

ST. AUGUSTINE, FL BACK BAY COASTAL STORM RISK MANAGEMENT FEASIBILITY STUDY

ENVIRONMENTAL SUBGROUP MEETING 1

Date:	August 4, 2023
Time:	10:30AM - 12:00PM
Meeting Location:	WebEx Virtual Meeting https://usace1.webex.com/meet/darren.j.pecora

IN ATTENDANCE: 31 ATTENDEES IN TOTAL

USACE

- Lindsay Brantley, Daniel A. Santiago, Amanda Bredesen, Katie Bailey, Gretchen Ehlinger, David Ruderman, Michelle Vieira, Nalinie Ramnaraine, Brennan Banks, Brooke Warlitner, Sheila Arias-Roman, Kristen Donofrio, Jason Harrah, Rena Weichenberg

City of St. Augustine

- Caitlyn Sargent

Agencies and Public

- Chris Farrell (Audubon Florida), Bonnie Hayflick (CoSA Resident), Doug Whitee (EPA), Roxanne Dow (FDEP), Lia Sansom (FDEP – GTMNERR), Terri Newman (FDOT), Daniel Penniman (FDOT), Melissa Benedict (FWC), Silas Tanner (Matanzas Riverkeeper), Kurt Foote (National Park Service – Castillo de San Marcos), Chuck Jacoby (SJRWMD), Caitlin Manley (USFWS), Brendan Myers (USFWS), Wade Brenner, Krystle Young Bowers, Jill Horwitz

OPENING REMARKS

- The purpose of this and future meetings is to take a deep dive into environmental related questions, concerns, etc. specifically related to the study and future development of alternatives to address flooding with City of St. Augustine (CoSA).
- Send input, comments, and data to CESAJ-St.AugBackBayCSRM@usace.army.mil
- You can also visit <https://www.saj.usace.army.mil/Missions/Civil-Works/Shore-Protection/St-Johns-County/City-of-St-Augustine-Florida-Back-Bay-Feasibility-Study/>
- Follow us on Social Media: www.facebook.com/JacksonvilleDistrict and @JaxStrong
- Points of Contact:

- Project Manager: Jason Harrah, Jason.S.Harrah@usace.army.mil
- Planning Technical Lead: Marty Durkin, Martin.T.Durkin@usace.army.mil
- Environmental Lead: Darren Pecora, Darren.J.Pecora@usace.army.mil
- Project Biologist: Katie Lebow, Kathryn.E.Lebow@usace.army.mil

STUDY OVERVIEW

- The study is being conducted under the authority of House Resolution 2646 (June 21, 2000): St. Johns County, Florida.
- This authority has been used for 2 other completed studies and 1 other ongoing study in other parts of the county.
- Non-Federal Sponsor (NFS) is the City of St. Augustine, and the primary point of contact is Jessica Beach, the city's Chief Resiliency Officer.
- Study Area
 - Encompasses the entire CoSA municipal boundary
 - 17 distinct neighborhoods
 - 3 separate land masses
 - Interconnected waterbodies
- Study Objectives:
 - Manage risk of coastal flood damages.
 - Manage risk to health and life-safety.
 - Preserve cultural and natural resources and maintain aesthetic quality.
 - Manage flooding impacts to the local economy.
- Nearby Projects:
 - Ponte Vedra Beach feasibility study
 - South Ponte Vedra Beach, Vilano Beach, and Summer Haven Beach feasibility study
 - Vilano Beach feasibility study
 - St. Augustine Beach shoreline protection project
- Schedule and Budget Overview
 - 5 years and 9 months, \$7.3M
 - Key Components of the Study Scope:
 - Entire CoSA
 - Compound Flooding
 - Full array of alternatives and comprehensive benefits
 - National Environmental Policy Act document (EIS or EA, TBD)
 - Robust community outreach
 - Schedule:
 - Scoping (4 months)
 - Alternative Evaluation and Analysis (3 years & 9 months)
 - Feasibility-Level Analysis (9 months)
 - Chief's Report (11 months)
 - Significant Dates:
 - Feasibility Cost Sharing Agreement 1.9.2023
 - Charrette 2.22.2023
 - Alternative Milestone Meeting 5.1.2023
 - Future without Project Modelling Complete 2.21.2024

- SAD Vertical Team Alignment Memo to HQ 5.9.2024
- Establish Final Array of Alternatives 6.4.2025
- Identify the Tentatively Selected plan 5.18.2026
- Tentatively Selected Plan 2.2.2027
- Release Draft Report 4.2.2027
- Agency Decision Milestone 11.3.2027
- Final Report Submittal 5.22.2028
- Chief's Report Signature 9.15.2028
- Coastal Storm Risk Flood Scenarios
 - Most of the study area sits at a low elevation between 3 and 9 ft.
 - With a flood up to 4.5 feet NAVD 88 several streets and low-lying areas throughout the city become flooded. This water level can be seen as a result of a nor'easter occurring with a high tide, and also reflects what mean higher high water (MHHW) would be 50-years from now with the High USACE Sea Level Change (SLC) curve or what the highest astronomical tide (HAT) would be in 2073 with the 50-years from now with the Intermediate USACE SLC curve.
 - Under a 7-foot NAVD88 flood event, a 5-year storm surge event, such as the flood levels seen during Hurricane Mathew in 2016 that caused significant flooding throughout the city, much of the city is flooded. You can see here the high-water mark from this event at O 'Steens Restaurant. This elevation also reflects the design level for several local resiliency efforts.
 - A 50-year surge with flood levels reach 9 feet NAVD 88. A majority of the city is flooded in this scenario. At higher flood levels the footprint of the flooded area does not change, however the magnitude of flooding impacts will increase with higher flood levels.
 - On the high curve, sea levels are projected to increase by about 3 feet over the next 50 years to about 2.6 feet NAVD 88. Over the next 100 years sea levels could reach 7 feet on the high curve. The team plans to model and analyze the future without project conditions for all three USACE SLC curves and based on the results of that analysis will determine the appropriate approach for incorporating SLC into the plan formulation analysis based on ER 1100-2-8162.
- Initial Alternatives
 - At the planning charette, a list of potential management measures that could be used to achieve the study objectives were brainstormed by the group. Input on these potential management measures was also received during the public scoping period.
 - The Initial array of alternatives combines management measures to achieve specific flood risk management functions in specific locations within the study area. Various alignments and designs could be considered for all the features. All these alternatives could reduce coastal flood risk and provide benefits across all 4 accounts. For the structural features, mitigation for impacts to cultural, aesthetic, and wetland resources would likely be needed and there is a CBRA compliance risk. For all alternatives, potential real estate complications will be identified once the design is more clearly defined.

- Alternative Examples
 - Storm Surge Barriers
 - Floodwalls
 - Non-Structural
 - Natural and Nature-Based Features
 - Potential Features to consider:
 - Spartina marsh
 - Juncus marsh
 - Mangroves
 - Oyster Reef
 - Oyster Shells
 - Seagrass planting
 - Living Shoreline
 - Sand Placement (such as dunes or berms)
 - Breakwaters
 - Seawalls
 - Mitigation Options:
 - Mitigation Banking
 - Construction of Potential Mitigation Areas
 - Available Parcel Identification
 - Land Acquisition
- Plan formulation strategy
 - This group will be focused on the Environmental Quality benefits as we work through alternative identification and selection.
 - We will need high level objectives from this group to help inform modeling of these benefits.

ENVIRONMENTAL CONSIDERATIONS:

- The following will be analyzed and considered throughout the process, however, this is not an exhaustive list.
 - Aesthetics
 - Tourism
 - Viewshed
 - Air Quality
 - Essential Fish Habitat
 - Wetlands
 - Estuarine marsh (*Spartina, Juncus*)
 - Mangroves (Black Mangrove)
 - Actively monitored by GTMNERR and other stakeholders
 - Contaminants
 - Navigation
 - Noise
 - Environmental Justice
 - Environmental justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin,

or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.

- There are environmental justice communities within the study area
- Recreation
- Benthic Resources
 - Oyster reefs
 - Active harvesting areas in Salt Run
- Socioeconomics
- Threatened and Endangered Species
 - Florida Manatee
 - Loggerhead Sea Turtle
 - Rufa Red Knot
 - Piping Plover
 - Anastasia Island Beach Mouse
 - North Atlantic Right Whale
- Water Quality
 - Monitored by stakeholders and GTMNERR
- Fish and Wildlife Resources
 - Recreation and commercial fishing
 - Ecotourism
 - Marine Mammals
 - Resident Dolphins
 - Migratory Birds
- Tourism
- Guana Tolomato Matanzas National Estuarine Research Reserve (GTMNERR)
 - North and South of the study area, with the waterways running through the study area belonging to the reserve.
 - Designated by the State of Florida as an Outstanding Florida Water (Class III)
 - Protects 76,760 acres spanning nearly 40 miles of coastline.
 - Network of conservation areas managed by 7 stakeholders.
 - Harbors a variety of species, including mammals, birds, reptiles, amphibians, fish, and plants.
 - Management and monitoring of several wetland types throughout the GTMNERR and study area are performed and this data has been shared with the team. More data will be collected as the team moves through the project process.
- Coastal Barrier Resources Act (CBRA)
 - Established in 1982
 - Maintained by the USFWS
 - Most new Federal expenditures and financial assistance, including Federal flood insurance, are prohibited within System Units.
 - Within the study area, the CBRA system units overlap urbanized/developed land, and the team is investigating this further with the USFWS.
- Environmental Compliance
 - Endangered Species Act

- Designated Critical Habitat
 - North Atlantic Right Whale southeastern calving areas
 - Loggerhead sea turtle nearshore reproductive habitat

QUESTIONS/COMMENTS

Attendee Name	Question/Comment	Response
USFWS	Can't provide much advice since we don't know what the action will be yet	Monthly public meetings, will have public workshops, we want everyone to feel free to share ideas and chime in Use these meetings as a tool for everyone to be open and honest and have a real discussion
USFWS	This will be a heavy lift for USFWS in many aspects(CBRA, MMPA, ESA, MBTA, etc.) to quantify potential impacts The study area is the municipal boundary, but the action area may be different, so make sure that is clearly defined	Some management measures are outside the city boundaries, and could potentially have far-reaching effects
USACE	Is the NPS thinking any new and creative ideas of the kinds of things the park is considering to help protect the park?	Very initial discussions have begun, goal is to mitigate the sea wall in front of the fort No alternatives yet, but the NPS will bring them to this forum when available On the ground site visit has been completed
USACE	Didn't the fort put in a NNBF in front of the sea wall?	A living sea wall using coquina boulders was put in place ~2011, but it is often overtopped and needs improvement
USACE	The living sea wall in front of the fort can be used as a lessons learned of how we have to design any NNBFs	We absolutely should learn from the past and we need to make things more robust to be effective against the conditions there

USACE	If we are in these CBRA areas, what sorts of material would be acceptable to be instituted? Concrete reef balls, bagged oyster shells, etc. What kind of EQ benefits could we maybe see there?	Concrete reef balls may not be acceptable because of the concrete component We will loop in HQ for more ideas and creative solutions This will require a complex and difficult consultation, and will need lots of communication and creativity to come up with options
USACE	Coquina is also something we would need to discuss in this area for CBRA	
GTMNERR	GTMNERR has looked at bagged oyster shells in areas like this with the IWW, but they don't do well because of the high activity level of these waterways	What kind of things have you seen that work best in these high energy areas?
GTMNERR	Mangroves tend to work in high energy areas, but we haven't actually tried planting any How would potential freezes affect these areas?	Do we have any living examples of this kind of stuff in the US? Europe? Any that are working in these metropolitan areas?
USFWS	NASA Kennedy Space Center has done a very large dune restoration project, so that might be a place to start to find some more of this information - maybe they would have it	Is that on the ocean facing shoreline or the backbay?
USFWS	Shoreline itself	
USFWS	Port of San Diego has implemented concrete reef balls with oysters inside of them - South Bay Living Shoreline Project	https://scc.ca.gov/webmaster/ftp/pdf/sccbb/2021/2103/20210325Board09_San_Diego_Bay_Living_Shoreline.pdf https://scwrp.org/projects/san-diego-bay-native-oyster-living-shoreline/
FWC	Have you thought of creating/constructing wetlands?	We're absolutely open to ideas Some of these NNBFs could potentially include creation of wetlands as part of the system (for example a double-wall

		feature could include wetland construction)
FDOT	FDEP has a really successful project in Pensacola (project Green Shores) with the goal of creating wetlands and capturing sediment	
FDOT	FDOT uses wave attenuating devices down south; hoping to get some seagrass mitigation out of that as well by calming down the waterways	
USFWS	There is concern about some of those devices because of size of openings and potential entrapment for animals like manatees, turtles, etc.	
GTMNERR	Maybe we can come up with something similar to wave attenuation in a more natural way There have been conversations with a lot of creative AE firms and other countries (the Netherlands) Need to follow up with Christine Angelini	A lot of people living in the metropolitan areas are trending towards wanting a combination of NNBFs and hardened structures to meet the needs of the area and offer the protections https://www.essie.ufl.edu/people/name/christine-angelini/
FDOT	https://www.youtube.com/watch?v=TZhHTa-tN6Y	
FDEP	Not too much information on effectiveness, but the department is trying to develop more of an inventory https://floridadep.gov/rcp/resilient-florida-program/content/resilient-florida-program-living-shorelines	Did you have any ideas or information to add to this?
FDEP	Some of these things might be too small and there is a lot of community resistance to some of these due to concerns about rats, snakes, maintenance, etc.	
USACE	Purchase of conservation land in perpetuity could potentially be an option (like Jax Harbor Deepening)	Does GTMNERR have any idea about potential tracts of land that could be available?
GTMNERR	Yes, but they may not be fully vetted	This is something we can coordinate on in the future depending on where we go with

		this and what kind of acreage we're looking at
FDOT	There is actually an area that FDOT constructed in ~2018/2019 that is well integrated into the area Pretty successful as spartina and mangroves	Did FDOT plant it? Do some management on the landscape? Was it privately owned and you did acquisition?
FDOT	It was part of acquisition for the bridge project and was planted	Good example for us to look at
FDEP	Do we have any maps of SAV?	There isn't much in the area (GTMNERR), because it's pretty turbid so there isn't a lot around besides algae