

PROJECT INFORMATION REPORT

FOR THE

**REHABILITATION EFFORT FOR THE
ST. JOHNS COUNTY, FLORIDA
COASTAL STORM RISK MANAGEMENT PROJECT
(SOUTH PONTE VEDRA BEACH AND VILANO BEACH REACHES)**

ST. JOHNS COUNTY, FLORIDA

29 December 2021

Table of Contents

Part I. Executive Summary.	ii
Part II. Basic Report.....	1
1. NAME AND LOCATION.	1
2. PUBLIC SPONSOR.	1
3. POC FOR PUBLIC SPONSOR.	1
4. PROJECT AUTHORIZATION.	1
5. PROJECT CLASSIFICATION.	2
6. DESIGN DATA OF PROJECT.	2
7. MAINTENANCE.	2
8. PERIODIC NOURISHMENT.	2
9. PREVIOUS PL 84-99 ASSISTANCE.....	2
10. DISASTER INCIDENT.	3
11. DAMAGE DESCRIPTION	3
12. NEED FOR PL 84-99 REHABILITATION.....	11
13. PROPOSED WORK.....	11
14. COST ESTIMATE.	12
15. ECONOMICS.	13
16. ENVIRONMENTAL CONSIDERATIONS.	14
17. PERMITS.	22
18. IMPLEMENTATION SCHEDULE.	22
19. RECOMMENDATIONS.	23
List of Acronyms	24
Part III. Appendices.....	26
Appendix A. Public sponsor's request for assistance	26
Appendix B. Project map(s).....	27
Appendix C. Project Overview.....	27
Appendix D. Project Design Data	27
Appendix E. Project Maintenance Data	27
Appendix F. Project Renourishment Data	27
Appendix G. Previous PL 84-99 or Other Federal Agency Assistance	27
Appendix H. Disaster Incident	28
Appendix I. Damage Description	37
Appendix J. Proposed Work.....	46
Appendix K. Cost Estimate Data	47
Appendix L. BCR Data	51
Appendix M. Environmental Considerations.....	54
Appendix N – Y	56
Appendix Z. PIR Review Checklist.....	57

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Part I. Executive Summary.

This Project Information Report (PIR) was prepared at the request of the project sponsor in a letter dated November 17, 2021. Funding for this report was provided by Public Law (PL) 116-20. This report finds that there is sufficient justification for Flood Control and Coastal Emergency (FCCE) rehabilitation of the St. Johns County, Florida Coastal Storm Risk Management Project (CSRM) (South Ponte Vedra Beach and Vilano Beach Reaches) under PL 84-99.

Preparation of this report has followed the guidance provided in

- 1) Engineer Regulation (ER) 500-1-1, Emergency Employment of Army and Other Resources - Civil Emergency Management Program, September 30, 2001.
- 2) Engineer Pamphlet (EP) 500-1-1, Emergency Employment of Army and Other Resources - Civil Emergency Management Program - Procedures, September 30, 2001.
- 3) CECW-HS, MEMORANDUM FOR SEE DISTRIBUTION, SUBJECT: Implementation Guidance for Section 3029(a)(2) of the Water Resources Reform and Development Act (WRRDA) of 2014, Emergency Response to Natural Disasters; Repair or Restoration of Coastal Storm Risk Management Projects to Design Level of Protection, May 30, 2017.
- 4) CECW-HS, MEMORANDUM FOR COMMANDERS, MAJOR SUBORDINATE COMMANDS AND DISTRICTS, SUBJECT: Interim Guidance for Civil Works Review of Public Law (PL) 84-99 Activities, May 18, 2017.
- 5) CECW-P, MEMORANDUM FOR SEE DISTRIBUTION, SUBJECT: Revised Implementation Guidance for Section 1160 of the Water Resources Development Act (WRDA) of 2018, Emergency Response to Natural Disasters, April 17, 2019.
- 6) Public Law (PL) 116-20, Title IV, Corps of Engineers – Civil Department of the Army, Flood Control and Coastal Emergencies, June 6, 2019.
- 7) CECW-HS, MEMORANDUM FOR SEE DISTRIBUTION, SUBJECT: Procedural Clarification Regarding Environmental Documentation for Project Information Reports, October 26, 2020.

This report finds that, per ER 500-1-1, an extraordinary storm event has impacted the project area, significant damage has occurred to the project, and there is an immediate threat to the property, structures, and infrastructure that this project is designed to protect.

The proposed emergency work to fully restore the project's construction template at full federal expense, in accordance with PL 116-20, is economically justified as the project will have a remaining benefit to remaining cost ratio of 1.48 for the remaining period of Federal participation. This PIR will be supplemented with additional environmental information and documentation for the use of a new offshore sand source for the proposed emergency work prior to the funds transmittal of construction phase activities in accordance with the guidance memorandum from CECW-HS dated October 26, 2020.

Part II. Basic Report.

1. NAME AND LOCATION.

St. Johns County, Florida Coastal Storm Risk Management (CSRM) Project, (South Ponte Vedra Beach and Vilano Beach Reaches) St. Johns County, Florida.

The project is in Vilano Beach and a small portion of South Ponte Vedra Beach. The project area is comprised of 2.6 miles of Atlantic Ocean shoreline beginning approximately 1 mile north of the St. Augustine Inlet and extending north. See Figure 1.



Figure 1: Project Location

2. PUBLIC SPONSOR.

St. John's County Board of County Commissioners, 4020 Lewis Speedway, St. Augustine, Florida 32095.

3. POC FOR PUBLIC SPONSOR.

Damon Douglas, Coastal Manager, St. Johns County Disaster Recovery, 500 San Sebastian View, St. Augustine, Florida 32084.

4. PROJECT AUTHORIZATION.

This project was authorized by Section 1401-(3) of the Water Resources Development Act (WRDA) of 2018, PL 115-270.

5. PROJECT CLASSIFICATION.

This project was Federally designed and constructed to manage coastal storm risks over a 50-year period of analysis to maximize net national economic development (NED) benefits. The project was designed primarily to prevent erosion damages to upland structures and infrastructure.

6. DESIGN DATA OF PROJECT.

The recommended plan includes beach and dune nourishment within the Vilano Beach reach and a small portion of the South Ponte Vedra Beach reach. The design includes construction of a 60-foot equilibrated berm extension from the +8.0-foot North American Vertical Datum of 1988 (NAVD88) contour between the R monuments R103.5 and R116.5 along 2.6 miles of shoreline. The project template will include a dune feature that reflects the average 2015 dune position. Tapers of a maximum length of one thousand feet will extend from the northern and southern ends of the berm extension, connecting the extension to the existing shoreline. The addition of tapers results in sand placement from R102.5 to R117.5 along 3 miles of shoreline. Planting of dune vegetation will take place following completion of constructed segments. (2017 Chief's Report).

7. MAINTENANCE.

The 2017 Feasibility Report estimated average annual costs to be \$35,000 per year to cover non-Federal sponsors operations, maintenance, repair, rehabilitation, and replacement (OMRR&R) responsibilities. The OMRR&R for this project includes any necessary long-term topographic and bathymetric surveys (different from those supporting beach nourishment activities), revegetating the dune as needed between nourishment activities, scarp repair, and beach tilling. The operations and maintenance also includes the items of local cooperation listed in the 2017 Feasibility Report and Environmental Assessment (FR/EA). Specific requirements are described in more detail in the O&M Manual for this project dated September 2021.

8. PERIODIC NOURISHMENT.

Initial construction beach fill operations were completed on January 6, 2021. Approximately 1.3 million cubic yards (cy) of sand coming from the St. Augustine Inlet flood shoal were placed between R102.5 and R117.5. The planting of dune vegetation was completed on April 11, 2021, and 390,000 vegetation units were planted.

No periodic nourishments have taken place. The periodic nourishment interval was expected to be approximately 12 years, resulting in 3 periodic nourishment events in addition to initial construction over the 50-year period of federal participation. (2017 Chief's Report).

9. PREVIOUS PL 84-99 ASSISTANCE.

No previous PL 84-99 Rehabilitation Assistance or assistance by any other Federal agency has been provided for this project.

10. DISASTER INCIDENT.

A strong and long-lasting nor'easter impacted northeast Florida between November 5, 2021 and November 9, 2021. The bulk of the weather, including tropical storm force winds and several inches of rainfall occurred from November 5-6, 2021, although elevated water levels and high waves persisted for days thereafter. Wind gusts and atmospheric pressure reached tropical storm status. High astronomical water levels associated with the New Moon (commonly referred to as King Tides) coincided with elevated water levels and large waves compounded intense erosion throughout northeast Florida.

Based on the observed water level, wave, and wind data, the U.S. Army Corps of Engineers (USACE) Jacksonville District concluded the November 2021 nor'easter was an extraordinary storm event per ER 500-1-1, 5-20.f for the beaches of St. Johns County, Florida. This conclusion is founded on analyses based on storm duration, cumulative energy, and sediment transport potential. This conclusion is also supported by post-storm beach observations of which showed significant dune and berm erosion. The early winter season timing of this event will not be conducive to post-storm recovery, which may not occur until after the winter months given northeast Florida's seasonal wave conditions. Additional details on the disaster incident are documented in Appendix H.

11. DAMAGE DESCRIPTION

The storm caused significant sand loss from the beach berm and dune of the CSRM Project, with particularly significant erosion and scarping of the dune along most of the project shoreline. A post-storm project inspection, conducted by the Project Engineer on November 16, 2021, found minor damage to previously buried accessory structures (walkovers and seawalls) but did not observe any significant damage to upland infrastructure. The dune face retreated by 0 to 40 feet resulting in up to 12-foot-tall scarps and the exposure of many previously buried beach structures (walkovers and seawalls). The beach berm (represented by the +7.0-foot NAVD88 contour) retreated by 40 to 60 feet. Typical conditions of the post-storm project area beach are shown in Figure 2, Figure 3, and Figure 4. These damages, quantified in greater detail below, have lessened the Project's ability to provide the designed coastal storm damage reduction.



Figure 2: Photo facing west in front of The Reef Restaurant at Euclid Avenue (R-109) showing severe post-storm dune scarping (about 10 to 12 feet). November 16, 2021.



Figure 3: Photo facing northwest just south of Boating Club Road (just south of R-109) showing post-storm dune scarping, exposure of pre-existing seawalls, and undermining of beach access structures. November 16, 2021



Figure 4: Photo facing northwest just south of Carcaba Road (R-114) showing post-storm dune scarping, exposure of pre-existing seawalls, and undermining of beach access structures. The large beach access structure in the background cross SR A1a and connects to the Villages of Vilano. November 16, 2021

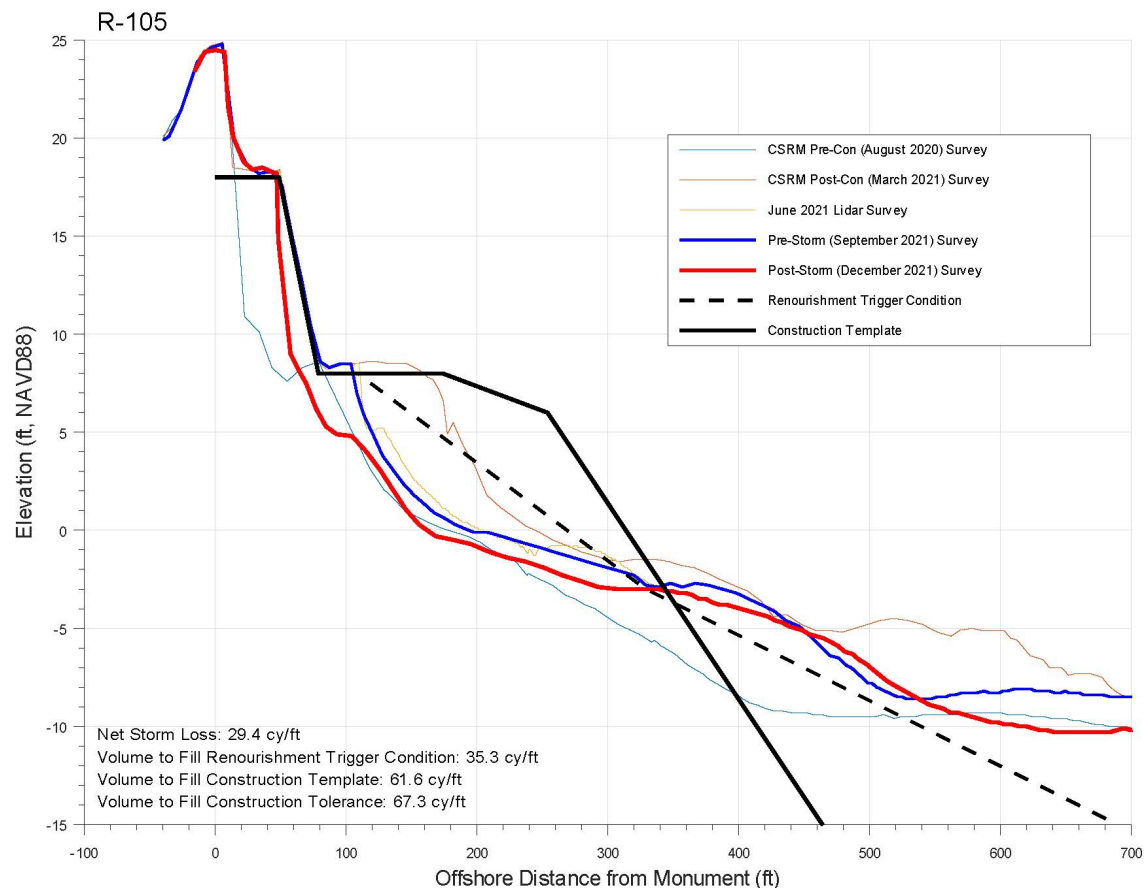
1. The berm width is less than 30 feet wide (half of the design template berm width) for at least one Florida Department of Environmental Protection (FDEP) R-monument profile in the project area (not including tapers). The berm width is measured as the cross-shore distance along the R-monument azimuth from the dune toe of the design construction template at +8.0 feet NAVD88 to the seaward position of the +7.0 feet NAVD88 contour. The elevation of +7.0 feet NAVD88 for the seaward position of the existing beach profile was chosen instead of +8.0' NAVD88 to avoid irregularities that occur in the top one foot of the berm crest.
2. The volume required to fill the construction template for the entire project area is generally at least 750,000 cy. This is called the "mobilization threshold."

While the existing condition of the project beach will be evaluated against this first criterion as indicated, this criterion also serves as the basis for the "renourishment trigger condition" that is used for the purpose of determining the volume of fill required to maintain

the minimum required CSRM protection. The renourishment trigger condition is here represented by a 30-foot-wide dune at an elevation of +8 feet NAVD88 with a foreshore slope that transitions from 1V:20H above mean low water (MLW) to 1V:30H below MLW until its intersection with the existing beach.

Impacts to the Project area are characterized by comparison of the pre-storm (September 2021) and post-storm (December 2021) surveys, as well as the construction template and renourishment trigger condition. An example of this comparison is shown in Figure 5. Comparison profiles at all of the monuments in the project area are included in Appendix I. The pre-storm survey was a beach profile survey conducted in support of monitoring requirements for the St. Johns County Shore Protection Project. The post-storm survey was a beach profile check survey collected shortly after the storm in order to quantify impacts to the CSRM project. The post-storm survey terminates at an elevation of about -10 feet NAVD88. As such, the following volume calculations do not account for volume change (erosion or accretion) that may have occurred between surveys beyond this depth. It is possible that some losses from the berm and nearshore have been deposited offshore and will recover over time. However, the degree of that recovery and the timeframe over which it may happen are unlikely to provide the protection called for by the project authorization.

South Ponte Vedra Beach and Vilano Beach Coastal Storm Risk Management Project



The net storm-induced sand loss from the project area is estimated at 340,000 cy (see Table 1). Volume losses over this time were moderate to severe along the entire shoreline, averaging 21.7 cy/ft, with significant variability from transect to transect.

Filling to the renourishment trigger condition would require approximately 513,000 cy (32.7 cy/ft along the project length), while filling to the project construction template would require about 995,000 cy (63.4 cy/ft, see Table 2). Volume needs are significant and fairly uniform alongshore. This fill need is well in excess of the 750,000 cy quantity identified in renourishment trigger criterion 2. Additionally, at all profiles within the authorized project limits, the berm is narrower than the 30-foot width identified in renourishment trigger criterion 1 above. As such, the CSR Project meets the renourishment trigger criteria laid out in the FR/EA. The total volumes shown in the following tables are rounded to the nearest thousand.

With the significant erosion into the dune, it is estimated that approximately 12.7 acres of dune vegetation have been lost since the completion of project construction, with the great majority of this loss occurring during the November nor'easter. This is equivalent to about 245,000 planting units lost.

South Ponte Vedra Beach and Vilano Beach Coastal Storm Risk Management Project

Table 1: Summary of pre- (September 2021) to post-storm (December 2021) volume losses along the St. Johns County CSRM South Ponte Vedra Beach and Vilano Beach Reaches shoreline[‡].

Monument	Distance Between	Net Volume Loss	
	ft	cy/ft	cy
Northern Limit		0.0	
	491.3		2,800
R-103		11.3	
	508.7		6,300
Taper Start*		13.4	
	481.0		6,400
T-104		13.4	
	995.8		21,300
R-105		29.4	
	983.0		22,400
R-106		16.2	
	1113.5		26,100
R-107		30.8	
	1063.3		24,200
R-108		14.8	
	1013.1		17,700
R-109		20.2	
	1123.2		22,600
T-110		20.0	
	1065.0		25,100
R-111		27.1	
	1038.3		41,200
T-112		52.3	
	1009.8		40,500
R-113		28.0	
	978.1		25,700
T-114		24.7	
	1119.3		21,300
R-115		13.4	
	1064.4		12,700
R-116		10.4	
	552.3		5,700
Taper Start*		10.4	
	570.7		10,700
R-117		27.2	
	504.3		6,900
Southern Limit		0.0	
Total	15,700		340,000

[‡] Total volumes shown in Table 1 are rounded to the nearest hundred for distance and thousand for volume

*Volume change at northern start of taper is assumed the same as T-104, while the volume change at the southern start of taper is assumed the same as R-116.

Table 2: Summary of volume needed to fill various conditions of the St. Johns County CSRM Project
South Ponte Vedra Beach and Vilano Beach Reaches shoreline.[§]

Monument	Distance Between	Volume Required to Fill					
		Renourishment Trigger		Construction Template			
		Condition		Required		Tolerance	
	ft	cy/ft	cy	cy/ft	cy	cy/ft	cy
Northern Limit				0.0		0.0	
	491.3				9,600		10,800
R-103				39.0		44.0	
	508.7				30,700		33,500
Taper Start*		56.0		81.5		87.9	
	481.0		26,900		39,200		42,300
T-104		56.0		81.5		87.9	
	995.8		45,500		71,300		77,300
R-105		35.3		61.6		67.3	
	983.0		41,600		67,200		73,000
R-106		49.3		75.1		81.2	
	1113.5		58,700		87,700		94,400
R-107		56.1		82.4		88.4	
	1063.3		49,600		77,300		83,700
R-108		37.2		63.1		69.1	
	1013.1		38,700		64,700		70,800
R-109		39.1		64.6		70.8	
	1123.2		38,000		66,800		73,500
T-110		28.5		54.5		60.1	
	1065.0		33,000		60,800		66,800
R-111		33.5		59.7		65.3	
	1038.3		32,500		58,900		64,600
T-112		29.2		53.9		59.1	
	1009.8		23,500		49,100		54,300
R-113		17.4		43.4		48.5	
	978.1		26,000		50,800		56,000
T-114		35.7		60.5		65.9	
	1119.3		44,000		68,300		74,600
R-115		43.0		61.6		67.4	
	1064.4		38,700		57,800		63,800
R-116		29.8		47.1		52.4	
	552.3		16,500		26,000		28,900
Taper Start*		29.8		47.1		52.4	
	570.7				18,600		21,200
R-117				18.0		22.0	
	504.3				4,500		5,500
Southern Limit				0.0		0.0	
Total	15,700		513,000		909,000		995,000

[§] Totals shown in Table 2 are rounded to the nearest hundred for distance and thousand for volume

*Fill need at northern start of taper is assumed the same as T-104, while the fill need at the southern start of taper is assumed the same as R-116.

12. NEED FOR PL 84-99 REHABILITATION.

The nor'easter that impacted the project area was an extraordinary storm event per ER 500-1-1, 5-20.f as described in Section 10.

The storm event eroded an estimated 340,000 cy from the project area. Following the storm an estimated 513,000 cy would be needed to rebuild the projects minimum design template and an estimated 995,000 cy would be needed to rebuild the full construction template.

All three applicable criteria described in ER 500-1-1, 5-20.e.(2) for determining if significant damage has occurred have been met.

- (a) The cost of the construction effort to effect repair of the project (based on the volume to restore the design template) exclusive of dredge mob/demob costs (\$11,405,100) exceeds \$1 million and is greater than 2 percent of the original project construction costs expressed in current day dollars (\$15,872,016).
- (b) The cost of the construction effort to effect repair of the project (based on the volume to restore the design template) exclusive of dredge mob/demob costs (\$11,405,100) exceeds \$6 million
- (c) More than one-third of the planned or historically placed sand for renourishment was lost. The planned nourishment volume for future nourishments is 866,000 cy. Approximately 340,000 cy was lost from pre to post storm which is 39% of the planned periodic nourishment volume.

This situation passed the "Risk Test" described in ER 500-1-1, 5-20.d. There is an immediate threat to the property, structures, and infrastructure that this project is designed to protect which includes 105 single-family residences, 9 multi-family residences, 5 commercial structures, and State Road A1A. It is necessary to undertake the proposed rehabilitation effort under the authority of PL 84-99 as soon as possible to minimize damages to the structures and infrastructure in the project area does not occur. In its current condition the project is providing only limited protection as only approximately 305,000 cy (23%) of the 1,300,000 cy placed for initial construction in February 2021 remain in place.

The next hurricane season begins on June 1, 2022. However, nor'easters could occur throughout the year and are most frequent in the fall and winter.

13. PROPOSED WORK.

PL 116-20 states that, "funding utilized for authorized shore protection projects shall restore such projects to the **full project profile** at full Federal expense". (Emphasis added) In accordance with PL 116-20 the proposed work will include nourishment of the full construction template.

The proposed work will likely require the use of a new additional sand source located approximately 8 miles offshore of the project area. Prior to the storm event an Engineering Documentation Report (EDR) and Environmental Assessment (EA) were in the process of being prepared so that this new offshore sand source could be used for future

nourishments or emergency events (like this one) that would require its use. Upon conclusion of environmental compliance, the proposed work would use this new offshore sand source. This PIR will be supplemented with the appropriate environmental documentation for the use of the new offshore sand source prior to the funds transmittal of construction phase activities in accordance with the guidance memorandum from CECW-HS dated October 26, 2020. Completion of the EDR and EA for the new offshore source is scheduled for completion in April 2022 (this includes 30-day public review and 60-day Coastal Zone Management Act (CZMA) Federal Consistency Determination (FCD) review).

14. COST ESTIMATE.

The amount of sand needed to rebuild the Project to the design level of protection, per the CECW-HS memo dated May 30, 2017, is estimated at 513,000 cy. The total estimated cost to rehabilitate the Project to the design template is \$15,242,900. This estimate includes: mobilization, demobilization, and preparatory costs; template construction and incidental costs (i.e., monitoring, beach tilling, surveys, vegetation planting, etc.); contingency; and supervision and administration (S&A) in accordance with EP 500-1-1.

The total cost, including mobilization and other associated costs, to rebuild the full construction template with approximately 995,000 cy is estimated at \$24,368,000. The estimated costs presented in this report (Table 3) are at the Fiscal Year 2022 (FY22) price level (October 1, 2021 - September 30, 2022). These costs were generated from the volumetric quantities required for each of the options mentioned above.

Public Law 116-20 states that, “funding utilized for authorized shore protection projects shall restore such projects to the **full project profile** at full Federal expense”. (Emphasis added).

Table 3: Cost Allocation for Alternatives 1 and 2. ^(1,2,3)

ST. JOHNS COUNTY CSRM PIR			
WBS Code	Project Feature	Alt 1 – Restore Post Storm to Design Template	Alt 2 - Restore to Full Construction Template
17	Mobilization and Demobilization	\$3,837,800	\$3,837,800
17	Beach Replenishment	\$8,041,000	\$16,053,900
17	Associated General Items	\$1,704,100	\$1,838,500
01	Lands and Damages	\$30,000	\$30,000
30	Engineering and Design	\$815,000	\$1,303,900
31	Construction Management	\$815,000	\$1,303,900
Total Cost		\$15,242,900	\$24,368,000

1. All cost estimates are at FY22 Price Levels.
2. Code 17 costs above contain contingencies per EP 500-1-1: "FCCE-funded portions of dredge mobilization/demobilization costs and sand renourishment (dredging) costs are limited to" 15%.
3. Code 31 costs above are S&A costs included in accordance with EP 500-1-1. Currently using rate based on last certified cost, which is being calculated as 7.5% of construction costs (including contingencies).

15. ECONOMICS.

Economic justification has been determined by analyzing the remaining costs and benefits for the remaining period of Federal participation with the inclusion of the proposed emergency work. The proposed emergency work would begin in FY22, and the planned periodic nourishment interval is assumed to reset and continue for the remaining period of Federal participation. Benefits from the last approved report (2017 FR/EA, FY17 Price Levels) have been used. Costs have been deflated back to the approved benefit price levels by applying the Civil Works Construction Cost Index System (CWCCIS) quarterly cost index published September 30, 2020. Recreation benefits are not used for justification of the emergency work.

With the proposed emergency work, the project would have remaining average annual benefits of \$1,961,000 (not including incidental recreation benefits) and remaining average annual costs of \$1,323,000 using the current discount rate 2.25%. The proposed emergency work is economically justified with the project having a remaining benefit to remaining cost ratio of 1.48 and remaining average annual net benefits of \$638,000 using the current discount rate of 2.25%. Additional details on the economic justification analysis can be found in Appendix L.

16. ENVIRONMENTAL CONSIDERATIONS.

Environmental coordination is complete for the beach fill area and inlet sand source. Additional environmental coordination for the new offshore sand source is ongoing. While no significant environmental issues exist, the following environmental concerns related to the new sand source are addressed below: fish and wildlife, cultural resources, essential fish habitat, coastal barrier resources, and water quality. Environmental compliance review will be completed prior to the receiving funding for construction phase activities. Once complete, information will be supplemented to the project information report. Additional details are provided in the below paragraphs and in Appendix M

a. Impacts, Beach Nourishment.

(1) The purpose of renourishing the previously nourished beach is to restore and maintain the hurricane protection and storm damage reduction benefits of the Project. Coastal Storm Risk Management Projects are typically designed to provide a minimum level of protection plus additional nourishment to optimize the renourishment interval (typically enough sand to achieve a renourishment interval of 10-15 years). The renourished beach will undergo a period of reworking by waves and currents. Direct burial of shoreline bottom (benthic) habitat would occur and result in suppression of recolonization of the infaunal community within this “equilibrium profile” temporarily affecting Essential Fish Habitat (EFH) for several fisheries described in the EFH sections of the 2017 CSRM and the National Environmental Policy Act (NEPA) currently being coordinated. During the first year following the renourishment event, there would be a high potential for greater than normal erosion of the dry beach along with possible loss of sea turtle nests and shoreline habitat.

(2) Some elevation in turbidity for the nearshore waters might also be expected during the renourishment event and during the first year following the event as the beach profile equilibrates but this has not been shown to happen. To reduce impacts, the sand used for renourishment is required to be similar to the “natural” or “existing” beach, beach compatible fill is described in 62B-41.007 Florida Administrative Code (F.A.C), scarps are removed just prior to sea turtle nesting season, and renourishment occurs outside the sea turtle nesting window or sea turtle nests are relocated to a “safe hatchery”. Monitoring for escarpments and compaction is typically performed on an annual basis just prior to sea turtle nesting season for three years following construction.

(3) Additionally, the sand dunes along the shoreline play a critical role in enhancing the storm protection and environmental function of the beach system. Sand dunes serve as the ultimate line of defense against storm surge and flooding by serving as a natural buffer to protect inland infrastructure. Sand dunes also provide important habitat for many plants and animals. In addition to providing a levee-like barrier against storm surge and coastal flooding, dunes are also an important resource in limiting beach erosion. During storms when the beach is being actively eroded, sand removed from the dunes is deposited onto the beach profile and serves as a natural, albeit limited, sand source to the beach. Over time the dunes are replenished by windblown sand from the berm.

b. Impacts, Borrow Site.

Borrow sites are selected for quality and quantity of sand, proximity to the beach, and potential for minimizing impact to valuable underwater resources (reef, hard ground, potential historic/cultural resources). A buffer zone between the borrow site boundary and such resources is typically required to minimize or avoid impacts. Buffer zones are specified in both the South Atlantic Regional Biological Opinions from the National Marine Fisheries Service (NMFS) as well as the State permit. If required to deliver sand to the beach, pipeline corridors are selected to minimize impact to benthic resources. The same pipeline corridor is used for subsequent renourishment events to limit impacts to one specific location. Temporary impacts consisting of increased turbidity and mortality of benthic macroinvertebrates would be expected at the borrow site. The N-3 borrow area will be used exclusively for the proposed work and is currently being evaluated through the NEPA process.

The proposed new borrow area for St. Johns CSRM (Vilano Beach) is located on the Outer Continental Shelf (OCS) in the Atlantic Ocean. The newly proposed sand borrow area N-3, is positioned east of the Vilano Beach project reach within federal waters, approximately 8 miles offshore and 9 miles northeast of St. Augustine Inlet, sand borrow source. N-3 is approximately 1,200-acres in size in water depths between 40 feet - 60 feet mean lower low water (MLLW) (NAVD 88). Approximately 10 million cy of beach compatible sand has been identified in N-3.

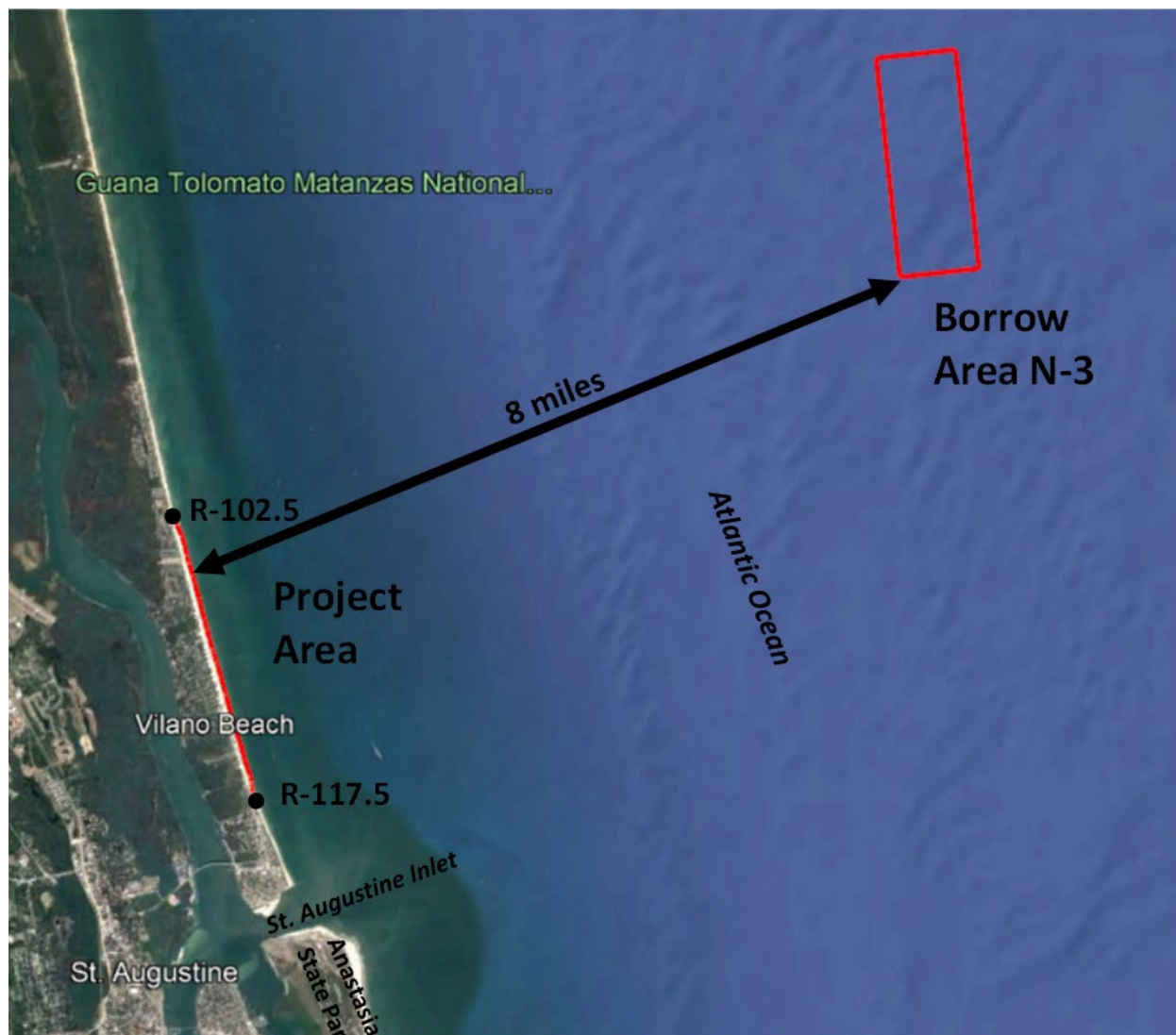


Figure 6: Location of St. Johns County CSRM and the newly proposed offshore sand Borrow area N-3.

c. Environmental Coordination.

Environmental compliance requirements will be satisfied prior to the funds transmittal of construction phase of this project. Once complete, information will be supplemented to the project information report, requirements will be satisfied prior to the funds transmittal of construction phase activities (and supplemented to this PIR). The proposed action would be conducted in accordance with the National Environmental Policy Act (NEPA), the National Historic Preservation Act (NHPA), and the Endangered Species Act (ESA), and other required laws and regulations. An integrated feasibility study and Environmental Assessment (EA) and a Finding of No Significant Impact (FONSI) were completed in 2017 for the proposed beach renourishment Project (USACE 2017) and covers placement of sand on the beach template. A supplemental NEPA document is currently being drafted to authorize the use of a new offshore sand borrow area for this St. Johns County CSRM project.

d. National Environmental Policy Act (NEPA).

The mining of offshore sand and placement onto the beach requires consideration under NEPA. An Environmental Assessment is currently underway to assess the use of N-3 as a new offshore borrow area for beach quality sand. These requirements will be satisfied prior to the funds transmittal of construction phase activities. The proposed new additional sand borrow area is located in Federal waters (>3 nautical miles offshore) on the OCS and the Bureau of Ocean Energy Management (BOEM) will be acting as a cooperating agency on the NEPA under preparation. An integrated feasibility study and Environmental Assessment (EA) and a Finding of No Significant Impact (FONSI) were completed in 2017 for the proposed beach renourishment Project (USACE 2017) and covers placement of sand on the beach. A more detailed description of the previously authorized of St. Johns County CSRM and potential effects can be found in the 2017 Integrated Feasibility Study Report with Final Environmental Assessment, St. Johns County, Florida (USACE 2017).

e. Threatened and Endangered (T&E) Species.

(1) Borrow Site. The use of the offshore borrow areas is currently being coordinated with the U.S. Fish and Wildlife Service (USFWS) and NMFS. These requirements will be satisfied prior to receipt of construction funds. The USACE determined that dredging to obtain borrow material from the offshore site has the potential to affect the following species: (1) may affect: swimming sea turtles (green sea turtle, hawksbill sea turtle, leatherback sea turtle, loggerhead sea turtle, Kemp's ridley's sea turtle), and (2) may affect, but is not likely to adversely affect Florida manatee, North Atlantic right whale, sei whale, humpback whale, sperm whale, fin whale, blue whale, Atlantic sturgeon, smalltooth sawfish, giant manta ray, oceanic whitetip shark, and scalloped hammerhead shark.

For potential effects to federally listed T&E species under the NMFS jurisdiction, the project meets the eligibility criteria to be covered by the NMFS' 2020 South Atlantic Regional Biological Opinion for Dredging and Material Placement Activities in the Southeast United States, as amended (SARBO). The SARBO covers dredging (e.g., maintenance, advance maintenance, minor channel modifications, borrow area dredging, and muck dredging), transportation of dredged material, dredged material placement, geotechnical and geophysical (G&G) surveys, and species handling in the southeast U.S., specifically from North Carolina/Virginia border through and including Key West, Florida and the islands of Puerto Rico and the U.S. Virgin Islands. The following types of dredges and dredging methods are covered by the SARBO: mechanical (e.g., clamshell and backhoe), hydraulic (e.g., cutterhead suction/pipeline dredging and hopper), side-cast/split hull, and agitation (e.g., bed leveling, water injection dredging) as well as dredging pipelines and support vessels. The SARBO also covers relocation trawling, ESA-listed species handling, and aerial surveys. The use of equipment and/or methods not covered by the SARBO may require additional coordination and/or consultation with NMFS.

The project will adhere to applicable SARBO Project Design Criteria (PDC). PDCs are the specific criteria, including the technical and engineering specifications, indicating how

an individual project must be sited, constructed, or otherwise carried out to avoid or minimize adverse effects to ESA-listed species or designated critical habitat (DCH). In designing the PDCs, conditions are established that avoid adverse effects on listed species or DCH or, where the adverse effect cannot be avoided, to limit effects to predictable levels that will not jeopardize the continued existence of listed species or destroy or adversely modify critical habitat either at the individual project level or in aggregate. Additionally, NMFS' sea turtle and smalltooth sawfish construction conditions will be implemented. With implementation of the applicable PDCs and construction conditions, the proposed work would not jeopardize the continued existence of any threatened or endangered species or destroy or adversely modify any designated critical habitat.

(2) Beach Placement. The placement of beach quality sand for the authorized project has been evaluated through previous NEPA documentation described in the 2017 Integrated Feasibility Study Report with Final Environmental Assessment. (USACE 2017). The USACE determined that the proposed work may affect nesting sea turtles and may affect, but is not likely to adversely affect the West Indian manatee, Anastasia Island beach mouse, rufa red knot, and piping plover. USACE determined that the sand placement activities associated with this project fall within the scope of the USFWS' 2015 Statewide Programmatic Biological Opinion, as amended (SPBO) and the 2013 Programmatic Piping Plover Biological Opinion (P3BO) (2013). ESA Section 7 informal consultation on the placement area was completed with USFWS in a letter dated December 22, 2016 for rufa red knot, Anastasia Island beach mouse, piping plover, East Indian manatee, loggerhead sea turtle, green sea turtle, leatherback sea turtle, and Kemp Ridley's sea turtle. This letter can be found in Appendix G of the 2017 St. Johns County CRSM study report (USACE 2017). Applicable Terms and Conditions (T&Cs) of the SPBO and P3BO as well as standard protection measures for East Indian manatee, sea turtles, rufa red knot, piping plover, and Anastasia Island beach mouse shall be implemented.

For potential effects to federally listed T&E species under the NMFS jurisdiction, the USACE determined that the project met the criteria to be covered by the 1991 South Atlantic Regional Biological Opinion (SARBO; as amended in 1995 and 1997) for federally-listed marine species. USACE reinitiated consultation with NMFS under the SARBO; however, NMFS provided guidance that projects found to be consistent with the SARBO as reinitiated for loggerhead critical habitat should not consult separately while consultation is ongoing for the programmatic opinion (R. Sweeney, email correspondence dated November 18, 2015). Therefore, no additional coordination was required with NMFS. The project meets the eligibility criteria to be covered by the NMFS' 2020 SARBO. Changes between the old SARBO and the new SARBO do not trigger the need for supplemental NEPA in this context. The project will adhere to all applicable 2020 SARBO PDCs and construction conditions for beach placement.

f. Archeological and Cultural Resources.

As part of NEPA, the effect of the project on cultural resources has been analyzed as described below. The coordination and consultation regarding historic properties

(resources eligible for listing in the National Register of Historic Places) under the National Historic Preservation Act (NHPA) and its implementing regulations (36 CFR Part 800) are also described below. Prior coordination and consultation for the Ebb Shoal Borrow Area has concluded, while additional coordination is ongoing for the N-3 area, as well as additional pipeline corridors that will be necessary for beach placement.

(1) Ebb Shoal Borrow Area. Prior consultation for the use of the St. Augustine Inlet Ebb Shoal Borrow Area, placement of sediment on the beach, and individual pipeline corridors has taken place, and is addressed in the 2017 *St. Johns County Coastal Storm Risk Management Project Integrated Feasibility Report and Environmental Assessment* (USACE). This document addresses archaeological and cultural resources concerns with the Ebb Shoal Borrow Area and references several potentially eligible archaeological sites located within the borrow area complex, around which avoidance buffers must be maintained in order to satisfy the conditions of a determination of no affect to historic properties per consultation with the Florida State Historic Preservation Office (SHPO) (DHR Project File No.: 2015-1661) (Appendix M, Tabs M-5 and M-6).

The 2017 document references ongoing consultation with Florida SHPO for previously un-surveyed portions of the shoal complex. That consultation has since been completed, and Florida SHPO concurred with a determination of no affect to historic properties, contingent upon the maintenance of avoidance buffers in addition to those referenced in the 2017 *St. Johns County Coastal Storm Risk Management Project Integrated Feasibility Report and Environmental Assessment* (DHR Project File No.: 2016-3127) (Appendix M, Tabs M-5 and M-6).

(2) Offshore Borrow Sites. NHPA consultation and NEPA review are ongoing for the proposed new borrow area N-3. Requirements will be satisfied prior to the funds transmittal of construction phase activities (and supplemented to this PIR).

(3) Beach Placement. While cultural resources concerns involving the areas of beach placement are addressed in the *St. Johns County Coastal Storm Risk Management Project Integrated Feasibility Report and Environmental Assessment* (USACE 2017), new locations for the pipelines through which sand will be pumped to the placement areas are being proposed. The exact locations of those pipeline corridors are as yet unknown, hence NHPA consultation and NEPA review are ongoing for these proposed new pipeline corridors. Requirements will be satisfied prior to the funds transmittal of construction phase activities (and supplemented to this PIR).

(4) Emergency Procedures. The implementing regulations of the NHPA include provisions during emergency procedures (36 CFR 800.12). These regulations apply when the President, a tribal government, or the Governor of a State declares a disaster or emergency, or if an immediate threat to life or property is identified. This only applies within the first 30 days after the formal declaration of the appropriate authority and may require additional consultation. While no formal declaration has been made regarding a disaster or emergency, there is an immediate threat to property, as discussed in Section 12 above; however, the storm event in question occurred greater than 30 days prior the

date of this PIR, therefore provisions for emergency procedures under 36 CFR 800.12 do not apply.

(5) Inadvertent Discoveries. All project specifications include a clause for unanticipated discoveries, consistent with 36 CFR 800.13.

g. Clean Water Act.

A Clean Water Act Section 404(b) analysis for beach placement has been previously completed and coordinated with the State and appropriate stakeholders during completion of the 2017 Integrated Feasibility Study Report with Final Environmental Assessment, St. Johns County, Florida (USACE 2017). Dredging at the borrow area is not expected to trigger a 404(b) analysis.

The USACE has water quality certification under Section 401 of the Clean Water Act for beach placement. This water quality certification expires on March 26, 2035. The Corps will be seeking water quality certification for the new borrow area.

h. Coastal Zone Consistency.

The State of Florida has determined that the beach placement is consistent with the State's Coastal Zone Management Program. This determination was made with issuance of the State permit for this Project which expires on March 26, 2035. The Corps anticipates concurrence with its determination that the proposed work using the new borrow area is consistent with the state's Coastal Zone Management Program to the maximum extend practicable.

i. Coastal Barrier Resources Act (CBRA).

The Coastal Barrier Resources Act (CBRA) of 1982 (16 U.S.C. §3501 et. seq.) and the Coastal Barrier Improvement Act (CBIA) of 1990 (PL 101-591) limit Federally-subsidized development within the CBRA Units to limit the loss of human life by discouraging development in high-risk areas, to reduce wasteful expenditures of Federal resources, and to protect the natural resources associated with coastal barriers. CBIA provides development goals for undeveloped coastal property held in public ownership, including wildlife refuges, parks, and other lands set aside for conservation ("otherwise protected areas," or OPAs). These public lands are excluded from most of the CBRA restrictions, although they are prohibited from receiving federal flood insurance for new structures.

The official USFWS Coastal Barrier Resources System (CBRS) maps were reviewed (<https://www.fws.gov/CBRA/Maps/Mapper.html>). Four CBRA Units classified as OPAs are located adjacent to the project area (Figure 7):

- FL-03P (Guana River) is located immediately north of Vilano Beach (St. Johns County CSRM).
- P-04A (Usina Beach) is intersecting the southern portion of St. Johns County CSRM.
- P-05 (Conch Island) is located at the area around St. Augustine Inlet including Porpoise Point on the north side and the northern portion of Anastasia State Park.

- P-05P (Conch Island) is the remaining portion of Anastasia State Park.

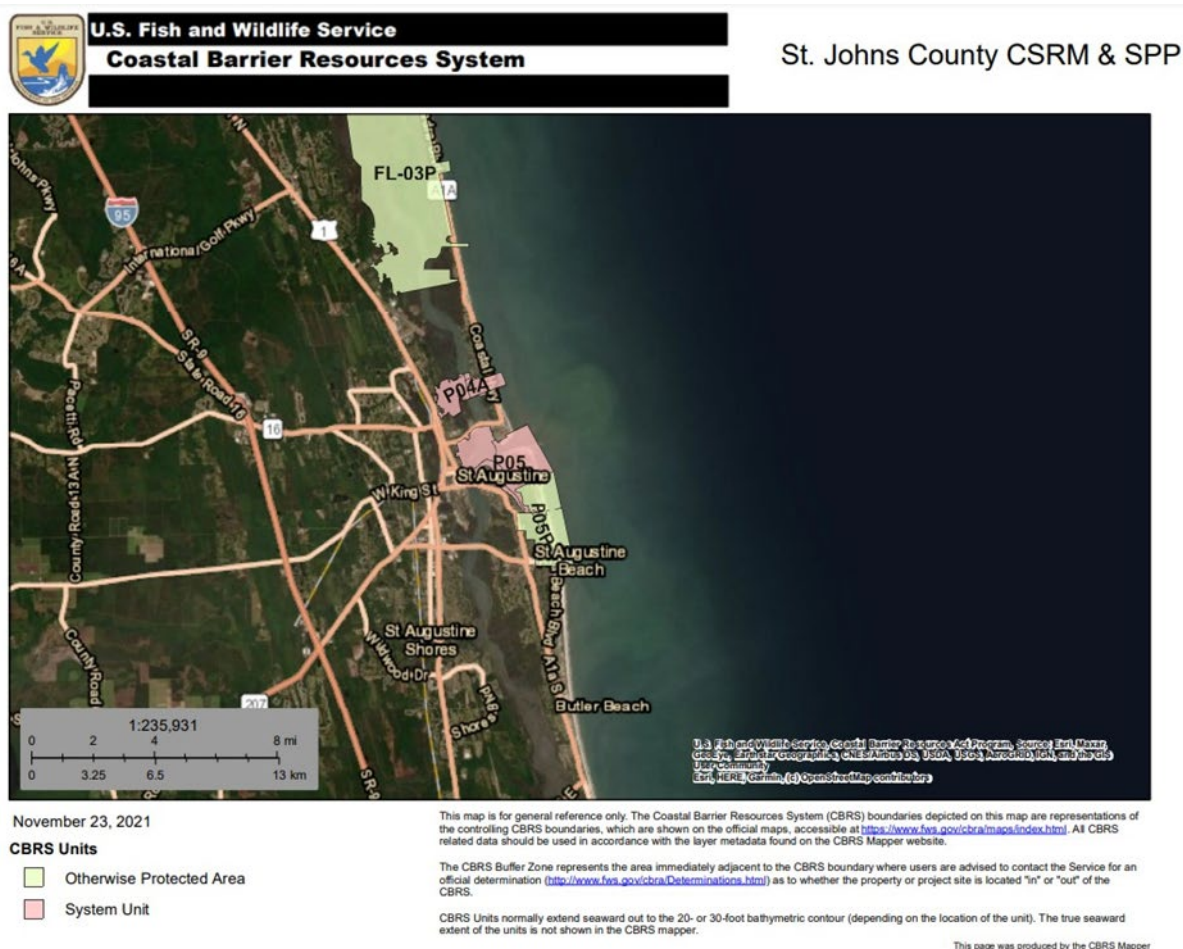


Figure 7: Location of CBRS Units OPA-Guana River Unit FL-03P, Usina Beach Unit P04A, Conch Island Unit P05, and OPA Conch Island Unit P05P in the vicinity of St. Johns County CSRM (Vilano Beach) and St. Johns County Shore Protection Project (St. Augustine Beach)

Dredging of N-3 sand borrow site would not occur in designated CRBA zones; however, placement will restore and stabilize the beaches in the designated CBRS units. The PIR does not include the construction of structures that would require Federal flood insurance; therefore, Federal expenditures for the proposed project are not restricted. Consultation for the placement of sand from the St. Johns County projects within CBRS units was completed with USFWS via letter dated October 25, 2016. USACE will confirm the 2016 consultation prior to construction and is currently coordinating with USFWS as part of the NEPA process. These requirements will be satisfied prior to the funds transmittal of construction phase activities.

j. Essential Fish Habitat.

The Magnuson-Stevens Fishery Conservation and Management Act requires the Federal Agency to prepare an Essential Fish Habitat (EFH) Assessment for the NMFS. EFH consultation will be updated for the new borrow areas with the draft (January 21, 2022)

NEPA notice of availability following the October 1, 2019, “finding” from NMFS. An assessment is currently being prepared and coordinated with NMFS during public review for the NEPA document currently in progress regarding the new offshore borrow area N-3. Previous EFH consultation (letter dated February 14, 2017) for this project can be found in Appendix G of the 2017 St. Johns County CSRM study report (USACE 2017). These requirements will be satisfied prior to the funds transmittal of construction phase activities.

k. References

U.S. Army Corps of Engineers (USACE). 2017. St. Johns County Coastal Storm Risk Management Project, Final Integrated Feasibility Study and Environmental Assessment. South Ponte Vedra Beach, Vilano Beach, and Summer Haven Reaches St. Johns County, Florida.

17. PERMITS.

Section 401, Clean Water Act, Water Quality Certification (WQC) is authorized through the South Ponte Vedra and Vilano Beach Coastal Storm Risk Management Project, No. 0377120-001-JC Joint Coastal Permit which expires March 26, 2035. A water quality certification from FDEP will be required to add the additional offshore borrow area N-3. These requirements will be satisfied prior to the funds transmittal of construction phase activities.

18. IMPLEMENTATION SCHEDULE.

The anticipated schedule for activities needed to complete the proposed emergency work is as follows.

- The EDR and EA to use the new offshore borrow area would be completed April 2022.
- Pre-construction Engineering and Design activities, including a permit modification to use the new offshore sand source, would begin in February 2022 (or as soon as PED funds are received).
- A contract would be awarded, and construction would begin in June 2022.
- Construction would be completed by January 2023.

19. RECOMMENDATIONS.

Based on study findings, the nor'easter that impacted the project area from November 5-9, 2021 meets criteria in ER 500-1-1 for extraordinary storm event, significant amounts of damage, and the risk test for immediate threats to property, structures, and infrastructure. The proposed emergency work to restore the full construction template, in accordance with PL 116-20, is economically justified with the project having a remaining benefit to remaining cost ratio of 1.48. This PIR will be supplemented with additional environmental information and documentation for the use of a new sand source for the proposed emergency work prior to the funds transmittal of construction phase activities in accordance with the guidance memorandum from CECW-HS dated October 26, 2020. I recommend that emergency rehabilitation of the South Ponte Vedra Beach and Vilano Beach Reaches of the St. Johns County, Florida Coastal Storm Risk Management Project, as described herein, be performed under the authority of PL 84-99.

JAMES L. BOOTH
Colonel, EN
Commanding

List of Acronyms

ASA(CW) - Assistant Secretary of the Army for Civil Works
ASWE - Accumulated Storm Wave Energy
BCOE – Biddability, Constructability, Environmental review
BCR - Benefit-to-Cost Ratio
CA – Cooperation Agreement
CBRA – Coastal Barrier Resource Act
CG - Construction General
COSI - Coastal Storm Impulse Parameter
CWCCIS - Civil Works Construction Cost Index System
CY – cubic yards
EA - Environmental Assessment
EFH - Essential Fish Habitat
EIS - Environmental Impact Statement
EM - Engineering Manual
ER – Engineer Regulation
ESA - Endangered Species Act
FCCE - Flood Control and Coastal Emergency
FDEP - Florida Department of Environmental Protection
FEMA - Federal Emergency Management Agency
FY – Fiscal year
GRBO - Gulf of Mexico Regional Biological Opinion
H.R. – House Resolution
HSDR - Hurricane and Storm Damage Reduction
HSPP – Hurricane/Shore Protection Project
MCACES - Micro-Computer Aided Cost Estimating System
MCY – Million Cubic Yards
MHHW - Mean Higher High Water
MLW - Mean Low Water
MLLW - Mean Lower Low Water
MSL - Mean Sea Level
NAVD88 - North American Vertical Datum of 1988
NEPA - National Environmental Policy Act
NDBC - National Data Buoy Center
NGVD - National Geodetic Vertical Datum
NMFS- National Marine Fisheries Service
NOAA - National Oceanic and Atmospheric Administration
NOS - National Ocean Service
PCA - Project Cooperation Agreement
PED – Preconstruction, Engineering and Design
PL 84-99 - Public Law 84-99
RBO - Regional Biological Opinion
RBRCR - Remaining benefit to remaining cost ratio
RIP - Rehabilitation and Inspection Program
S&A - Supervision and administration

SEI - Storm Erosion Index

SHPO - State Historic Preservation Office

SPBO - Statewide Programmatic Biological Opinion

SPP - Shore Protection Project

TS - Tropical Storm

USACE - U.S. Army Corps of Engineers

USF – University of South Florida

USFWS - U.S. Fish and Wildlife Service

UTC - Coordinated Universal Time

WIS - Wave Information Study

WQC - Water Quality Certification

WRDA - Water Resources Development Act

Part III. Appendices

Appendix A. Public sponsor's request for assistance



St. Johns County Board of County Commissioners

Office of the County Administrator

November 17, 2021

U.S. Army Corps of Engineers
Jacksonville District
Attn: Commander and District Engineer Colonel James L. Booth (CESAJ-DE)
701 San Marco Blvd.
Jacksonville, Florida 32207

Dear Colonel Booth:

The St. Johns County Coastal Storm Risk Management Project (South Ponte Vedra Beach and Vilano Beach Reaches) suffered extraordinary damage from the nor'easter that impacted the project from November 5 through November 9. We respectfully request that the U.S. Army Corps of Engineers evaluate and repair the damage to the project using federal funds. Timely assistance would be appreciated given the vulnerability of the oceanfront properties and A1A.

All of the entire design berm and at least half of the dunes are gone, leaving 10' – 15' escarpments throughout the project area. The damage is severely limiting public access and the Commission has authorized the declaration of a limited state of emergency.

Your staff has visited the project area in preparation for drafting a Project Information Report and we have supplied pictures representative of the damage. LiDAR data was collected in the project area immediately after the storm, and we will submit additional data in the coming weeks as it becomes available.

St. Johns County is grateful for the long-standing partnership with the USACE and the historic efforts expended in maintaining the ongoing beach projects and feasibility studies. We look forward to continued collaborative effort with the Corps. If you have any questions, please contact me at (904) 209-0530, or Damon Douglas at (904) 209-0794.

Respectfully,

A handwritten signature in black ink, appearing to read "Brad Bradley".

Brad Bradley
Deputy County Administrator

Appendix B. Project map(s)

See Figure 1 in Section 1 of the main report.

Appendix C. Project Overview

See Sections 1-8 in the main report.

Appendix D. Project Design Data

See Section 6 in the main report.

Appendix E. Project Maintenance Data

See Section 7 in the main report.

Appendix F. Project Renourishment Data

See Section 8 of the main report.

Appendix G. Previous PL 84-99 or Other Federal Agency Assistance

See Section 9 in the main report.

Appendix H. Disaster Incident

Extraordinary Storm Analysis – November 2021 Nor'easter

Storm Event

A strong and long-lasting nor'easter impacted northeast Florida between 5 November 2021 and 9 November 2021. The bulk of the weather, including tropical storm force winds and several inches of rainfall occurred from 5 – 6 November, although elevated water levels and high waves persisted for days thereafter. Wind gusts and atmospheric pressure reached tropical storm status while rainfall totals were between about 3.5 to 4.5 inches from Mayport, FL in Duval County to Marineland, FL on the St Johns and Flagler County border. High astronomical water levels associated with the New Moon (commonly referred to as King Tides) coincided with elevated water levels and large waves compounded intense erosion throughout northeast Florida.

“Extraordinary Storm” Determination

ER 500-1-1, “Emergency Employment of Army and Other Resources, CIVIL EMERGENCY MANAGEMENT PROGRAM” dated 30 September 2001 provides guidance to determine whether a storm event is characterized as an “extraordinary storm”. The pertinent sections of the guidance contained in ER 500-1-1 for this analysis are as follows:

*ER 500-1-1 Paragraph 5-20(e). **The Extraordinary Storm.** To be eligible for Rehabilitation Assistance, the HSPP must be substantially eroded/damaged by wind, wave, or water action of an other than ordinary nature. USACE defines this as an "extraordinary storm". An extraordinary storm is a storm that, due to length or severity, creates weather conditions that cause significant amounts of damage to a Hurricane/Shore Protection Project.*

ER 500-1-1 Paragraph 5-20(e)(1). "Length or severity" refers to a Category 3 or higher hurricane as measured on the Saffir-Simpson scale, or a storm that has an exceedance frequency equal to or greater than the design storm of the project.

The US Army Corps of Engineers' (USACE) Jacksonville District (SAJ), Hurricane Storm Damage Reduction (HSDR) and Coastal Storm Risk Management (CSRM) beach nourishment projects do not specify a standard “design storm” protection threshold. They are designed to provide protection against historical storms experienced in the project area. The berm height is designed using USACE guidance EM 1110-2-3301, which specifies the construction berm elevation should be the same or slightly less than the natural berm crest elevation. The berm width is optimized via economic analyses using predicted shoreline recession rates and storm-induced damages associated with recession (ER 1105-2-100).

*ER 500-1-1 Paragraph 5-20(f). **Extraordinary Storm Justification.** The PIR must include justification that substantiates the occurrence of an extraordinary storm. The determination of whether a storm qualifies as extraordinary will be made by the Director of Civil Works, in consultation with the Assistant Secretary of the Army for Civil Works (ASA(CW)) if necessary. PIR justification will include relevant data from the National Weather Service. Saffir-Simpson scale Category I and Category II hurricanes (as measured at the HSPP project) are presumed to be ordinary storms in the absence of a preponderance of evidence that indicates a different conclusion.*

The storm characteristics of this nor'easter (i.e., wind, surge, and waves) were evaluated to determine if it was an “extraordinary” event. Wind speed and direction and total water level were recorded at the

National Oceanic and Atmospheric Administration (NOAA) National Ocean Service (NOS) Station 8720218 at Mayport Bar Pilots Dock, FL. Wave data was measured by a ‘Waverider’ buoy that stores data on NOAA’s National Data Buoy Center’s (NDBC) website. The NDBC Station 41117 is also known as the Coastal Data Information Program (CDIP) Station 194 (labeled “St. Augustine Buoy” in **Figure 8**), and it is positioned in a water depth of 23.6 m (77.4 ft) approximately 14.0 miles east of St. Johns County, FL. **Figure 8** shows the locations where storm data was measured, along with available Wave Information Study (WIS) and Coastal Hazards System (CHS) data locations. WIS provides a numerical model hindcast of wave conditions covering the past 40 years, while CHS provides annual exceedance frequencies for water level and wave parameters based on probabilistically derived synthetic storm suite covering the expected parameter space for the region. The locations where storm data has been gathered for this analysis provide an adequate data set for describing general storm conditions in northeast Florida. Although the severity of erosion along the shorelines of the St. Johns County federal projects in the region was variable, the “extraordinary storm” characterization of this nor’easter is applicable to all projects in northeast Florida.

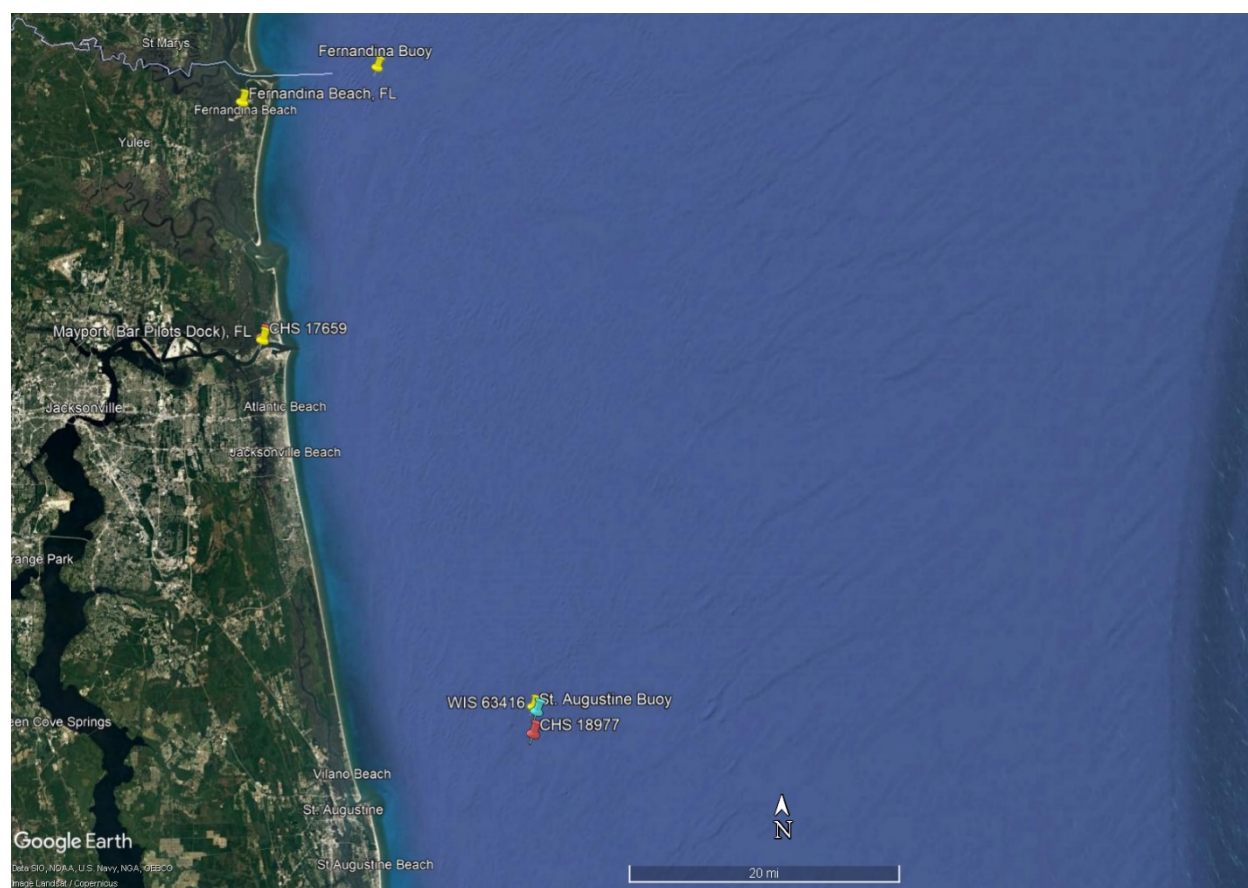


Figure 8. Observations and model output locations (Google Imagery and data from NOAA and USACE)

Storm Winds

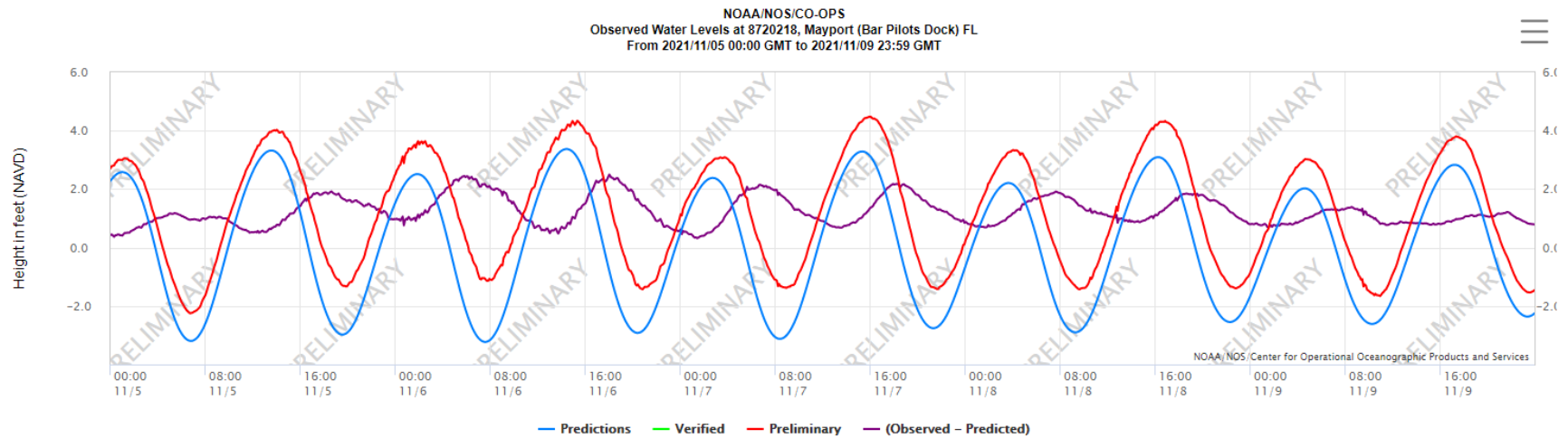
USACE guidance ER 500 1-1 states that Saffir-Simpson Scale Category 1 and Category 2 hurricanes are presumed ordinary storms. The Saffir-Simpson Hurricane Wind Scale is a 1 to 5 rating based on a hurricane's maximum 1-minute sustained wind speed. This scale estimates potential property damage. Hurricanes reaching Category 3 and higher are considered “major” hurricanes because of their potential for significant loss of life and damage to property. HSDR and CSRMB beach nourishment projects are not designed to reduce damages caused by high winds. They are instead designed to reduce the risk of life loss and property damages caused by coastal storms. Wind speed alone (the Saffir-Simpson Scale threshold parameter used to define hurricane categories) does not fully provide an indication of total damage expected from a storm event in any one location, and the National Hurricane Center (NHC) has removed correlation between a storm's wind category designation and the storm's surge or wave impacts. Therefore, in addition to wind speed, other characteristics indicative of overall damage such as surge, waves, duration, etc. should be used to determine if a storm is “extraordinary”.

While the storm described in this report was not a hurricane, this nor'easter produced wind speeds akin to a tropical storm both offshore and along the coast. These wind observations alone, do not lead to an extraordinary designation.

Observed water levels

Peak observed water levels at the mouth of the St. Johns River (Mayport, FL) occurred on the morning of 7 November 2021, where NOAA Station 8720218 recorded a maximum water level of 4.48 feet (ft) NAVD88 (2.52 ft MHHW; **Figure 9**). **Figure 10** shows that the Mayport gauge experienced “Moderate” inundation multiple times throughout this storm's duration, most notably each day from 5 November to 8 November, and minor flooding levels still persisting into Tuesday morning. According to the Coastal Hazards System (CHS) save point 17659 located near the Mayport gauge, the observed water level of 4.48 ft NAVD88 falls between an annual exceedance frequency of 1.0 and 0.5. While the magnitude is not extraordinary, similarly high values were reached on the preceding and following days (Dec 5, 6, and 8 November 2021) showing the prolonged nature of the event. In the 1-minute water level record at this location dating back to 18 March 2014, no single event had a more prolonged duration. This is due largely to the powerful storm system, the timing of the monthly New Moon, and the time of year where steric effects (water expansion due to warmer seasonal water temperatures) yields the highest high tides of the year. This means that super high tides and days of elevated water levels impacted the coastline more drastically than a similar storm in the winter or spring time when average seasonal water levels are generally smaller in magnitude.

South Ponte Vedra Beach and Vilano Beach Coastal Storm Risk Management Project



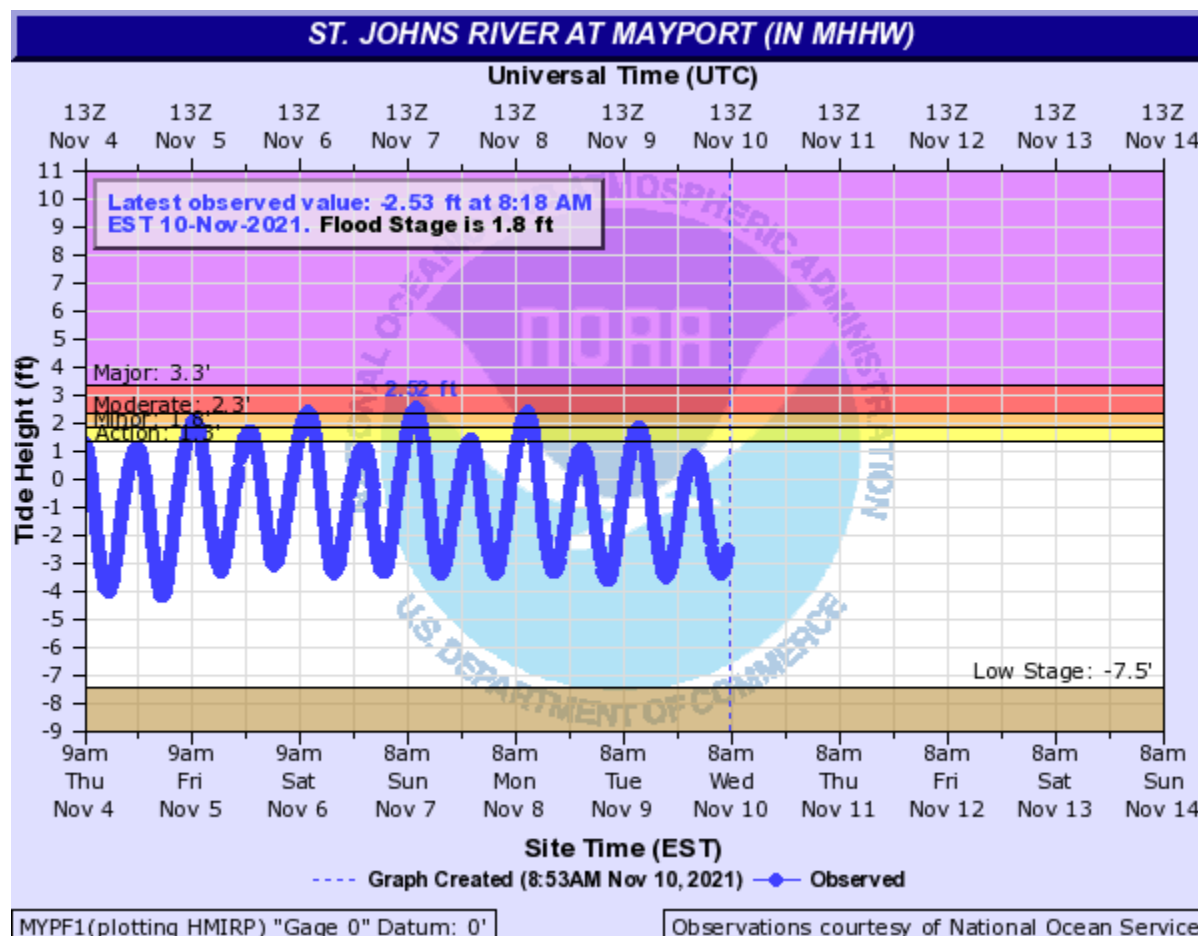


Figure 10: Observed tide height and NOAA flooding thresholds for the Mayport, FL gauge (ft, MHHW)

Wave heights were captured at the St. Augustine CDIP buoy (194), where the peak significant wave height of 4.76 m (15.62 ft) was observed on 6 November (Figure 11) and wave heights exceeded 2 m (6.6 ft) for about 4 consecutive days. This buoy is in a water depth of 23.6 m (77.4 ft) approximately 14.0 miles offshore. The closest CHS save point to the buoy is save-point 18977. According to this save point, the peak wave height during the nor'easter falls between a 0.2 and 0.1 annual exceedance frequency. Although the peak wave height is not extraordinary the prolonged duration of the event is unusual and contributed to the effects realized on the beach.

This buoy has a relatively short history; however, the buoy location corresponds with WIS Station 63416 (Figure 8). WIS provides a model hindcast of wave conditions at this location from 1980 through 2019. Given the unusually long duration of the nor'easter, the 40-year WIS record was analyzed to provide context to the cumulative energy of the event. Rather than focusing on the peak of the storm, the wave energy (taken as wave height squared) was summed throughout the event and compared to other events. To identify events in the historical record, a declustering routine was performed by defining storm events centered around a peak that exceeds the mean wave height of the record, plus two standard deviations. Storm events were also separated by a minimum of five days since a single nor'easter can last this long; this eliminates the risk of including the same event twice in the declustering routine, resulting in a total of 478 declustered events. The squared wave height for each consecutive hour where the event wave

height exceeded the mean wave height plus two standard deviations was then summed to determine the annual exceedance frequency of the cumulative energy using the Stochastic Storm Simulation System's Stochastic Simulation Technique (StormSim SST). A plot of the results is shown in **Figure 12**. The cumulative energy during the November nor'easter was 812.5 m² using CDIP Station 194, which corresponds with an annual exceedance frequency of about 0.2 based on the analysis and the 9th strongest of 478 events based on cumulative energy.

Longshore Transport Potential

To get an estimate of the longshore transport potential, the CERC equation was calculated for the duration of the storm event. The CERC equation is arguably the most widely used model for estimating total longshore sediment transport rate. The model assumes that the total longshore sediment transport rate is proportional to the longshore energy flux. It is given by:

$$I = K E c_{g,br} \sin \theta_{br} \cos \theta_{br}$$

In which I = longshore transport rate; $E = 1/8 \rho g (H_{rms,br})^2$ = wave energy at breaker line; $H_{rms,br}$ = rms wave height at breaker line; $c_{g,br} = n_{br} C_{br}$ = wave group celerity at breaker line; θ_{br} = wave angle at breaker line (between wave crest line and coastline); K = coefficient (=0.77).

Summing the CERC equation throughout the event leads to a cumulative mass transport potential. Consistent assumptions regarding the nearshore hydrodynamics and sediment characteristics were used in the CERC equation when evaluating events in both WIS and CDIP datasets. Following the same procedure for the 478 events in the WIS record shows that the November 2021 nor'easter yields the highest longshore transport of all 478 declustered WIS events using the CERC equation. The cumulative transport potential for the WIS events were normalized to the value from the November 2021 nor'easter, and those events are plotted in **Figure 13** to indicate relative transport magnitude to other historic events. This event is likely the highest due to two factors: the long duration and the consistently intense north-to-south wave direction (roughly 3.9 days of wave heights above the WIS mean wave height plus two standard deviations).

Many traditional events that impact this area such as hurricanes passing offshore feature short durations of high wave heights and a change in wave direction. This event lasted multiple days with consistent calculated transport potential from north to south. Only 12 declustered WIS events were longer in duration with waves exceeding the mean plus two standard deviations of the WIS record (6.46 ft), but these 12 events were not conducive to similarly large net longshore transport (i.e., a variable direction throughout the event). Due to the long duration and directionality of the event, the potential for sediment transport from the nor'easter was greater than any other storms in the WIS record.

"Extraordinary Storm" Conclusion

Based on the observed water level, wave, and wind data, USACE Jacksonville District concluded the November 2021 nor'easter was an extraordinary storm event per ER 500-1-1, 5-20.f for the beaches of St. Johns County, FL. This conclusion is founded in analyses based on storm duration, cumulative energy, and sediment transport potential and is supported by visual observation of the beaches following passage of storm, which showed significant dune and berm erosion. The early winter season timing of this event will not be conducive to post-storm recovery, which may not occur until after the winter months given the seasonality of wave conditions for the beaches of northeast Florida.



Figure 11: Observed wave heights at CDIP 194 (St. Augustine, FL) in m

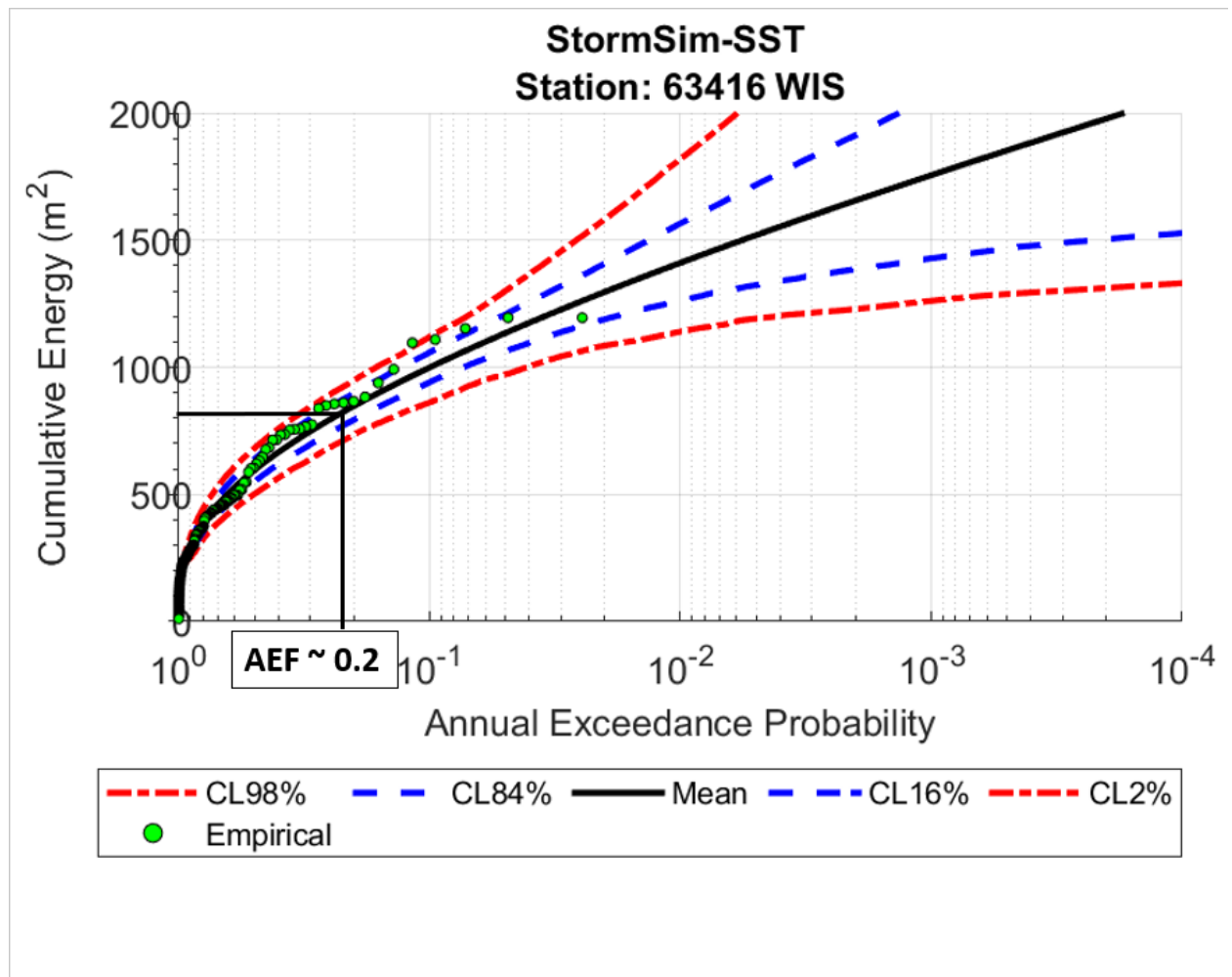


Figure 12: StormSim SST analysis of annual exceedance frequency of cumulative wave energy to WIS save point 63416

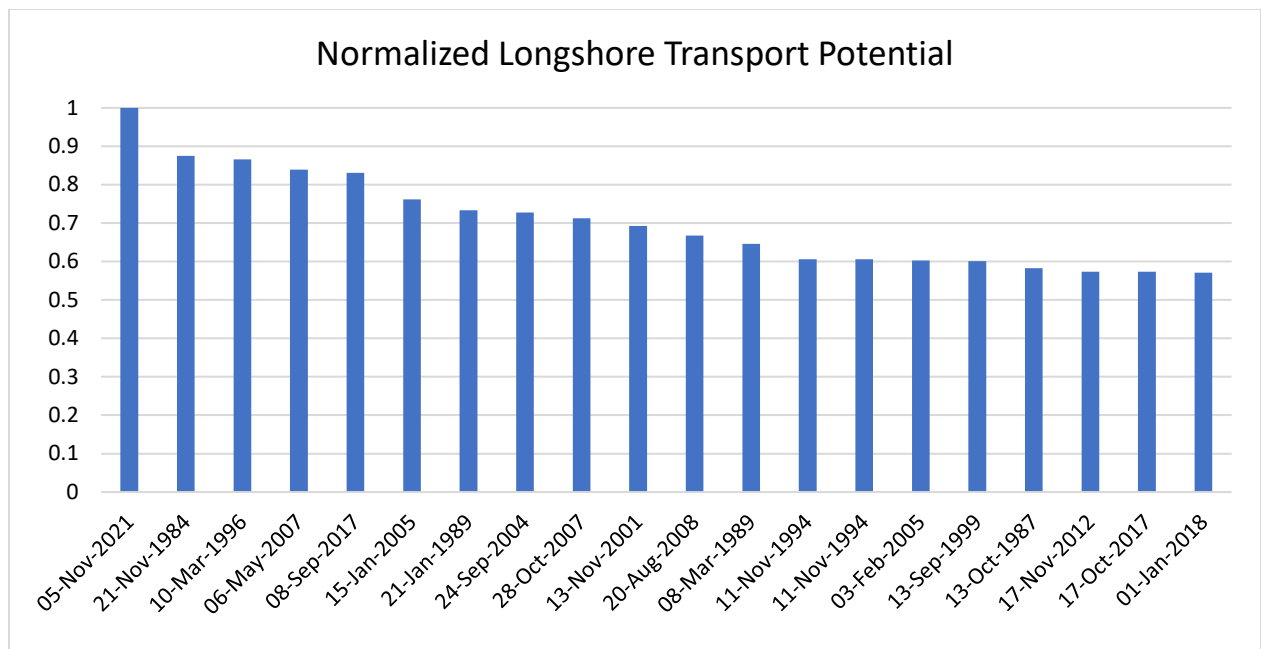
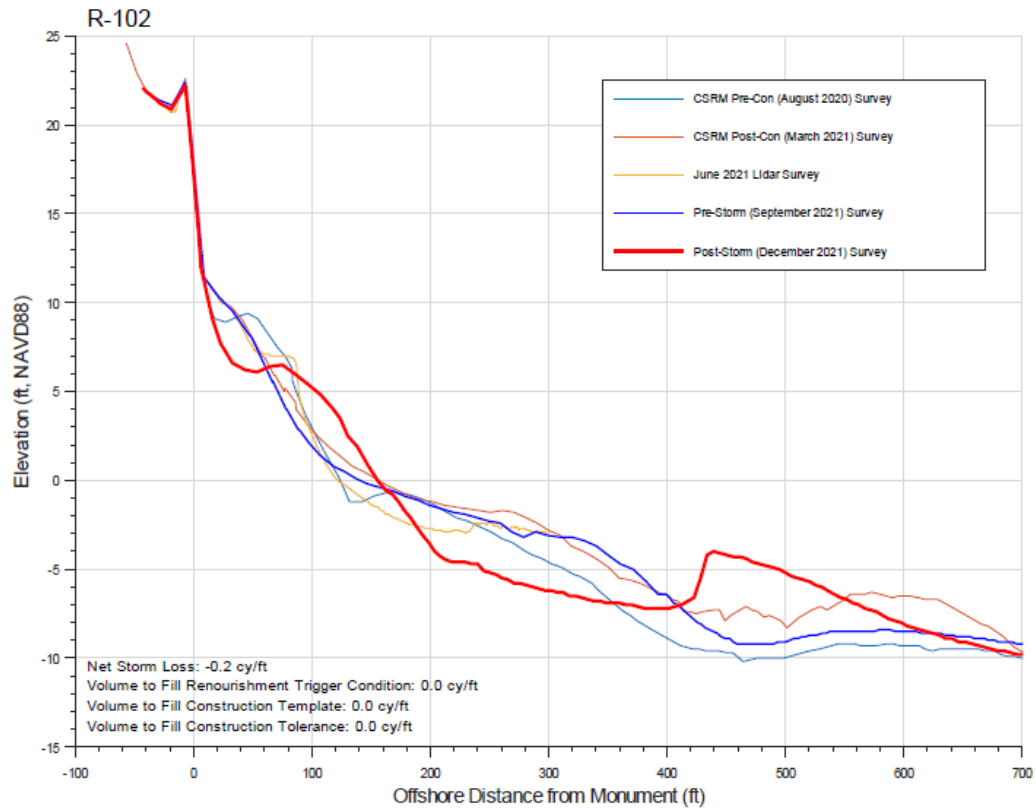
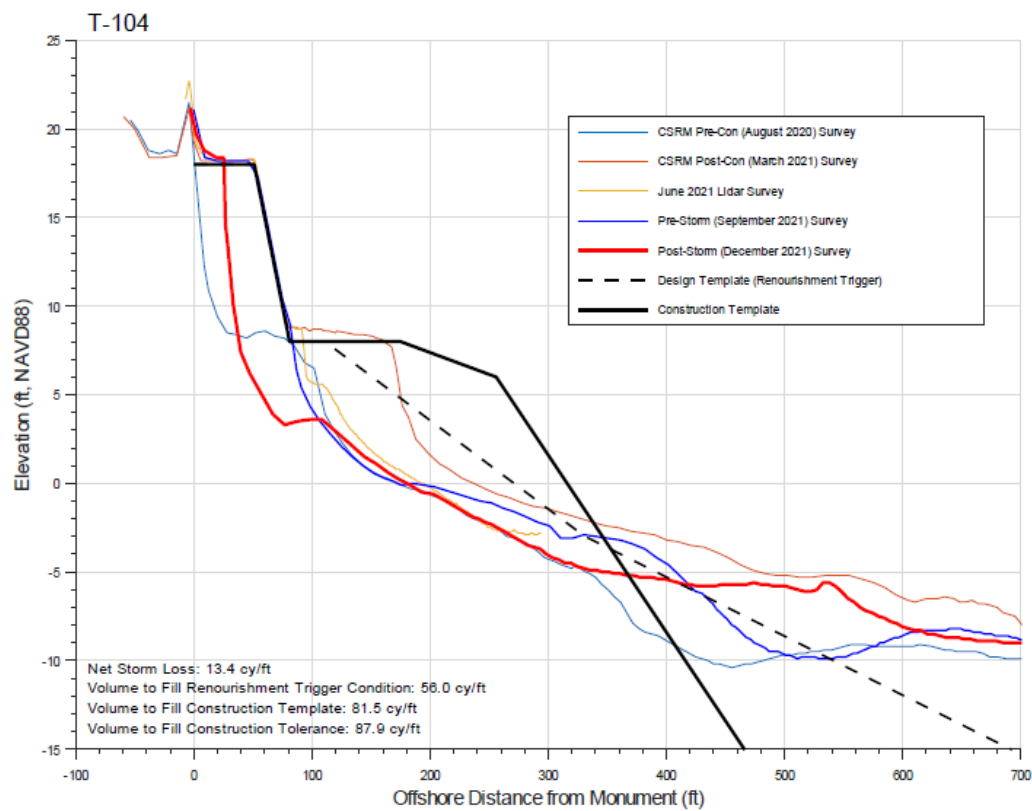
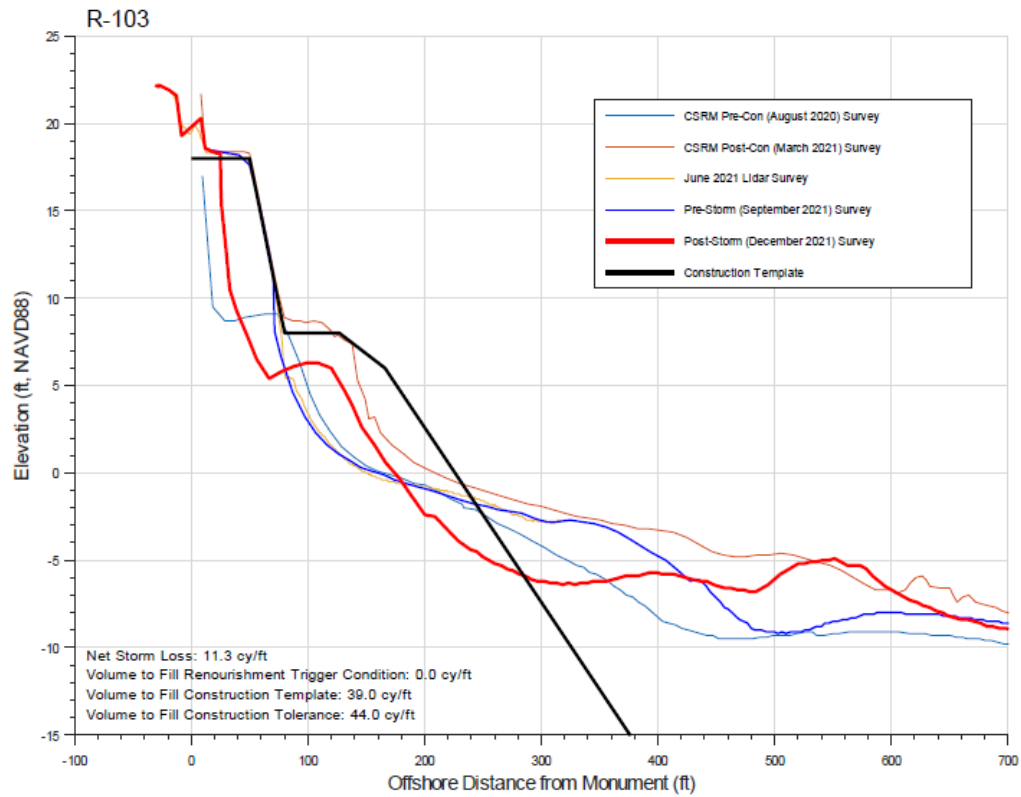


Figure 13: Normalized longshore transport potential from the WIS record normalized to the November 2021 potential as calculated using the CERC equation

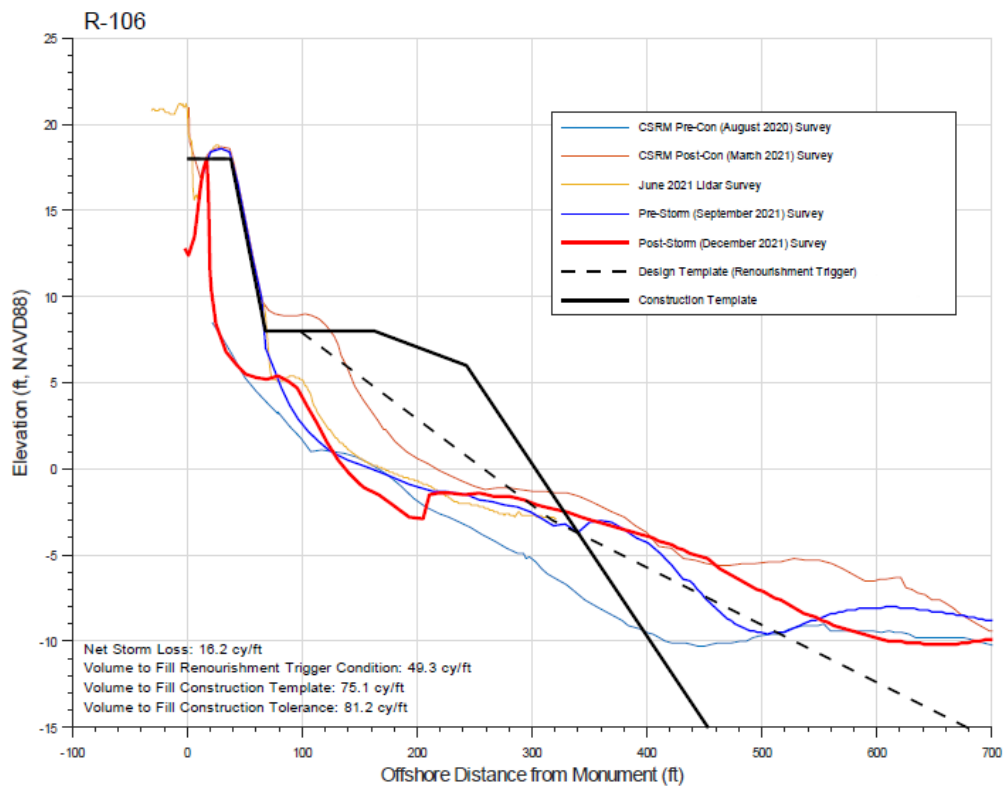
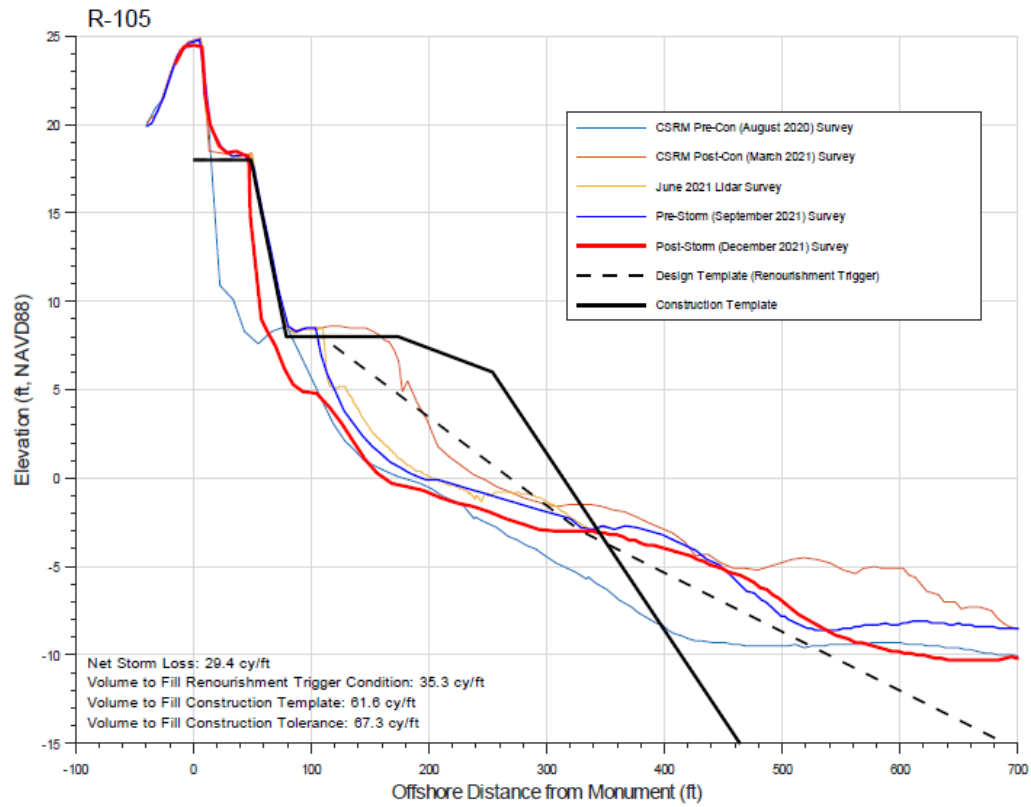
Appendix I. Damage Description
Beach Profiles.



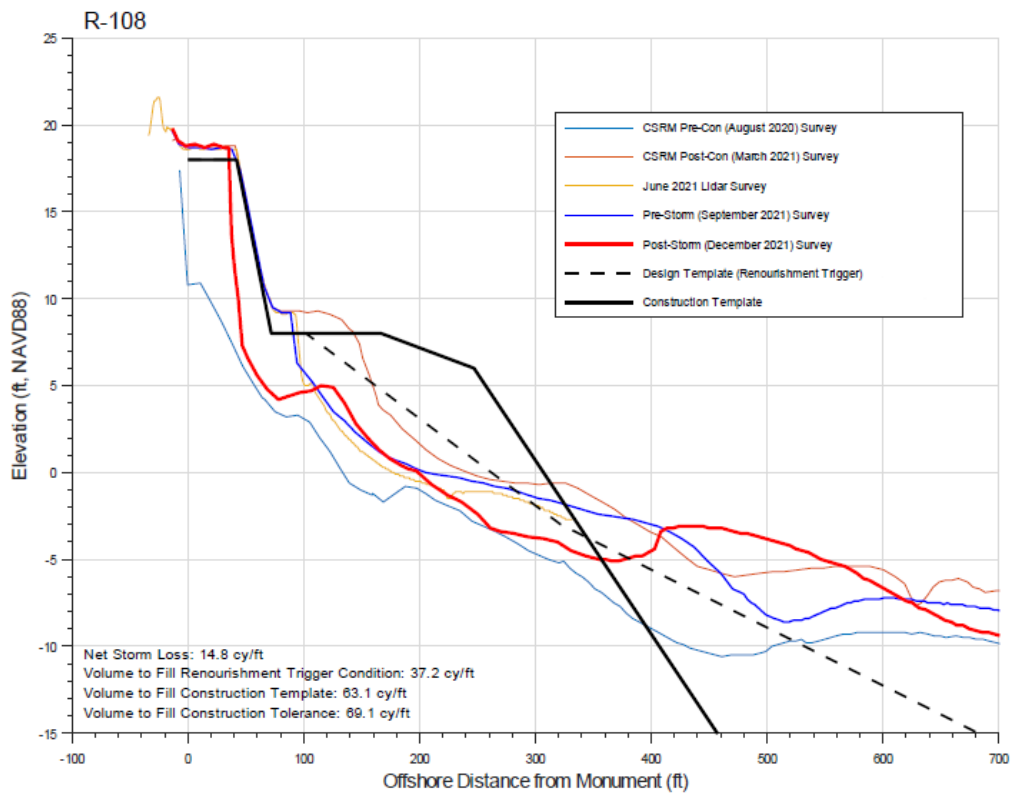
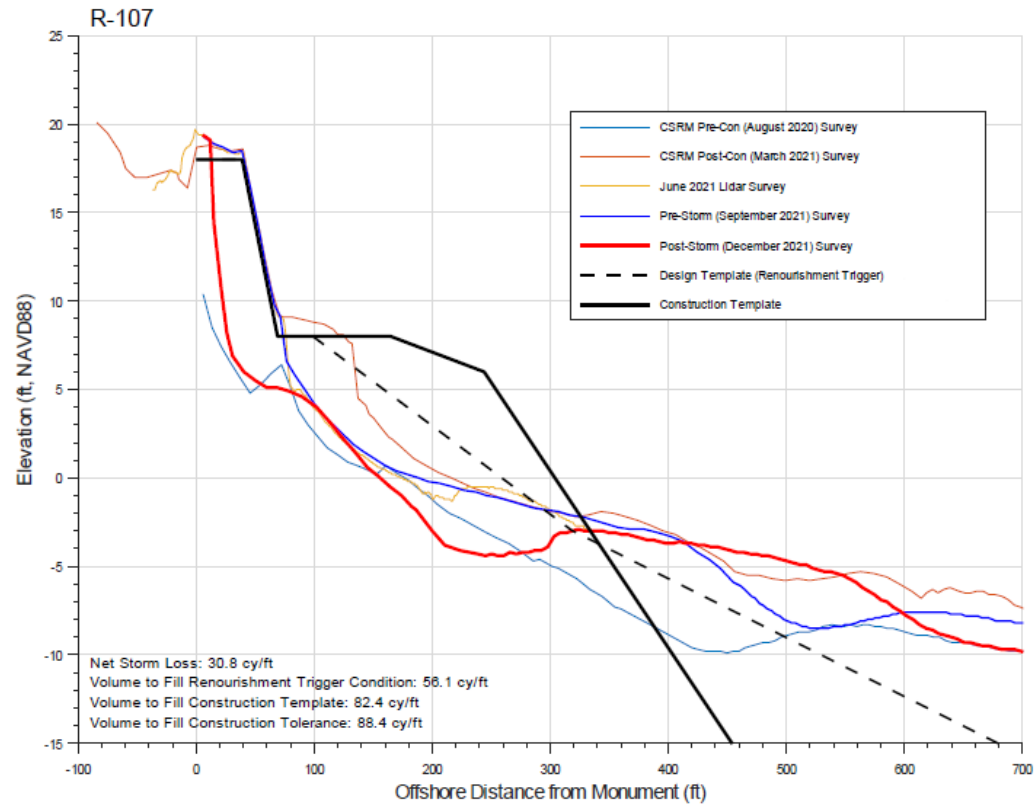
South Ponte Vedra Beach and Vilano Beach Coastal Storm Risk Management Project



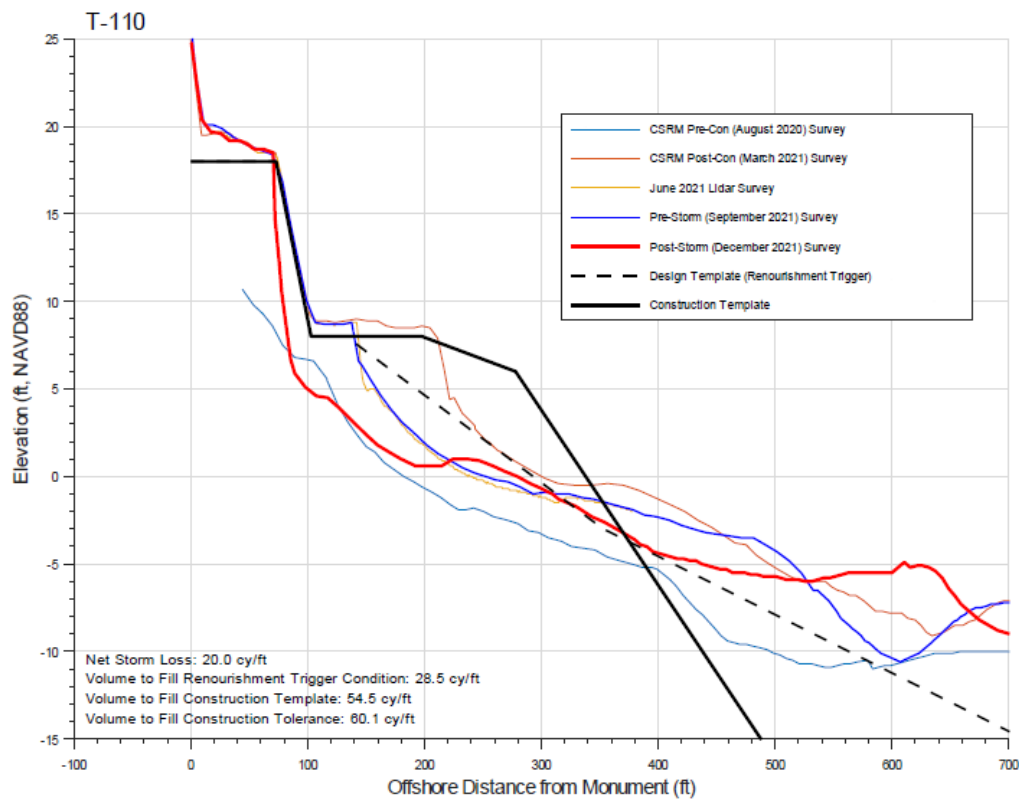
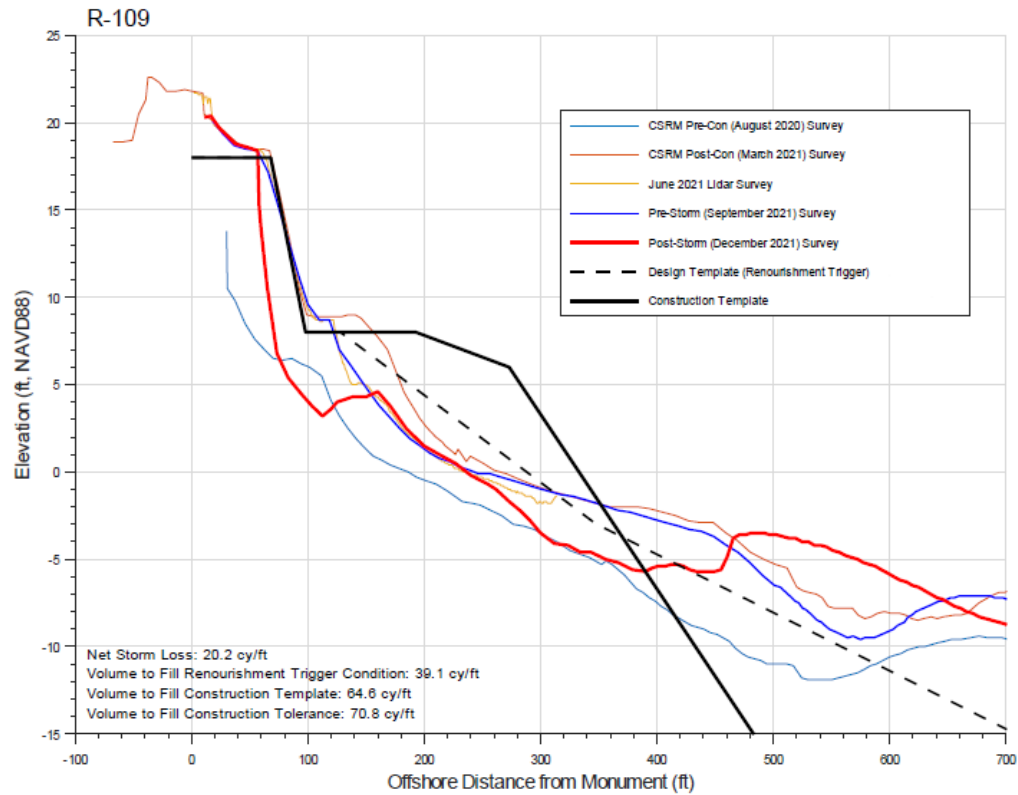
South Ponte Vedra Beach and Vilano Beach Coastal Storm Risk Management Project



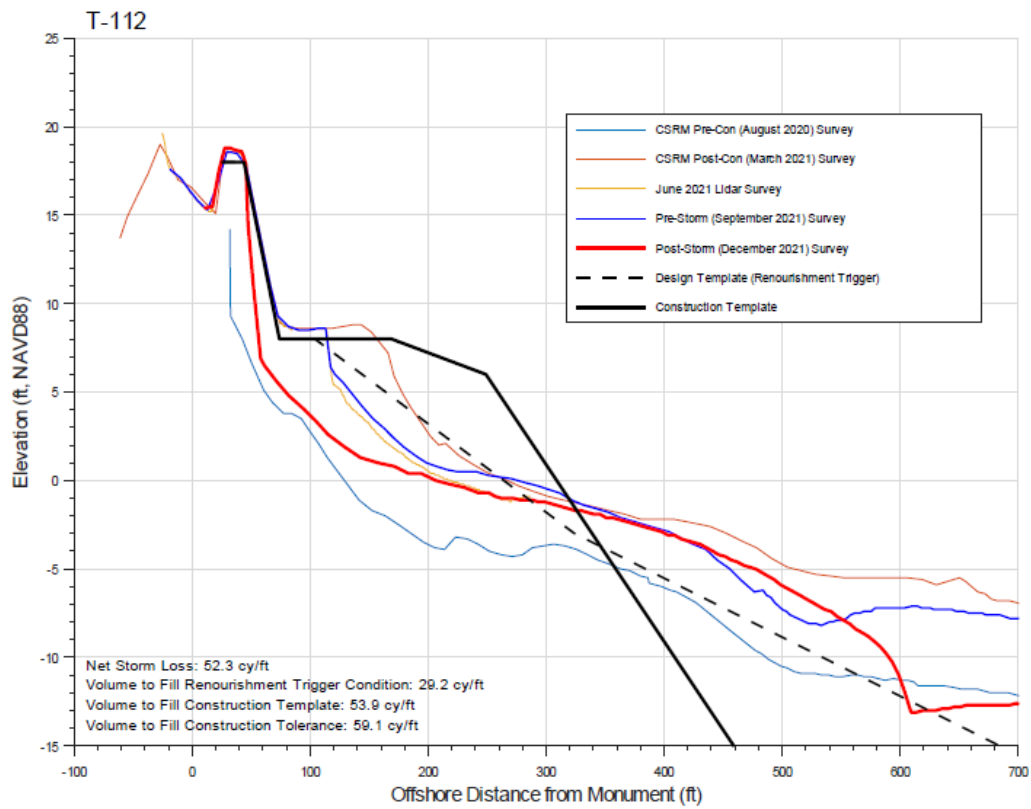
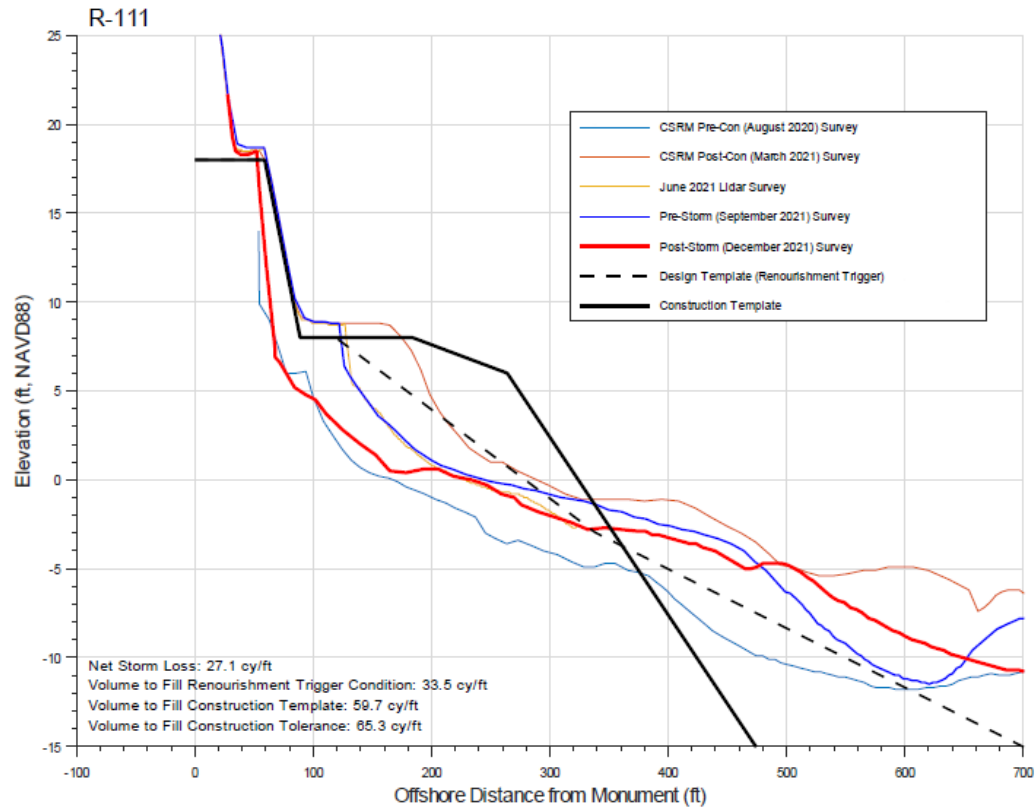
South Ponte Vedra Beach and Vilano Beach Coastal Storm Risk Management Project



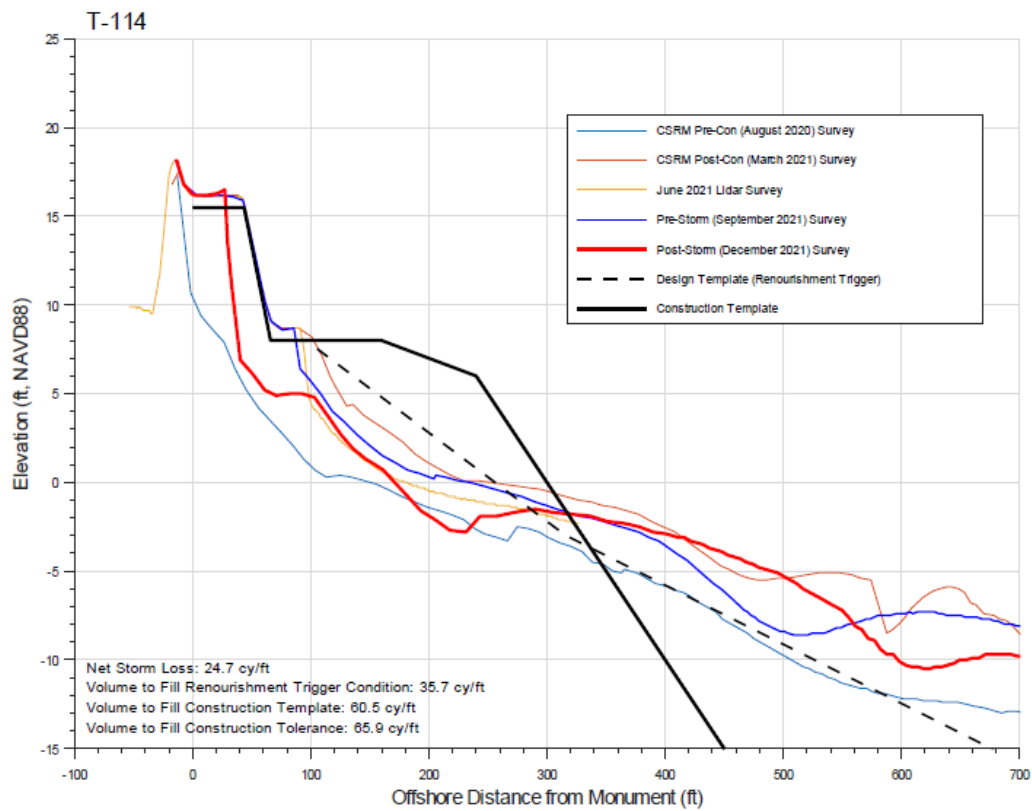
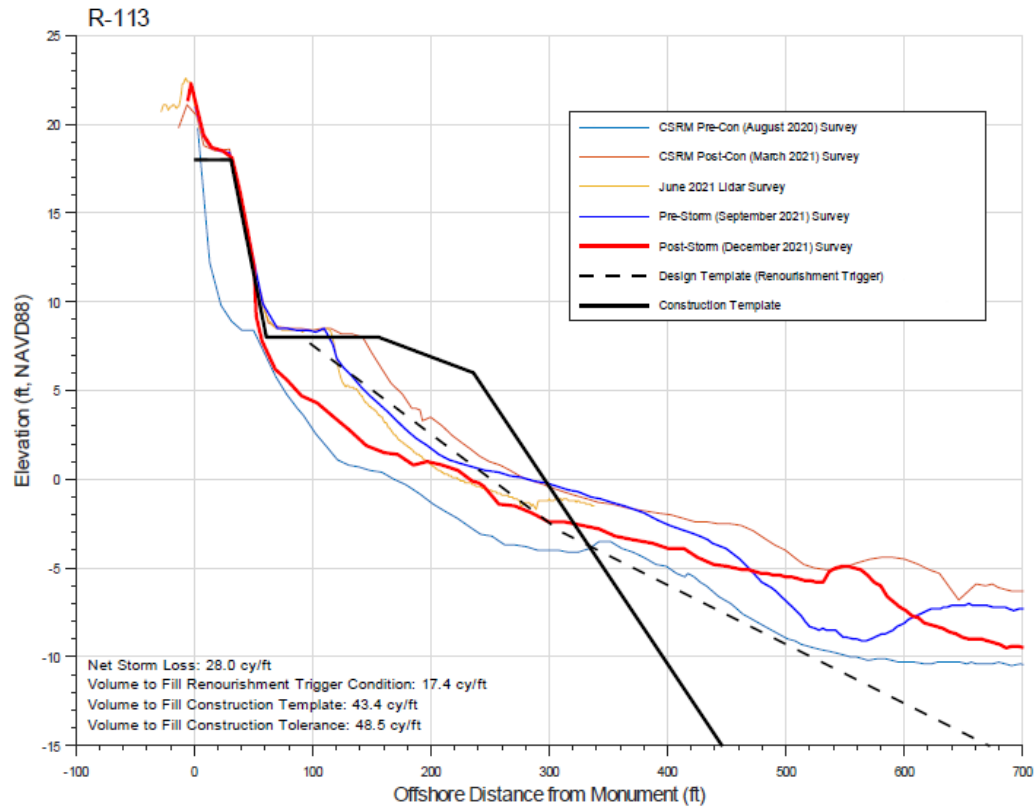
South Ponte Vedra Beach and Vilano Beach Coastal Storm Risk Management Project



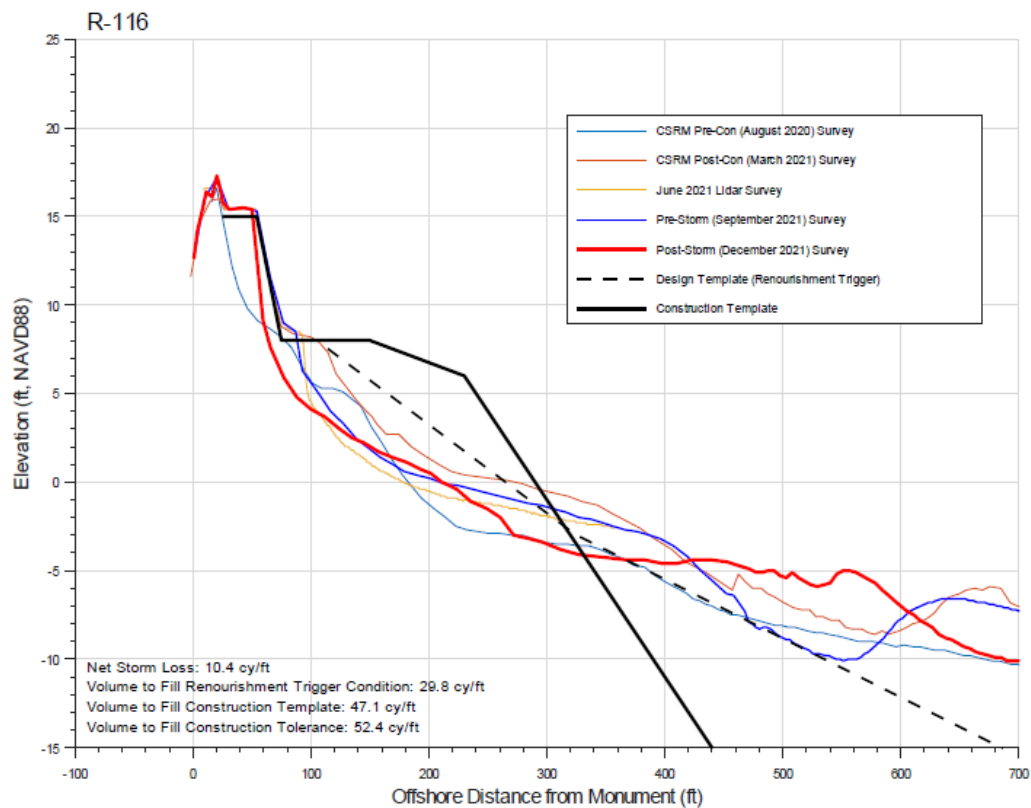
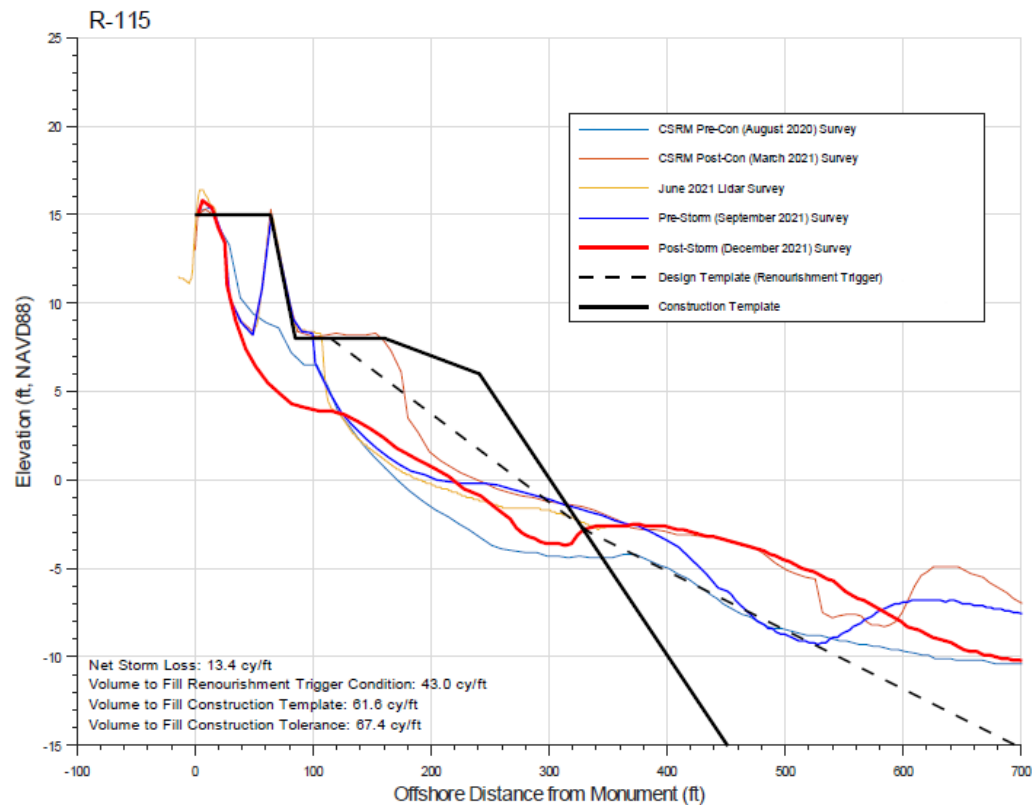
South Ponte Vedra Beach and Vilano Beach Coastal Storm Risk Management Project



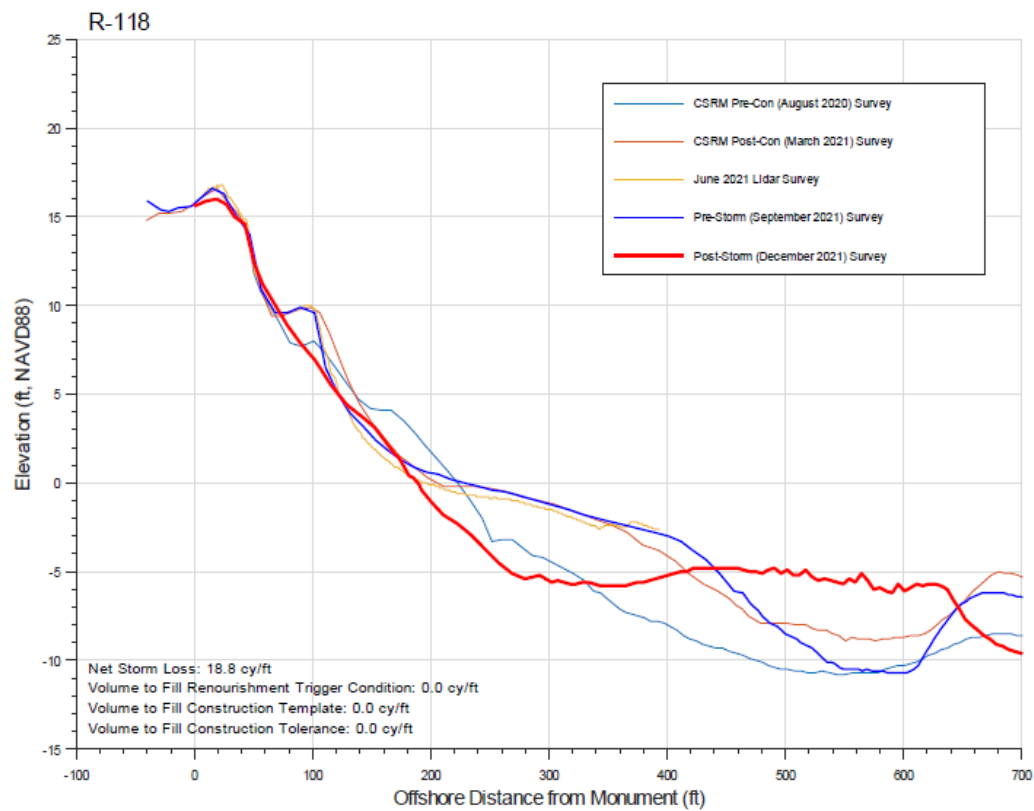
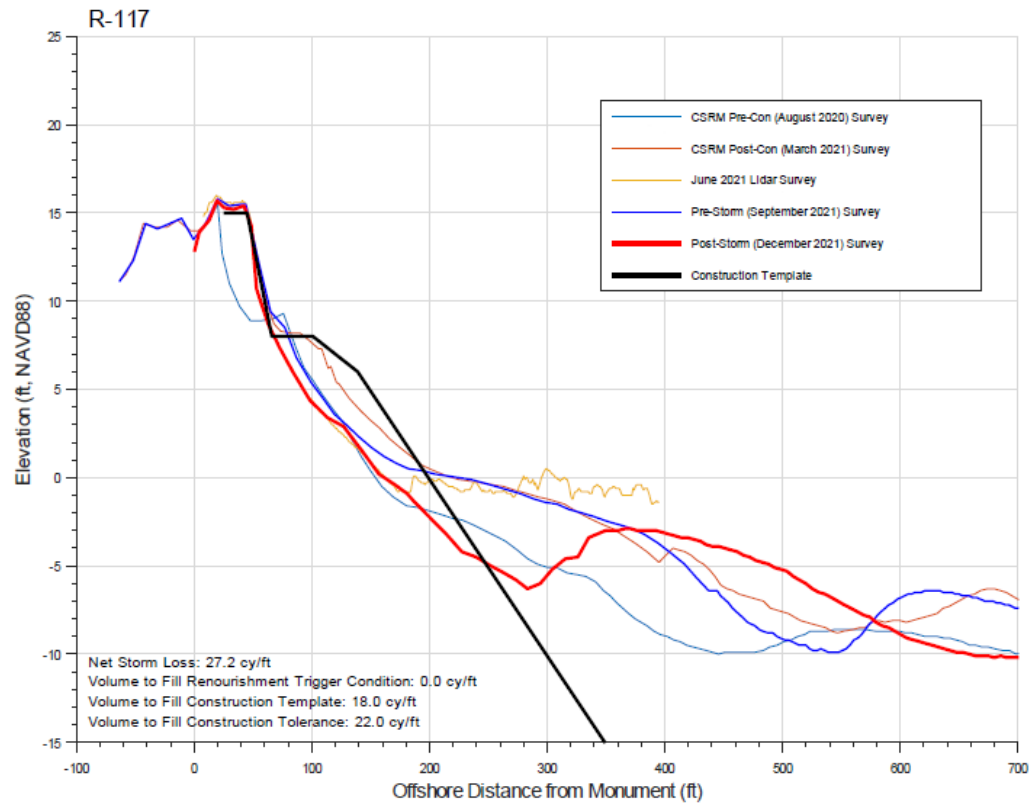
South Ponte Vedra Beach and Vilano Beach Coastal Storm Risk Management Project



South Ponte Vedra Beach and Vilano Beach Coastal Storm Risk Management Project



South Ponte Vedra Beach and Vilano Beach Coastal Storm Risk Management Project



Appendix J. Proposed Work

See Section 13 of the main report.

Appendix K. Cost Estimate Data

K.1 GENERAL INFORMATION

US Army Corps of Engineers' cost estimates for planning purposes are prepared in accordance with the following guidance:

- Engineer Technical Letter (ETL) 1110-2-573, Construction Cost Estimating Guide for Civil Works, 30 September 2008
- Engineer Regulation (ER) 1110-1-1300, Cost Engineering Policy and General Requirements, 26 March 1993
- ER 1110-2-1302, Civil Works Cost Engineering, 30 June 2016
- ER 1110-2-1150, Engineering and Design for Civil Works Projects, 31 August 1999
- Engineer Manual (EM) 1110-2-1304 (Tables Revised 30 September 2021), Civil Works Construction Cost Index System, 31 March 2017
- EP 500-1-1 Emergency Employment of Army and Other Resources, Civil Emergency Management Program – Procedures, 30 September 2001
- Implementation Guidance WRRDA 2014 Section 3029a , 04 April 2016
- Public Law 84-99, Section 5 Flood Control Act of 1941 (PL 84-99)

The cost estimates for the rehabilitation of the shore protection project at the Vilano segment of St. Johns County are based on dredging material from an offshore borrow area and placing that material on areas damaged by the recent storm event. This material will be placed as beach fill and then shaped into a protective berm for protection against storm damage.

These estimates have undergone a Discipline Quality Check and Review in accordance with 02611-SAJ, 02612-SAJ, 02613-SAJ, and 02614-SAJ and have been prepared in accordance with ER 1110-2-1302, ER 500-1-1, and EP 500-1-1. These estimates reference the feasibility study and first renourishment event. A Cost ATR review was performed by the Cost MCX as part of the study process with a certification for the Feasibility Study products received in February 2017.

K.1.1 Rehabilitation Plan

The rehabilitation of a shore protection project within the requirements of PL 84-99 requires the calculation of two separate cost estimates. The first cost estimate for consideration is the cost to restore the project from the post storm condition back to the design template. This estimate includes all labor, equipment, and material to return the protective features to the full design template. The second estimate for consideration is to restore the project from the post storm condition to the Full Construction Template.

The MCACES/MII cost estimates are based on the scopes and are formatted

in the CWWBS. These include pricing at the Fiscal Year 2022 price level (1 October 2021 - 30 September 2022).

The construction costs fall under the following feature code:

- 17 Beach Replenishment

The non-construction costs fall under the following feature codes:

- 31 Construction Management

K.1.2 Construction Cost

Construction costs were developed in MCACES/MII and include all major project components categorized under the appropriate CWWBS to the sub- feature level. The construction costs for dredging operations were developed using the Cost Engineering Dredge Estimating Program (CEDEP) and then transferred into the MCACES/MII estimates. Total Project Costs on each plan contain contingencies that were in accordance with the requirements of EP 500-1-1, which set a maximum contingency for dredging projects at 15%.

K.1.3 Non-Construction Cost

Non-construction costs typically include Lands and Damages (Real Estate), Engineering & Design (E&D) and Construction Management Costs (Supervision & Administration, S&A). These costs were previously provided by the Project Manager and appropriate PDT members as a lump sum cost and have been reviewed for this PIR effort. The lump sum amounts for 30 account E&D and 31 account S&A are estimated at the maximum of 6% of the construction contract costs as specified in ER 500-1-1 Section 5. Lands and Damages cover the real estate administration costs necessary for verifying easements prior to award of the construction contract. This allows the contractor to access the beach and use as an equipment laydown area. Engineering and Design (E&D) costs accounts for preparation of contract plans and specifications (P&S). Construction Management (S&A) costs are for the supervision and administration of the contract required to perform the various aspects of construction required for this project and includes Project Management, Construction Quality Assurance and Contract Administration costs.

K.2 PIR COST ESTIMATES

Cost estimates for the alternative plans were generated based on quantities derived from the post-storm surveys taken after the significant storm event and comparing these surveys to pre-storm conditions, the design template, and the full construction template for the protective beach system. These

quantities were used to derive cost estimates that reflect, as best as possible, the conditions expected in each of the alternatives of this project.

K.2.1. FCCE Cost Estimate

The following table provides a cost estimate for placing 513,000 CY of sand along approximately 2.6 miles of shoreline, from R-103.5 to R-116.5. Borrow material will be taken from a borrow area approximately nine (9) miles offshore. This is the quantity required to return the project to the design template for the protective berm. The cost includes mobilization/demobilization of the dredge plant and associated equipment, dredging of material, placement on the beach, repair and vegetation of dunes, environmental monitoring, beach tilling, vibration monitoring, surveys, etc. Additionally, non-construction costs include construction management costs. The MII estimate for this alternative is summarized in the following table.

Table K.2.1-1: Cost Allocation for Restoring Post-Storm to Design Template

<u>WBS Code</u>	<u>Project Feature</u>	<u>Post Storm to Design Cost Estimate</u>
17	Mobilization and Demobilization	\$3,837,800
17	Beach Replenishment	\$8,041,000
17	Associated General Items	\$1,704,100
01	Lands and Damages	\$30,000
30	Engineering and Design	\$815,000
31	Construction Management	\$815,000
Total Cost		<u>\$15,242,900</u>

1. All cost estimates are at FY22 Price Levels.
2. Code 17 costs above contain contingencies per EP 500-1-1: "FCCE-funded portions of dredge mobilization/demobilization costs and sand renourishment (dredging) costs are limited to" 15%.
3. Code 01 cost for lands was a flat rate
4. Code 30 cost above are EDC costs included in accordance with EP 500-1-1. Currently using rate based on last certified cost, which is being calculated as 6.0% of construction costs (including contingencies).
5. Code 31 costs above are S&A costs included in accordance with EP 500-1-1. Currently using rate based on last certified cost, which is being calculated as 6.0% of construction costs (including contingencies).

K.2.2. Full Construction Template Cost Estimate

The following table provides a cost estimate for placing 995,000 CY sand along approximately 2.6 miles of shoreline, from R-103.5 to R-116.5. Borrow material will be taken from a borrow area approximately nine (9) miles offshore. This is the quantity required to return the project to the full construction template for the protective berm. The cost includes mobilization/demobilization of the dredge plant and associated equipment, dredging of material, placement on the beach, repair and vegetation of dunes, environmental monitoring, beach tilling, vibration monitoring, surveys, etc. Additionally, non-construction costs include construction management costs. The MII estimate for this alternative is summarized in the following table.

<u>WBS Code</u>	<u>Project Feature</u>	<u>Restore to Full Construction Template</u>
17	Mobilization and Demobilization	\$3,837,800
17	Beach Replenishment	\$16,053,900
17	Associated General Items	\$1,838,500
01	Lands and Damages	\$30,000
30	Engineering and Design	\$1,303,900
31	Construction Management	\$1,303,900
Total Cost		<u>\$24,368,000</u>

1. All cost estimates are at FY22 Price Levels.
2. Code 17 costs above contain contingencies per EP 500-1-1: "FCCE-funded portions of dredge mobilization/demobilization costs and sand renourishment (dredging) costs are limited to" 15%.
3. Code 01 cost for lands was a flat rate
4. Code 30 cost above are EDC costs included in accordance with EP 500-1-1. Currently using rate based on last certified cost, which is being calculated as 6.0% of construction costs (including contingencies).
5. Code 31 costs above are S&A costs included in accordance with EP 500-1-1. Currently using rate based on last certified cost, which is being calculated as 6.0% of construction costs (including contingencies).

Appendix L. BCR Data

Summary of benefits from the last approved report (2017 FR/EA)

CWCCIS Price Level	1Q17
Average Annual Storm Damage Reduction Benefits	\$ 1,961,000
Average Annual Recreation Benefits	\$ 692,000
Other Benefits	
Average Annual Total Project Benefits	\$2,653,000

Remaining period of Federal participation

Initial Construction	2021
Yrs of Federal Participation:	50
Last Year of Fed Participation:	2070
FCCE+Full Construction Completion Year	2022
Remaining Yrs of Fed Participation :	49

South Ponte Vedra Beach and Vilano Beach Coastal Storm Risk Management Project

Present Value Worksheet

Current Discount Rate:	FY22				
Rate:	2.250%	Adjust Present Worth to:	2022		
Remaining Years:	49	Adjust Price Level to:	1Q17		
CRF:	0.03389179				
Price Level	1Q22				
Price Level FY for Costs	FY	Costs	Current Rate (2.75%) Present Worth Adj. Factor	Price Level Adj. Factor	Price Level & Present Worth Adj.
1Q22	2022	\$ 24,368,000	1.0000	0.8742	\$ 21,302,000
1Q22	2023	\$ -	0.9780	0.8742	\$ -
1Q22	2024	\$ -	0.9565	0.8742	\$ -
1Q22	2025	\$ -	0.9354	0.8742	\$ -
1Q22	2026	\$ -	0.9148	0.8742	\$ -
1Q22	2027	\$ -	0.8947	0.8742	\$ -
1Q22	2028	\$ -	0.8750	0.8742	\$ -
1Q22	2029	\$ -	0.8558	0.8742	\$ -
1Q22	2030	\$ -	0.8369	0.8742	\$ -
1Q22	2031	\$ -	0.8185	0.8742	\$ -
1Q22	2032	\$ -	0.8005	0.8742	\$ -
1Q22	2033	\$ -	0.7829	0.8742	\$ -
1Q22	2034	\$ 26,510,000	0.7657	0.8742	\$ 17,744,000
1Q22	2035	\$ -	0.7488	0.8742	\$ -
1Q22	2036	\$ -	0.7323	0.8742	\$ -
1Q22	2037	\$ -	0.7162	0.8742	\$ -
1Q22	2038	\$ -	0.7005	0.8742	\$ -
1Q22	2039	\$ -	0.6851	0.8742	\$ -
1Q22	2040	\$ -	0.6700	0.8742	\$ -
1Q22	2041	\$ -	0.6552	0.8742	\$ -
1Q22	2042	\$ -	0.6408	0.8742	\$ -
1Q22	2043	\$ -	0.6267	0.8742	\$ -
1Q22	2044	\$ -	0.6129	0.8742	\$ -
1Q22	2045	\$ -	0.5994	0.8742	\$ -
1Q22	2046	\$ 30,100,000	0.5862	0.8742	\$ 15,426,000
1Q22	2047	\$ -	0.5733	0.8742	\$ -
1Q22	2048	\$ -	0.5607	0.8742	\$ -
1Q22	2049	\$ -	0.5484	0.8742	\$ -
1Q22	2050	\$ -	0.5363	0.8742	\$ -
1Q22	2051	\$ -	0.5245	0.8742	\$ -
				TOTAL PV	\$ 39,046,000

Remaining Benefits without Recreation

PIR Full Construction Template Justification Summary Without Recreation Benefits	
	Current Rate FY22
Rate:	2.250%
Total Cost Present Value:	\$ 39,046,000
CRF (i=.0275 n=25)	0.0339
AAEQ Cost	\$1,323,000
AAEQ Benefits	\$1,961,000
AAEQ Net-Benefits	\$638,000
Total BCR	1.48

Remaining Benefits with Recreation

PIR Full Construction Template Justification Summary With Recreation Benefits	
	Current Rate FY22
Rate:	2.250%
Total Cost Present Value:	\$ 39,046,000
CRF (i=.0275 n=25)	0.0339
AAEQ Cost	\$1,323,000
AAEQ Benefits	\$2,653,000
AAEQ Net-Benefits	\$1,330,000
Total BCR	2.01

Appendix M. Environmental Considerations

Tab M-1. NEPA analysis of the environmental effects of the action or documentation of the applicability of a categorical exclusion or emergency procedures.

See Section 16 in the main report.

Tab M-2. Compliance with the Endangered Species Act, including compliance through alternative procedures in the case of emergency circumstances consistent with 50 CFR 402.05.

See Section 16 in the main report.

Tab M-3. Clean Water Act 404(b)(1) analysis (if applicable), including an explanation of any emergency procedures utilized.

See Section 16 in the main report.

Tab M-4. A statement on the applicability of EO 11988.

To comply with EO 11988, the policy of USACE is to formulate projects that, to the extent possible, avoid or minimize adverse effects associated with the use of the floodplain and avoid inducing development in the floodplain unless there is no practicable alternative. The project is located within the Coastal High Hazard Area (CHHA), as defined by EO 11988 as an “area subject to inundation by one percent-annual chance of flood, extending from offshore to the inland limit of a primary frontal dune along an open coast and any other area subject to high velocity wave action from storms.” The project shoreline is significantly developed, and further development is anticipated to be minimal.

Tab M-5. Cultural Resources

- St Augustine Inlet Complex Borrow Sites
 - o See section 16, paragraph f.
- Offshore Borrow Sites
 - o Consultation with the Florida State Historic Preservation Officer (SHPO), appropriate federally recognized tribes, and other interested parties was initiated on July 29, 2021 and is ongoing. The Corps will employ Stipulation V of its 2021 *Programmatic Agreement among the United States Army Corps of Engineers, the Florida State Historic Preservation Officer, the Bureau of Ocean Energy Management, and the Advisory Council on Historic Preservation Regarding Compliance with Section 106 of the National Historic Preservation Act during Implementation of the United States Army Corps of Engineers, Jacksonville District Operation, Navigation, and Shore Protection Programs* in order to meet its Section 106 compliance requirements.
- Beach Placement

- Consultation with the Florida State Historic Preservation Officer (SHPO), appropriate federally recognized tribes, and other interested parties was initiated on July 29, 2021 and is ongoing. The Corps will employ Stipulation V of its 2021 *Programmatic Agreement among the United States Army Corps of Engineers, the Florida State Historic Preservation Officer, the Bureau of Ocean Energy Management, and the Advisory Council on Historic Preservation Regarding Compliance with Section 106 of the National Historic Preservation Act during Implementation of the United States Army Corps of Engineers, Jacksonville District Operation, Navigation, and Shore Protection Programs* in order to meet its Section 106 compliance requirements.

Tab M-6. National Historic Preservation Act (NHPA)

- St Augustine Inlet Complex Borrow Sites
 - See section 16, paragraph f.
- Offshore Borrow Sites
 - Consultation with the Florida State Historic Preservation Officer (SHPO), appropriate federally recognized tribes, and other interested parties was initiated on July 29, 2021 and is ongoing. The Corps will employ Stipulation V of its 2021 *Programmatic Agreement among the United States Army Corps of Engineers, the Florida State Historic Preservation Officer, the Bureau of Ocean Energy Management, and the Advisory Council on Historic Preservation Regarding Compliance with Section 106 of the National Historic Preservation Act during Implementation of the United States Army Corps of Engineers, Jacksonville District Operation, Navigation, and Shore Protection Programs* in order to meet its Section 106 compliance requirements.
- Beach Placement
 - Consultation with the Florida State Historic Preservation Officer (SHPO), appropriate federally recognized tribes, and other interested parties was initiated on July 29, 2021 and is ongoing. The Corps will employ Stipulation V of its 2021 *Programmatic Agreement among the United States Army Corps of Engineers, the Florida State Historic Preservation Officer, the Bureau of Ocean Energy Management, and the Advisory Council on Historic Preservation Regarding Compliance with Section 106 of the National Historic Preservation Act during Implementation of the United States Army Corps of Engineers, Jacksonville District Operation, Navigation, and Shore Protection Programs* in order to meet its Section 106 compliance requirements.

Appendix N – Y
Not applicable.

Appendix Z. PIR Review Checklist

	YES	NO	N/A
1.	X		
			The project is a Federally authorized and constructed coastal storm risk management project (CSRM). [ER, 5-20.a.]
2.	X		
			The Project is Active in the RIP [ER, 5-2.a.]. Last inspection date: November 16, 2021
3.	X		
			The Public Sponsor has requested CSRM Rehabilitation Assistance in writing. [EP, 5-18.b.]
4.	X		
			The FCCE-funded CSRM Rehabilitation Assistance is necessary to restore the project to its design level of protection.
5.	X		
			There is sufficient evidence in the PIR to support a finding that the CSRM was damaged by an extraordinary storm. [ER, 5-20.e.]
6.	X		
			There are "significant amounts of damage" to the CSRM. [ER, 5-20.e.(2)] The criterion used to make this determination is: <u>Yes.</u> the cost of the construction effort to effect repair of the CSRM (<i>exclusive of dredge mob/demob costs</i>) (a) exceeds \$1 million and (b) is greater than 2 percent of the original project construction costs (expressed in current day dollars.); or, <u>Yes.</u> the cost of the construction effort to effect repair of the CSRM (<i>exclusive of dredge mob/demob costs</i>) exceeds \$6 million; or, <u>Yes.</u> more than one-third of the planned or historically placed sand for renourishment was lost. <u>NA.</u> only hard features are involved.
7.	X		
			The public sponsor has agreed to sign the Cooperation Agreement which will occur before USACE begins rehabilitation work. [EP, 5-18.1]
8.	X		
			The rehabilitation Project has a favorable benefit cost ratio of greater than 1.0:1 [ER, 5-20.a.].
9.	X		
			The public sponsor has access to sufficient funds to meet its required cost contributions. [EP, 5-18.h.]
10.	X		
			The cost estimate in the PIR itemizes the work and identifies the Public Sponsor's cost responsibility for items such as deferred and deficient maintenance. [ER, 5-2.g.]
11.	X		
			The cost estimate in the PIR allocates costs between what may be paid for under PL84-99 Rehabilitation Assistance, and what is cost shared between the Corps (using CG funds) and the public sponsor under periodic renourishment terms of the PCA. [EP, 5-18.d.].
12.	X		
			Dredge mobilization/demobilization costs are borne proportionally among contributing sources of funds for sand renourishment. [ER, 5-20.i.]

South Ponte Vedra Beach and Vilano Beach Coastal Storm Risk Management Project

13.		X	Contingency funds for the FCCE-funded portion of the Project are limited to 15 percent for dredging-related costs, and 10 percent for all other costs. [ER, 5-2.v.]
14.		X	The repair option selected is the option that is the least cost to the Federal government. [ER, 5-2.h.]
15.	X		The benefit cost ratio calculation excludes all recreation benefits. [ER, 5-20.a.]
16.		X	Betterments are paid by the Public Sponsor. [ER, 5-20.o.]
17.		X	Cost for betterments are identified separately in the cost estimate. [ER, 5-2.o.]
18.		X	Based on the Projected schedule, Project history, anticipated degree of contention of undertaking the Project, and similar items, the Rehabilitation Assistance will be finished prior to the onset of the next storm season, or within one year of the date of occurrence of the damage, whichever is less. [ER, 5-20.j.]
19.	X		The proposed work will not modify the CSRM to increase the degree of protection or capacity, or provide protection to a larger area. [ER, 5-2.n.]
20.	X		An assessment of environmental requirements was completed. [ER, 5-13.e.]
21.	X		The Endangered Species Act was appropriately considered and applicable requirements have been satisfied or will be satisfied prior to the funds transmittal of construction phase activities (and supplemented to the PIR). When emergency circumstances mandate, ESA Section 7 consultation may be conducted informally through alternative procedures with formal consultation completed after construction consistent with 50 CFR 402.05. Dredging will not be adversely affected. [ER, 5-13.g., and EP, Figure 5-3., paragraph 12.]
22.	X		The Archeological and Historical Preservation Act was appropriately considered. [ER, 5-13.h.]
23.	X		EO 11988 requirements were considered in the process of evaluating the proposed project for rehabilitation or will be considered prior to the funds transmittal of construction phase activities (and supplemented to the PIR). [ER,5-13.f., and EP, Figure 5-2, paragraph 12.]
24.	X		Other permitting and evaluations were appropriately considered and result in no impediment to the Rehabilitation Assistance effort. [ER, 5-13.a.]
25.	X		The cover letter forwarding the PIR to the MSC will contain the Projected schedule for completing the Rehabilitation Assistance. [EP, 5-18.f.(2)]
26.	X		The completed PIR has been reviewed and the PIR checklist has been reviewed and signed by the Emergency Management Office. [EP, 5-18.f.(1)]

27.	X	The completed PIR meets all policy, procedural, content, and formatting requirements of ER 500-1-1 and EP 500-1-1. [ER, 2-3.b.]
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