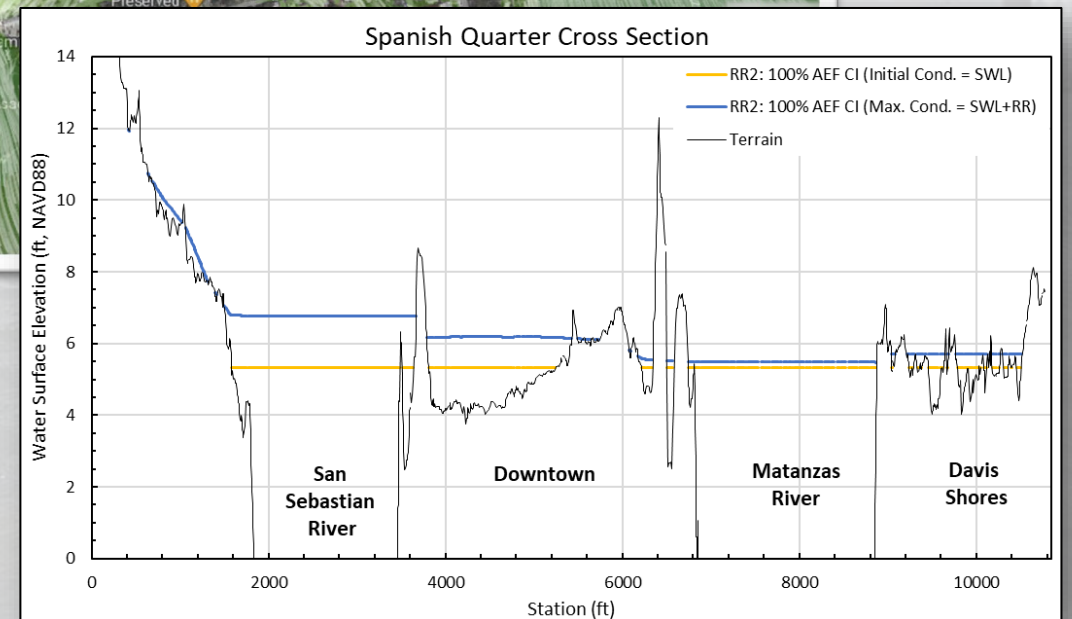
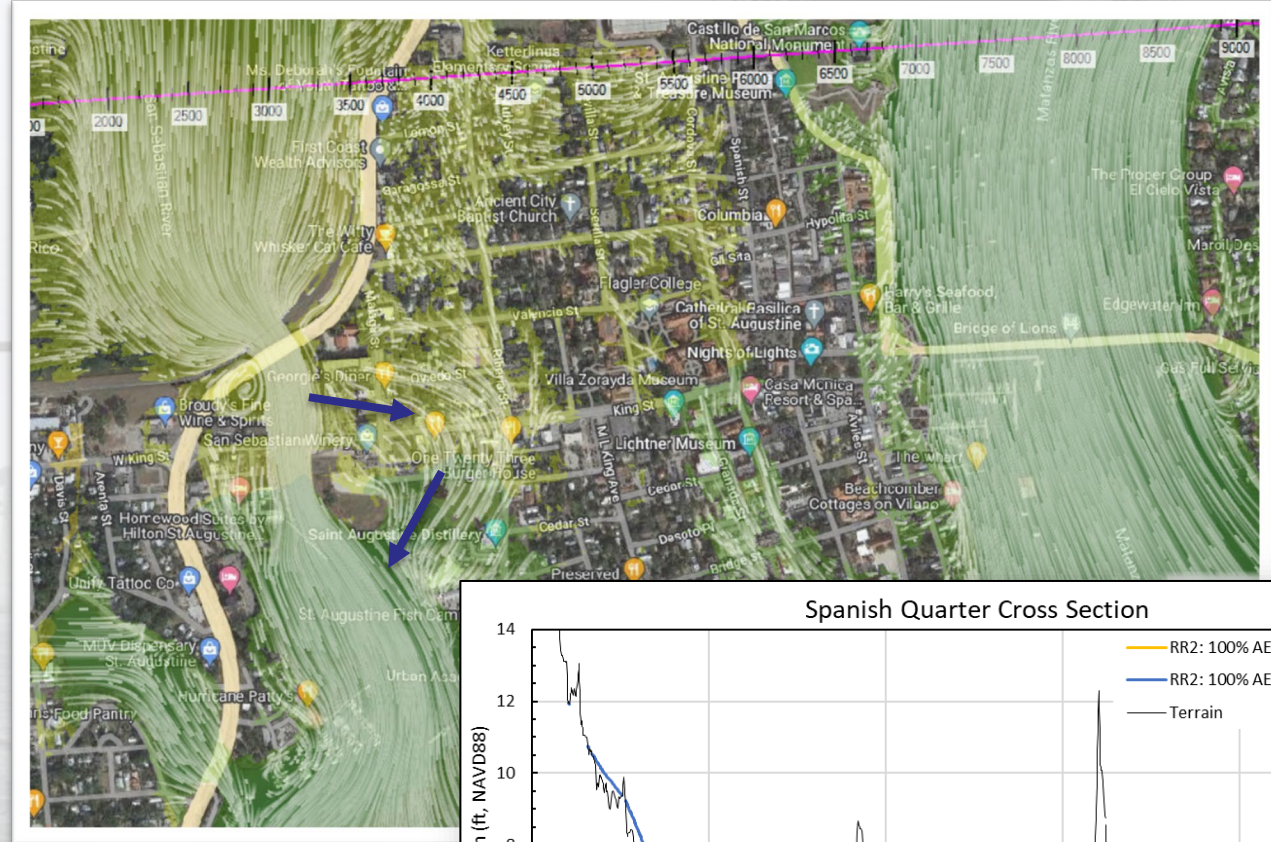
ENVIRONMENTAL LABORATORY



MA	Foundation	Type/wall	Shape	Length	Start/Station	End/Station	Description	Cost/LF	Total Aesthetic Cost	Examples of Aesthetic Mitigation
Marina	land	T-Wall	combo	174.96	0+00	1+74.96	Crabber	1500	\$174,960	ped / bike friendly, palm trees, berms, grade changes, access, stairs / ramps, sidewalks, retain/replace water
	land	T-Wall	combo	807.51	1+74.96	9+82.49	outside to Joe	1500	\$1,211,265	
	land	T-Wall	combo	6777.51	9+82.49	77+460	Brittlebank to Marina	1500	\$10,166,259	new log if unable to adequately mitigate aesthetic resources but on Lockwood, may need to be replaced/regained elsewhere on project, vegetation
	land	T-Wall with walkway	combo	2113.00	77+460	99+73.00	Marina to Lockwood/Wharf	2000	\$4,226,000	
	marsh	combo	combo	866.30	99+73.00	108+39.30	coast guard dock (rebar)	50	\$43,315	
MA total				10839.38						
Battery	land	T-Wall	land	4722.93	108+39.38	155+42.31	new city wall - low battery	900	\$2,861,463	side currently access beach behind wall at low tide - strain access, eg. current conceptualized void filled w/ rocks may instead be usable space w/ beach access
	land	T-Wall	land	1342.68	155+42.31	169+04.98	high battery	2900	\$3,896,680	
MA total				6065.61						
Port	marsh	combo wall w/backfill	land	310.00	169+04.98	174+15.00	off high battery and CYC	1500	\$765,150	potential realignment and/or removable wall, ped / bike friendly, vegetation, stairs / ramps, berms, grade changes, access, preserve or replace trees/shade
	land	T-Wall	land	2712.20	174+15.00	201+32.20	CYC-waterfront park	1500	\$4,078,300	
	land	T-Wall	land	9943.39	201+32.20	300+73.60	Lovins Hotel - thru port	500	\$4,971,695	
MA total				13168.70						
Newmarket	land	T-Wall	land	3875.16	300+73.60	339+48.84	new market	500	\$1,937,580	Minimize impacts to aesthetic resources, eg design ped / bike friendly, alignment refinement, consideration of grass, compatible wall articulation and contextual materials, preserve or replace trees
	land	T-Wall	land	3198.36	339+48.84	371+47.21	new market	500	\$1,599,180	
	land	T-Wall	land	40.06	371+47.21	371+47.21	Upper new market	500	\$20,030	
MA total				7113.58						
Wagner	land	T-Wall	land	876.00	0+00	8+25	Daniel Creek	500	\$437,500	retain/replace existing views of and across the water by accommodating ped / bike access to and laterally on the wall, include lookout/nest points, comfort and safety features such as lighting and shade, also bike / ped connectivity and consideration of gates that support bike / ped connectivity
	land	combo wall	land	540.00	8+25	13+45		500	\$270,000	
	land	T-Wall	land	675.00	13+45	20+40		500	\$337,500	
	marsh	combo wall	land	1897.00	20+40	49+37.00	Upper Wagner Terrace	500	\$1,448,500	
	land	T-Wall	land	75.27	49+37.00	50+12.96	park	500	\$37,635	
	marsh	combo wall	land	3043.80	50+12.96	80+56.76	Halley to lower WT	500	\$1,521,900	
	land	T-Wall	land	372.70	80+56.76	90+86.46	Crabber	500	\$246,350	
MA total				9036.48						
Totals				46223.72					\$39,983,404	
									\$5,589,760	
									\$45,169,164	
									\$13,357,516	
									\$60,526,600	

The examples provided here are some things the POF would likely consider, but are not prescriptive, nor meant to exclude other possibilities. This rough order of magnitude cost estimate for aesthetic mitigation was developed collaboratively by a civil/structural engineer, a landscape architect, and an urban designer. Though several potential cost estimating methods were candidates, due to time constraints cost per linear foot was developed as a percentage of the cost of construction for the flood barrier.

- Preliminary analysis indicated stages in the San Sebastian River increased significantly for certain compound events.
- Coincident Frequency Analysis (EM 1110-2-1413) being conducted using Coastal Hazards System (CHS) storm surge and NOAA Atlas 14 rainfall data.

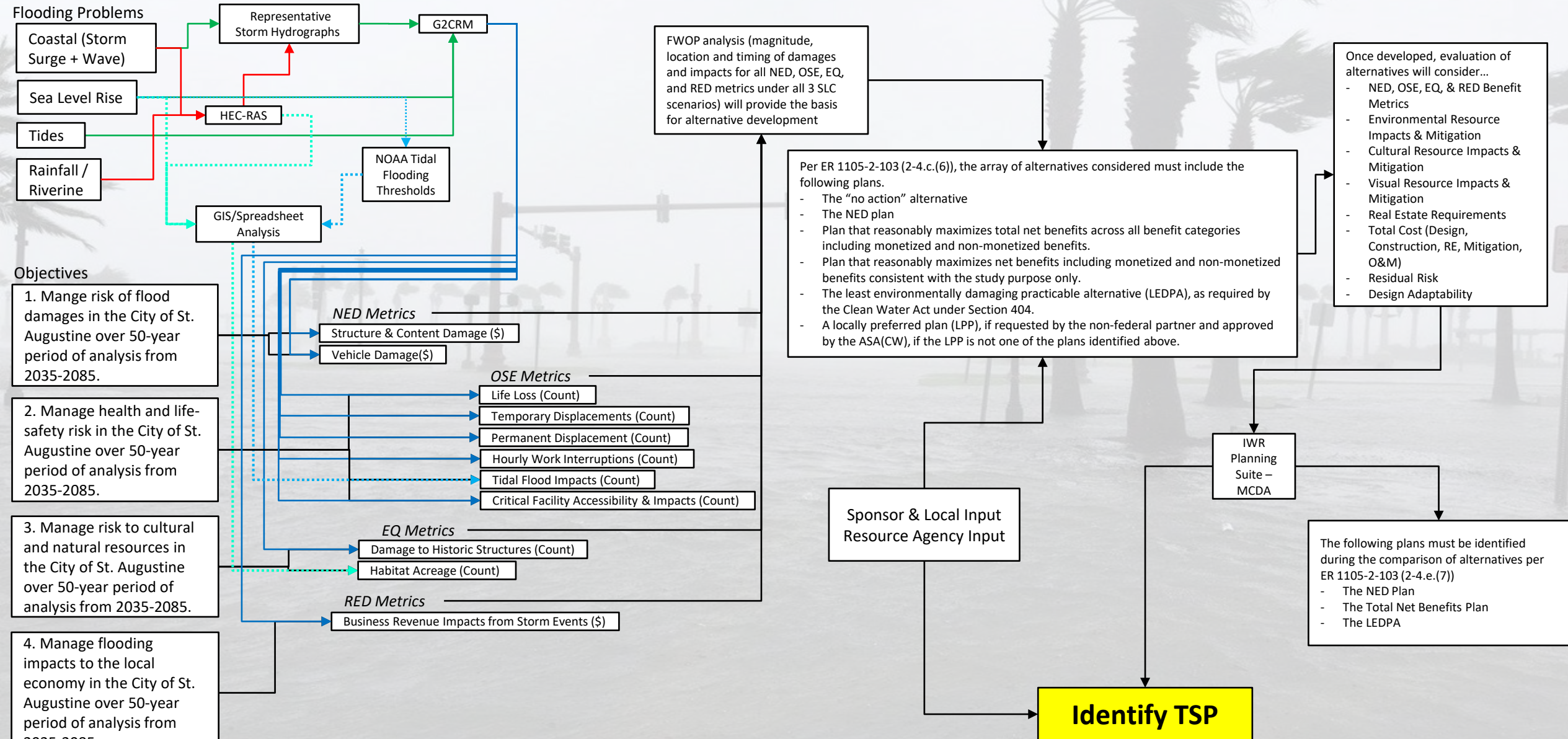




PATH TO TENTATIVELY SELECTED PLAN (TSP)



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- USACE study scoping and 3x3 rule exception process is evolving.
- The St. Augustine Back Bay CSRМ study scope includes some new analysis and approaches that reflect recent policy and directives.
- 2 New Acronyms!
 - VTAM – Vertical Team Alignment Memo
 - VRAP – Visual Resources Assessment Procedure
- THANK YOU!!!



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www.saj.usace.army.mil/NowHiring