

RESOLUTION NO. 2018- 308

A RESOLUTION BY THE BOARD OF COUNTY COMMISSIONERS OF ST. JOHNS COUNTY, FLORIDA, APPROVING THE TERMS AND AUTHORIZING THE COUNTY ADMINISTRATOR, OR DESIGNEE, TO SUBMIT A LONG RANGE BEACH EROSION CONTROL BUDGET PLAN WITH THE DEPARTMENT OF ENVIRONMENTAL PROTECTION, BUREAU OF BEACHES AND COASTAL SYSTEMS.

WHEREAS, St. Johns County is currently working with the U.S. Army Corps of Engineers (USACE) and the Florida Department of Environmental Protection (FDEP) on a multi-year federal feasibility study in Porpoise Point; and,

WHEREAS, the USACE is expected to appropriate funds for this project in the next fiscal year; and,

WHEREAS, St. Johns County anticipates a draft Project Partnership Agreement from the USACE; and,

WHEREAS, St. Johns County also anticipates sharing matching costs with the State of Florida under a FDEP Beaches and Coastal Systems grant; and,

WHEREAS, the FDEP has begun a new grant cycle which will require submitting an annual application along with a ten-year budget plan; and,

WHEREAS, St. Johns County anticipates providing local cost share funding from the Category III Tourist Development Tax Budget; and,

WHEREAS, St. Johns County will serve as the local sponsor; and,

WHEREAS, the Florida Department of Environmental Protection Bureau of Beaches and Coastal Systems requires an annual contract for its local share, contingent upon annual appropriations by the legislature.

NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF COUNTY COMMISSIONERS OF ST. JOHNS COUNTY, FLORIDA, AS FOLLOWS:

Section 1. The above Recitals are incorporated by reference into the body of this Resolution and such Recitals are adopted as findings of fact.

Section 2. A suggested 10-year budget plan for funding the State's portion of a Federal Restoration Plan for St Johns County Beaches project shall be filed with the Florida Department of Environmental Protection, Bureau of Beaches and Coastal Systems (the "Department").

Section 3. The County Administrator, or designee, is hereby authorized to submit a proposed 10-year State budget plan to the Department and to execute any necessary agreements concerning the beach projects with the Department, upon a finding of legal sufficiency by the Office of the County Attorney; and,

Section 4. The County Administrator's, or designee's, submission of any budget plan is subject to, and contingent upon, an annual budget appropriation by the Board of County Commissioners.

Section 5. To the extent that there are typographical and/or administrative errors and/or omissions that do not change the tone, tenor, or content of this Resolution, then this Resolution may be revised without subsequent approval of the Board of County Commissioners.

PASSED AND ADOPTED by the Board of County Commissioners of St. Johns County, State of Florida, this 18 day of September 2018

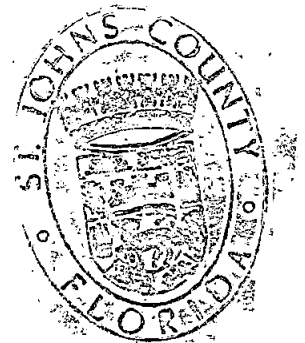
**BOARD OF COUNTY COMMISSIONERS
OF ST. JOHNS COUNTY, FLORIDA**

By: Paul M. Waldron
Paul M. Waldron, Vice Chairman

ATTEST: Hunter S. Conrad, Clerk

By: Ram Salterman
Deputy Clerk

RENDITION DATE 9/20/18





FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
FY2019/20 Local Government Funding Request
Inlet Projects Application

PART I: GENERAL INFORMATION

Local Sponsor: St. Johns County

Local Sponsor Federal ID Number (FEID): 596000825

Contact Name: Damon Douglas

Title: Project Manager, Public Works

Mailing Address Line 1: 2750 Industry Center Road

Mailing Address Line 2:

City: St. Augustine

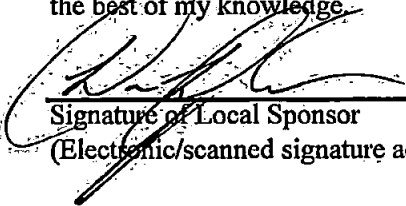
Zip: 32084

Telephone: (904) 209-0255

Email Address: ddouglas@sjcfl.us

PART II: CERTIFICATION

I hereby certify that all information provided with this application is true and complete to the best of my knowledge.


Signature of Local Sponsor
(Electronic/scanned signature accepted)

7/30/18
Date

Damon Douglas
Printed Name

PART III: EVALUATION CRITERIA

1. Project Name: (as listed in the Inlet Management Plan (IMP) or Strategic Beach Management Plan (SBMP)). Porpoise Point Feasibility Study

2. Project Description: (Include county, location with reference to range monuments, brief project history and description of proposed activities) (Attach additional documentation as needed)
The northeastern end of Porpoise Point along the northern shoreline of St. Augustine Inlet has experienced severe sand loss from back-to-back storms (i.e., hurricanes Matthew and Irma). Erosion along the south side of the north inlet jetty and complete erosion of the sand dunes at the end of Porpoise Point Drive threatens upland properties and infrastructure and exacerbates drainage issues. The USACE, authorized to maintain the St. Augustine Inlet north jetty, plans to conduct a feasibility study under the Continuing Authorities Program (CAP) to determine a long-term solution for stabilizing Porpoise Point and, hence, protecting the north jetty. The estimated feasibility study cost is \$650,000 with a 50/50 federal/non-federal cost share. USACE South Atlantic Division has approved the Section 103 Study Initiation Request (see attached letter).

3. Use of Requested Program Funds: (Specify phase – Feasibility, Design, Construction, and/or Monitoring – and provide a brief description of work in each phase listed. Indicate which tasks are cost reimbursement for work that has already been completed.) Funds requested for FY2019/20 will help match the non-federal cost share of a feasibility to be conducted by USACE Jacksonville District.

4. Mapping:
 Prepare and attach a map or maps of the project area formatted at a minimum of 1" = 200' scale. (Maps must be provided as attachments to this application).

Map elements must include:

- Compass rose with North arrow, scale and legend.
- Project boundary showing the location of the inlet and critically eroded shoreline
- FDEP range monuments
- Area of inlet influence
- Permitted sand bypassing placement area.

Maps are attached to this application.

5. Length of Area of Influence in Feet (as determined by the IMP or SBMP): 68,112 ft (12.9 miles; 7.4 miles to the north and 5.5 miles to the south)

6. Schedule and Budget

a. Cost Reimbursement: (Specify eligible costs incurred three years prior to the current application's fiscal year which have not been reimbursed. Eligible costs will be included in the funding request of the current application.)

Year	Proposed Phase	Description	Total Estimated Cost	Federal Cost Share	State Cost Share	Local Cost Share
2016/2017		n/a				

2017/ 2018	n/a				
2018/ 2019	n/a				

(Attach additional documentation as needed)

b. Current and Future Costs:

(Specify eligible costs for the current application's fiscal year which have not been reimbursed.)

Include the proposed phases for the next 10 years and the estimated costs for the next 5 years.)

Year	Proposed Phase	Description	Total Estimated Cost	Federal Cost Share	State Cost Share	Local Cost Share
2019/ 2020	Feasibility		\$650,000	\$325,000	\$243,750	\$81,250
2020/ 2021		Future phases to be determined by feasibility study				
2021/ 2022						
2022/ 2023						
2023/ 2024						
2024/ 2025						
2025/ 2026						
2026/						

2027						
2027/ 2028						
2028/ 2029						

(Attach additional documentation as needed)

7. Balancing the Sediment Budget:

Provide a brief description of when the last sediment budget engineering analysis was completed for the inlet and area of inlet influence. Discuss any proposals to update the sediment budget: The USACE conducted an Inlet Sink Analysis by evaluating the historic shoreline changes and the inlet's sink effect. This analysis first assessed the inlet's littoral impact within the inlet and identified the shoreline lengths of inlet impact. USACE completed the study in 2013, and FDEP adopted the IMP update in 2014.

What is the annual bypassing objective (cubic yards/year) adopted by the IMP or the SBMP or as determined by a department approved study? 278,000 cy, with a placement ratio of approximately one-third of material placement to the north and two-thirds of material placement to the south. Results of the USACE study determined that north of the inlet a maximum erosion rate of -98,800 cubic yards per year occurred between the inlet and R83, whereas south of the inlet a maximum erosion rate of -179,300 cubic yards per year occurred between the inlet and R152. The total inlet sink effect was observed to be about 278,100 cubic yards per year.

Provide the current annual average of bypassed material (cubic yards) since adoption of a bypass objective; >660,000 cy/yr. The 2002, 2005, 2012, and 2018 nourishments of the St. Johns County SPP have bypassed 9.95 Mcy from the inlet and ebb shoal borrow areas to the south beaches; this volume equates to approximately 622,000 cy/yr over the 16-yr period from 2002 – 2018 (the original 1998 bypassing objective equaled 510,000 cy/yr). Additionally, the 2005 and 2012 ICWW maintenance dredging events bypassed 205,345 cy and 122,648 cy to the south, the 2015 inlet maintenance dredging event placed 150,000 cy in the nearshore north of the inlet, and the 2017 ICWW maintenance dredging event placed 137,281 cy on the north beach; these volumes add 38,500 cy/yr to the bypassing volume over the 16-yr period. Considering just the 4-yr period from 2014–2018 period since adoption of the IMP update, the above projects have bypassed approximately 187,000 cy/yr to the south and 72,000 cy/yr to the north.

In the table below, list the annual bypassing volumes (cubic yards/year) for the inlet for the past 10 years (starting from the last calendar year or the most recent calculation).

Year	Quantity Bypassed (cubic yards)		Dredge Location	Placement or Disposal Area
	Sand transfer plant (if applicable)	Dredging Bypass		
2009				
2010				
2011				
2012		2,100,000	Inlet/ebb shoal	St. Aug. SPP
		122,600	ICWW	Anastasia State Park
2013				
2014				
2015		150,000	Inlet	Vilano nearshore (R-113 to R-117)
2016				
2017		137,300	ICWW	North beach
2018		747,200	Inlet/ebb shoal	St. Aug. SPP
Totals per method		3,257,100		
Total Bypass volume		3,257,100		
Years since IMP adoption		20		
Annual average bypass ('09-'18)		325,710 cy/yr		
Bypass objective		510,000 cy/yr (before 2014); 278,000 cy/yr (current)		
Percentage of bypass objective		100%.		

(Attach additional documentation as needed)

8. Sand Reaching the Inlet:

Provide the current estimated annual quantity of beach quality sand reaching the updrift boundary of the improved jetty or inlet channel: 248,800 cy. The centroid of the family of solutions for the 1999 – 2010 sediment budget developed by the USACE is 248,800 cy.

9. Cost Effective Alternatives:

Provide the estimated bypassing shortfall of sand (cubic yards/year) within in the inlet system: 0 cy

Provide the increase in annual bypassing of sand (cubic yards/year) proposed for this project: 0 cy

10. Local Sponsor Financial and Administrative Commitment:

Is funding for the project in the Local Sponsor's 10-year comprehensive financial plan (Y/N)? Y Attach a copy or provide web link to the plan.

<http://www.sjcfcl.us/OMB/media/FY2018/FY2018FinancialPlan.pdf>

Is funding provided through a source established by referendum (Y/N)? N

Attach a copy or provide web link to the referendum.

Is funding provided by a third-party other than the federal government (Y/N)? N

What is the percentage of total project costs provided by the third party? (use decimal numbers)
 Attach a copy of the cost sharing agreement.

Has the Local Sponsor enter into a interlocal agreement (Y/N)? Attach a copy of the interlocal agreement.
N. The agreement is expected to be completed once USACE Jacksonville District receives funds.

Quarterly Report Compliance – For projects that are currently funded through the program or have historically been funded, the Local Sponsor may give the dates quarterly progress reports were submitted within the last fiscal year per terms of the agreement (for consideration of additional ranking points):

Quarter	Due Date	Report Remit Date	Compliant (yes/no)
July-September	October 30	<u>n/a</u>	<u>n/a</u>
October-December	January 31	<u>n/a</u>	<u>n/a</u>
January-March	April 30	<u>n/a</u>	<u>n/a</u>
March-June	July 31	<u>n/a</u>	<u>n/a</u>

Is there an active state permit for the project (Y/N)? N

Permit #:

AUTHORIZATION DATE: EXPIRATION DATE:

Is there an active federal permit for the project (Y/N)? N

Permit #:

AUTHORIZATION DATE: EXPIRATION DATE:

Have local funds been secured for the project (Y/N)? Y

Explain: The 2018–2022 budget detailed in the County’s 2018 Financial Plan includes appropriate levels of project funding.

Has a copy of the resolution been drafted and attached to this application (Y/N)? Y

In order to acquire state funding, the Local Sponsor must provide a resolution from the governing board which declares:

- Support from the Local Sponsor for the project
- Willingness to serve as the Local Sponsor
- Ability to provide the full local cost share
- Identification of the source of funding

A draft resolution must be provided with the application. The signed resolution must be received by September 28, 2018.

11. Previous State Commitment:

Has the Department previously reviewed, approved and cost-shared on a feasibility or design phase for this project (Y/N)? N

Provide the most recent phase(s) funded by the Department: the above-mentioned 2014 IMP update

Will this project enhance or increase the longevity of a previously-constructed project (Y/N)? N Explain: n/a

Will this project nourish a previously restored shoreline (Y/N)? N
 (Full beach nourishment only. Dune maintenance projects do not apply)

Has a previously approved appropriation for this project phase been released in its entirety by the local sponsor due to delays in the project timelines (Y/N)? N

12. Inlet Management Plans:

Does the project have an existing Inlet Management Plan or completed Inlet Management Study accepted by the Department that defines the sediment budget, quantifies the volumetric bypassing objective and contains specific management strategies (Y/N)? Y

Has the Department received and approved an update to an existing Inlet Management Plan in the form of a current inlet management study/sediment budget analysis within the previous 10 years or is an update being proposed to an existing inlet management plan (Y/N)? Y. The Department approved an update in 2014.

Is a new inlet management study being proposed for the submittal to the Department for adoption in an Inlet Management Plan (Y/N)? N

13. Availability of Federal Funds:

Is the project Federally authorized by WRDA (Y/N)? N. The federal Study Initiation Request has been approved and the study is waiting in line for appropriations, expected by early 2019.

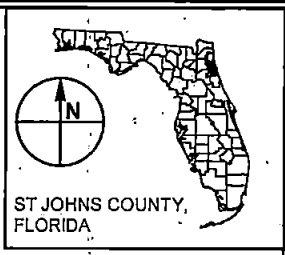
AUTHORIZATION YEAR: EXPIRATION YEAR:

Does the project have a Project Cooperative Agreement or other Federal Funding agreement (Y/N)? If so, attach a copy of the document. N

What is the federal cost share percentage provided for this project? (use decimal numbers) 50.0%

Is this project is funded through FEMA for storm repairs (Y/N)? N

If so, attach a copy of the signed Project Worksheet.



Legend

- St Johns R-Monuments

MILES

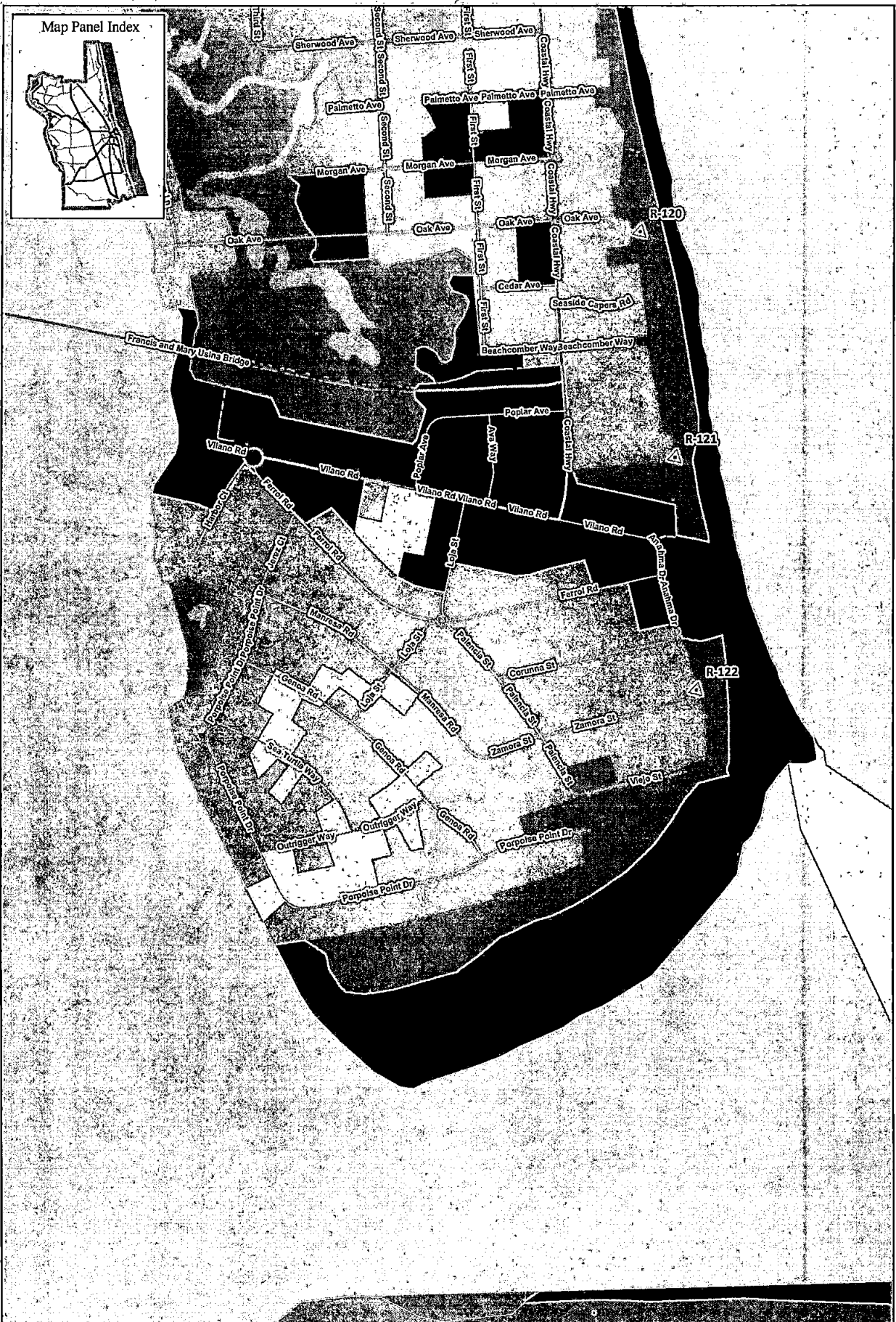
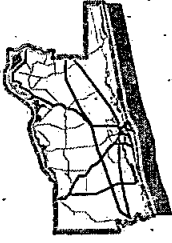
IMAGE SOURCE: FDOT, 2016

TAYLOR ENGINEERING INC.
 10199 SOUTHSIDE BOULEVARD
 SUITE 310
 JACKSONVILLE, FL 32256
 CERTIFICATE OF AUTHORIZATION # 4815

SAINT AUGUSTINE INLET
 ST JOHNS COUNTY, FLORIDA

PROJECT	P2018-045
DRAWN BY	WKL
SHEET	
DATE	JULY 2018

Map Panel Index



Legend

Range Monuments	Recreational	Wetlands, Hardwood
Land Use 2014	Open Land	Wetlands, Coniferous
Residential	Agriculture	Wetlands, Mixed
Commercial and Services	Upland Non-Forests	Wetlands, Mixed
Industrial	Coniferous Forests	Wetlands, Non-Vegetated
Extractive	Hardwood Forests	Barren Land
Institutional	Tree Plantation	Transportation, Communication and Utilities
	Water	Not Categorized

Land Use Designations Porpoise Point

Land use designations from St. Johns River Water Management District's 2014 Land Use / Land Cover Data

0 250 500 750
Feet

DISCLAIMER
This map is for reference use only. Data provided are derived from multiple sources with varying levels of accuracy. The St. Johns County GIS Division disclaims all responsibility for the accuracy or completeness of the data shown hereon.
Map Prepared: 7/20/2018 117727





DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, SOUTH ATLANTIC DIVISION
60 FORSYTH STREET SW, ROOM 10M15
ATLANTA, GA 30303-8801

REPLY TO
ATTENTION OF

21 MAY 2018

CESAD-PDP

MEMORANDUM FOR Commander, Jacksonville District (CESAJ-PM-WN)

SUBJECT: Approval of the Porpoise Point, Section 103, Study Initiation Request (SIR)

1. Reference e-mail, CESAJ-PM-WN, 2 May 2018, subject: Porpoise Point (103) SIR Review/Approval.

2. SAD reviewed and hereby approves the SIR for the subject project. The following information shall be provided at the Federal Interest Determination milestone:

a. A description of how a project could be implemented in consideration of compatibility with the existing St. Johns County project, the existing St. Augustine Inlet navigation project and its disposal areas, and the dynamic nature of inlets.

b. The proposed project study area is within a Coastal Barrier Resources Act (CBRA) unit - starting at the groin and going around the point. The team will need to take this under consideration when looking at solutions - e.g. any sand will need to come from within the same unit. The evaluation should also demonstrate the ecological need to do this project in order to get approval from the United States Fish and Wildlife Service (USFWS) and that it will not encourage any more development on the coastal barrier island.

3. The District should create a project in P2 and update the CAP Database in CWIFD with the following information: date of the sponsor letter, fill in the remarks section with the date of the site visit, the description of the issue to be investigated, and potential capability of \$50K for the FID. This study should be marked as an UNSTARTED project and phase so that when HQ is looking for New Starts, it will populate correctly in their reports.

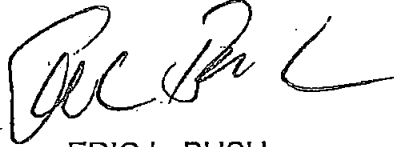
4. The FID submittal package, consisting of a cover memorandum and the CAP fact sheet should be provided to this office within two months of the receipt of funds. If the District believes there is a Federal interest in continuing the feasibility phase, the District

CESAD-PDP

SUBJECT: Approval of the Porpoise Point, Section 103, Study Initiation Request (SIR)

must complete a Project Management Plan within the first 120 days and with the first \$50,000 received unless inadequate funding prevents meeting that schedule.

5. The point of contact for this action is Ms. Kenitra Stewart at (404) 562-5229.

A handwritten signature in black ink, appearing to read "Eric L. Bush". The signature is stylized with a large initial "E" and "B".

ERIC L. BUSH
Chief, Planning and Policy Division



St. Johns County Board of County Commissioners

Office of the County Administrator
Michael D. Wanchick, County Administrator

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

Dear Colonel Kirk:

St. Johns County requests the assistance of the U.S. Army Corps of Engineers with a critical beach erosion and shoreline stabilization problem located at Porpoise Point in Vilano Beach, Florida.

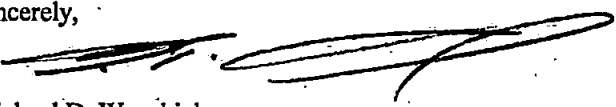
Hurricanes Matthew and Irma, along with numerous northeasters, have caused critical erosion to this small beach. Erosion of this beach become progressively worse every day and has now endangered numerous dwellings, exposed utility lines, and damaged portions of Porpoise Point Drive, a hurricane evacuation route.

The St. Johns County Board of County Commissioners requests that the Corps of Engineers investigate the problem under the authority of the Hurricane and Storm Damage Reduction Program Section 103 of the 1962 River and Harbor Act. It is understood that Corps of Engineers will initially investigate the problem to determine whether it meets the requirements for federal participation and, if a federal interest determination is made and both the Corps of Engineers and St. Johns County agree, the Corps of Engineers may continue with a feasibility study.

It is also understood that the feasibility study is 100 percent federally funded up to \$100,000, with costs over \$100,000 to be shared equally with the non-federal sponsor and up to one-half of the non-federal share can be in the form of in-kind services. Further, design and construction costs of any approved project would be shared 65% Federal and 35% Non-Federal.

Thank you in for your time in considering this request as it is a critical issue negatively impacting infrastructure, local residents, and tourism. Damon Douglas, St. Johns County Project Manager, can be reached at 904-209-0794 for additional information regarding this request or the erosion of Porpoise Point.

Sincerely,



Michael D. Wanchick,
County Administrator

Cc: Henry Dean, County Commission Chairman
Jimmy Johns, County Commissioner
Jeb Smith, County Commissioner
Paul Waldron, County Commissioner
Jay Morris, County Commissioner
Neal Shinkre, SJC Public Works Director

Trip Report
Porpoise Point
July 17, 2018

A site visit of Porpoise Point was conducted by Marty Durkin (CESAJ-EN-WC) on 17 July 2018. This site visit was conducted to inspect recent reports of continued erosion on the south side of the north groin and to evaluate overall beach erosion conditions for porpoise point.

Field Conditions: The site visit took place from about 0700 to 0830. During this time temperatures were in the mid-80s with mostly clear skies and a light breeze out of the southwest. Waves measured at NDBC buoy #41117 offshore St. Augustine were 2 foot at 8 seconds from the East. The NOAA tide prediction for St. Augustine Beach (Station 8720587) was for a low tide of -0.56' MLLW at 6:21 am.

Reports of Erosion at Porpoise Point

E-mails from local interests reporting this increased erosion have been forwarded to the SAJ team. The first e-mail was from November 9, 2017 notes that erosion south of the groin had been steadily increasing since Hurricane Irma and long lasting nor'easter conditions that followed. This e-mail included pictures of the increased erosion along the south side of the groin and small sinkholes developing on the north side of the groin caused by sand migrating through the groin due to the large voids in the structure. SAJ staff investigated this erosion on November 14, 2017. Another e-mail reporting on this issue was from February 21, 2018 noting that the ocean continues to encroach at the east end of Porpoise Point Drive and that increased erosion on the south side of the groin along Porpoise Point has exposed a water main that serves 5 platted lots that were under water at that time. The e-mail expressed concern that if the erosion continues at the rate observed over the last several months then Porpoise Point Drive (a county road) will be damaged along with the developed properties in that area. An e-mail from February 28, 2018, included pictures showing water coming up to the end of Porpoise Point Drive and inundation at the vehicle access point at the intersection of Genoa Rd and Porpoise Point Drive. In July 2018 the PM had received additional calls from Porpoise Point residents that erosion is much worse and the sand bar offshore has moved around.

Observations from previous site visit on March 1, 2018

This was the worst erosion anyone on site had ever seen in this location. Erosion had encroached upon the landward side of the groin which had previously been covered by sand and vegetation, and had already undermined the most seaward end of Porpoise Point Drive, encroaching upon the seaward most homes on the south side of Porpoise Point Drive.

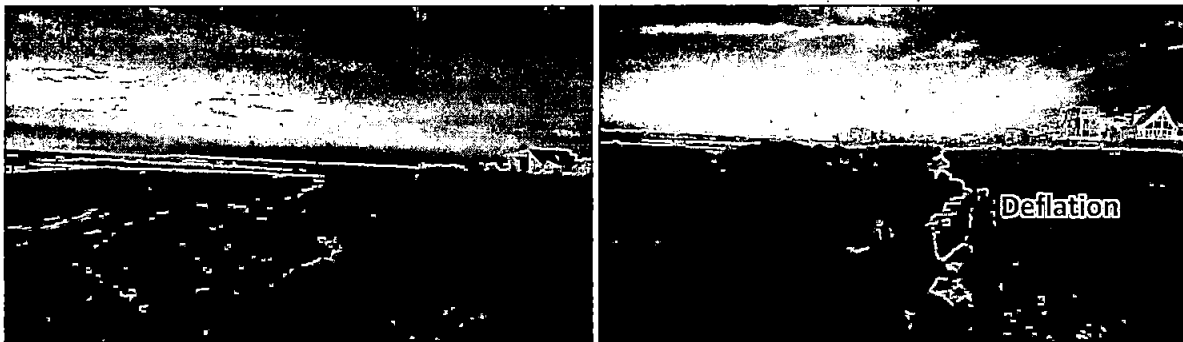
The team also discussed what the recent erosion in this area might be attributable to. There seemed to be some general consensus that several factors might be leading to the recent erosion being observed. The factors discussed include

- **The depleted beaches to the north:** In the past sand has been transported from the beach to the north around, over, and through the north groin and onto the Porpoise Point shoreline. In recent years the beaches to the north have become more and more sand starved with continued erosion and the construction of more and more seawalls. So, the flow of sediment making its way to Porpoise Point is likely reduced as a result.

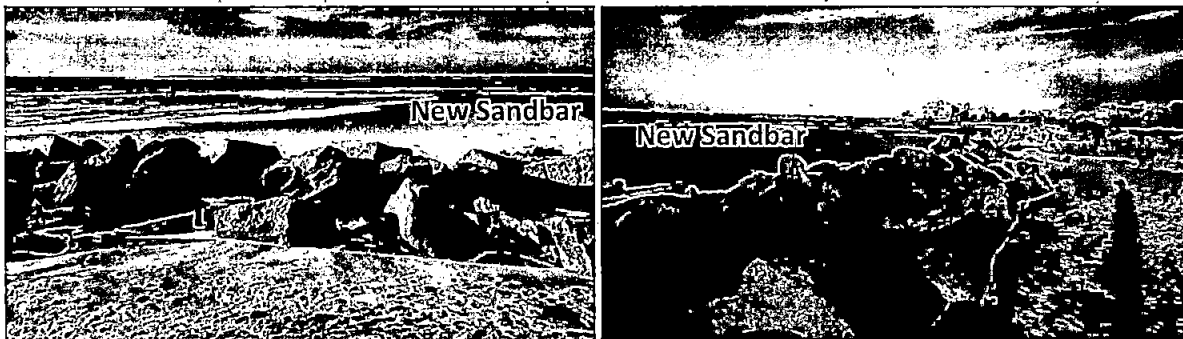
- **Changes to the inlet hydraulics:** The interaction between the Porpoise Point shoreline and the tidal current flowing through the inlet may have experienced a change in recent years potentially attributable to dredging areas in 2012 that were not previously used as borrow areas. This along with other factors such as recent storm events may have altered the inlet hydraulics and may be contributing to the increased erosion of Porpoise Point now being observed.
- **Storm impacts:** Porpoise Point and the vicinity of the north groin experienced significant overtopping during both Hurricanes Matthew (2016) and Irma (2017) and the beach immediately to the north appeared to experience erosion during both of these events. Following Irma a stretch of nor'easter conditions continued to erode the shoreline in this area.

Observations from site visit on July 17, 2018

The site visit began on the north side of the sand trap groin on the north side of the inlet. It was observed that the upper dry beach in this area was narrower with a wider flat low tide berm, as compared to observations of this area made prior to Hurricanes Matthew and Irma. The beach adjacent to the north side of the groin appeared a bit more deflated than it had been during the site visit on March 1, 2018. The below photo shows the area where this deflation was observed.

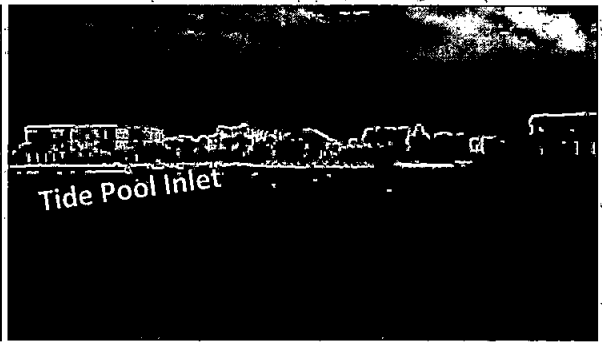
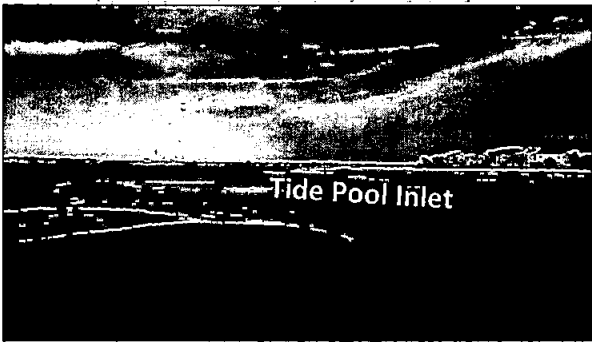
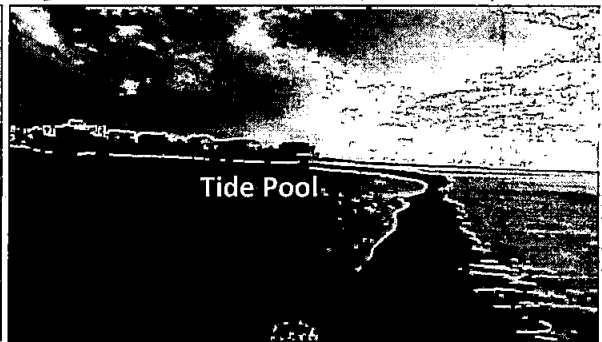
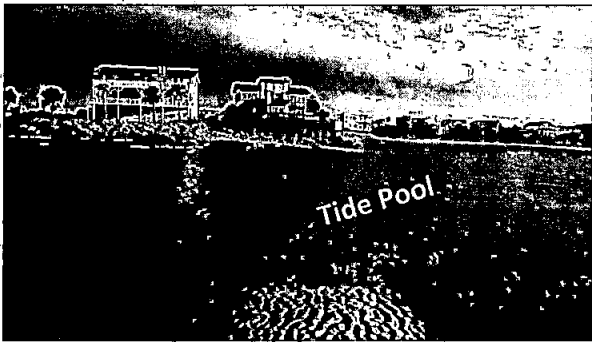


Moving westward along the groin to about where the ocean front houses start north of the groin, a very porous section of the groin was observed. A newly formed sandbar was observed extending southward into the inlet from this point which curved to the southwest as it extended into the inlet. (See pictures below)

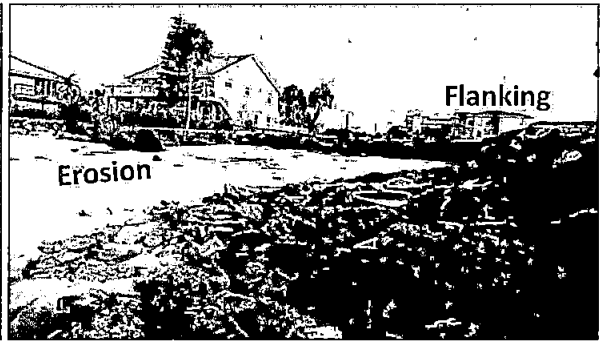




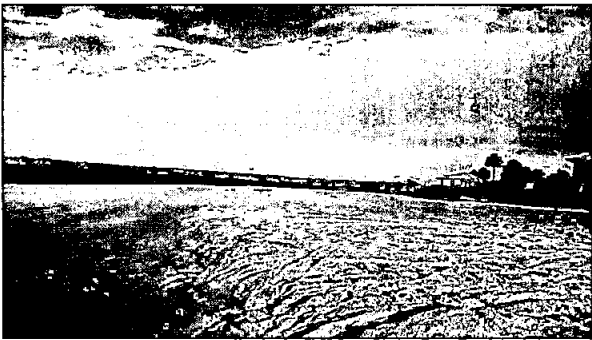
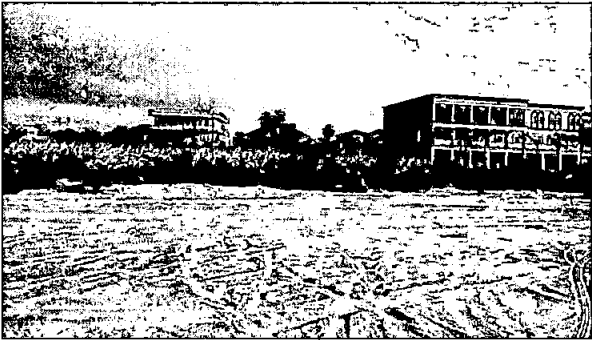
A tidal pool feature existed between this newly formed sand bar and the easternmost homes south of the groin. There was a small inlet connecting the southern side of the tide pool to the inlet waters in the vicinity of the vehicle access from Porpoise Point Drive. (See pictures below)



Increased erosion was observed along the armor fronting the easternmost homes south of the groin. The sand placed at the eastern end of Porpoise Point Drive several months ago appears to be mostly in place other than a scarped area at the southwestern end of the placed material. The shoreline armor at the second house in from the east was getting flanked to the west with erosion encroaching into the yard. This location is currently the most vulnerable area to property damage should a storm impact this area. (See pictures below)



Continuing to the west, the Porpoise Point shoreline had a wider dry portion of vegetated dunes between the homes and the inlet, however the dune area was still narrower than it was prior to Hurricanes Matthew and Irma. Sand appears to be migrating to the west towards the IWW and there is now dry beach underneath the boat lift at the southwest corner of Porpoise Point. (See pictures below)

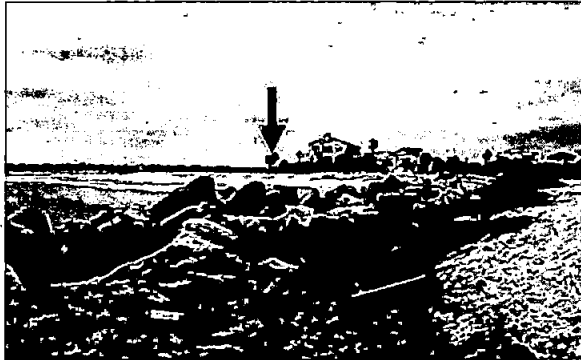


Discussion

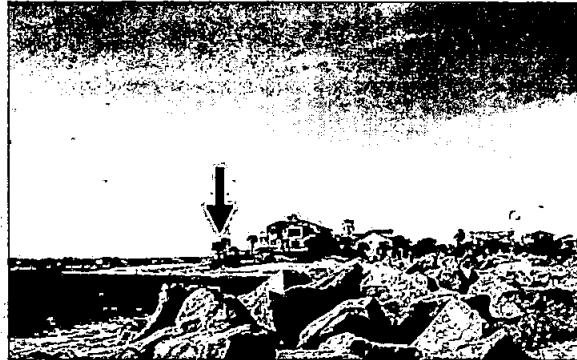
It is possible that the newly formed sandbar will continue to migrate towards the Porpoise Point shoreline where it will build the dry beach fronting the homes inside of the groin. The area still remains vulnerable to damages from storm impacts. Homeowners should remain vigilant and continue to report changing conditions in the area.

Photo comparison to previous site visits

November 14, 2017



March 1, 2018



July 17, 2018



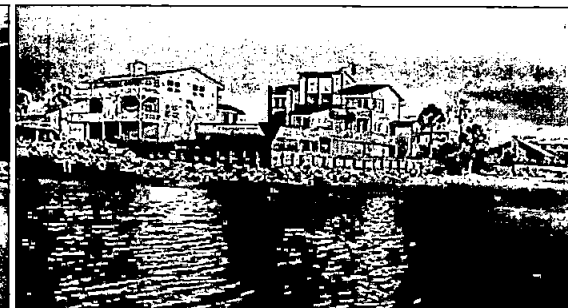
April 6, 2017



March 1, 2018



July 17, 2018



Trip Report

St. Augustine Inlet North Groin

March 1, 2018

A site visit of the St. Augustine Inlet North Groin was conducted on 1 March 2018. This site visit was conducted to

- 1) Inspect recent reports of significantly increased erosion that continues to worsen on the south side of the north groin and to evaluate beach erosion conditions for porpoise point.
- 2) Assess the site conditions for the proposed partial sand tightening of the north groin.

Field Conditions: The site visit took place from about 1030 to 1200. During this time temperatures were in the mid-70s with mostly clear skies and a moderate breeze out of the west. Waves measured at NDBC buoy #41117 offshore St. Augustine were 1 foot at 8 seconds from the East-Northeast. The NOAA tide prediction for St. Augustine Beach (Station 8720587) was for a low tide of -0.89' MLLW at 1:34 pm.

Site Visit Attendees:

- SAJ Staff: Jason Harrah, Kevin Hodgens, Marty Durkin, Mike Neves, Gabe Todaro, Paul DeMarco, Paul Karch
- St. Johns County: Rajesh Srinivas (consultant), Jay Brawley, Tara Dodson, additional county staff
- FIND: Carl Blow (Commissioner)

Recent Erosion at Porpoise Point

E-mails from local interests reporting this increased erosion have been forwarded to the SAJ team over the past several months. The first e-mail was from November 9, 2017 notes that erosion south of the groin had been steadily increasing since Hurricane Irma and long lasting nor'easter conditions that followed. This e-mail included pictures of the increased erosion along the south side of the groin and small sinkholes developing on the north side of the groin caused by sand migrating through the groin due to the large voids in the structure. SAJ staff investigated this erosion on November 14, 2017.

Another e-mail reporting on this issue was from February 21, 2018 noting that the ocean continues to encroach at the east end of Porpoise Point Drive and that increased erosion on the south side of the groin along Porpoise Point has exposed a water main that serves 5 platted lots that were under water at that time. The e-mail expressed concern that if the erosion continues at the rate observed over the last several months then Porpoise Point Drive (a county road) will be damaged along with the developed properties in that area.

The most recent e-mail from February 28, 2018, included pictures showing water coming up to the end of Porpoise Point Drive and inundation at the vehicle access point at the intersection of Genoa Rd and Porpoise Point Drive.

Observations and Discussion on Porpoise Point Erosion

The site visit began at the landward end of the groin (seaward end of Porpoise Point Drive) where recent erosion has progressed further landward along the south side of the groin. This was the worst erosion anyone on site had ever seen in this location. Erosion had encroached upon the landward side of the groin which had previously been covered by sand and vegetation, and had already undermined the most seaward end of Porpoise Point Drive, encroaching upon the seaward most homes on the south side of Porpoise Point Drive. The below pictures show the erosion observed on the site visit compared to previous site visits within the past year.

November 14, 2017



March 1, 2018



April 6, 2017



March 1, 2018



April 6, 2017



March 1, 2018



The team discussed short term options for what could be done to prevent undermining and/or flanking of the north groin, and also prevent further damage to Porpoise Point Drive and homes in the area where the erosion is occurring.

The first option discussed involved modifying St. Augustine Beach project currently under construction to place sand in the eroded area. The option would likely be very difficult from a construction standpoint. The throat of St. Augustine Inlet is a difficult place to work with strong currents, and the logistics of running pipeline to the eroded area would likely not be cost effective or safe. Also, any sand pumped would likely wash out into the inlet almost immediately. This option would also likely require NEPA and either a permit or de minimis exemption. Currently, no authorization exists under the Flood Risk Management business line for USACE to place material on this portion of the beach. Therefore from the USACE perspective, any beach placement of material would be solely for the purposes of protecting the groin from undermining or flanking.

Another option discussed was to stockpile some additional material on the St. Augustine Beach project near Pope Road, and have St. John's County truck haul the material to the seaward end of Porpoise Point Drive where it could be placed in a protective dune above MHW. The sand being placed in this proposed dune feature above MHW would likely stay in place longer and offer more flood protection for the infrastructure in the area than sand hydraulically placed onto the beach as a berm. This option would not likely require additional NEPA or permits and would be a relatively small modification to the ongoing St. Augustine project. The team also discussed that geo-tubes or sandbags might provide longer lasting protection, however St. John's County did not indicate that this was something they had at their disposal.

The team seemed to agree that stockpiling about 5,000 cubic yards (CY) of material from the St. Augustine SPP and having St. John's County truck haul it to the eroded area was the best short term measure that could be taken to prevent damage to the groin and adjacent infrastructure. 5,000 CY would provide for a 10 CY/foot dune feature along 500 feet of shoreline near the landward end of the groin. The below figure shows the area where erosion is threatening the seaward end of the groin as well as the road and houses where sand could be placed to provide some short term protection. St. Johns County has completed truck haul operations as discussed above. (Rajesh could provide the total quantity etc. from those operations so we can track how long it actually stays.)



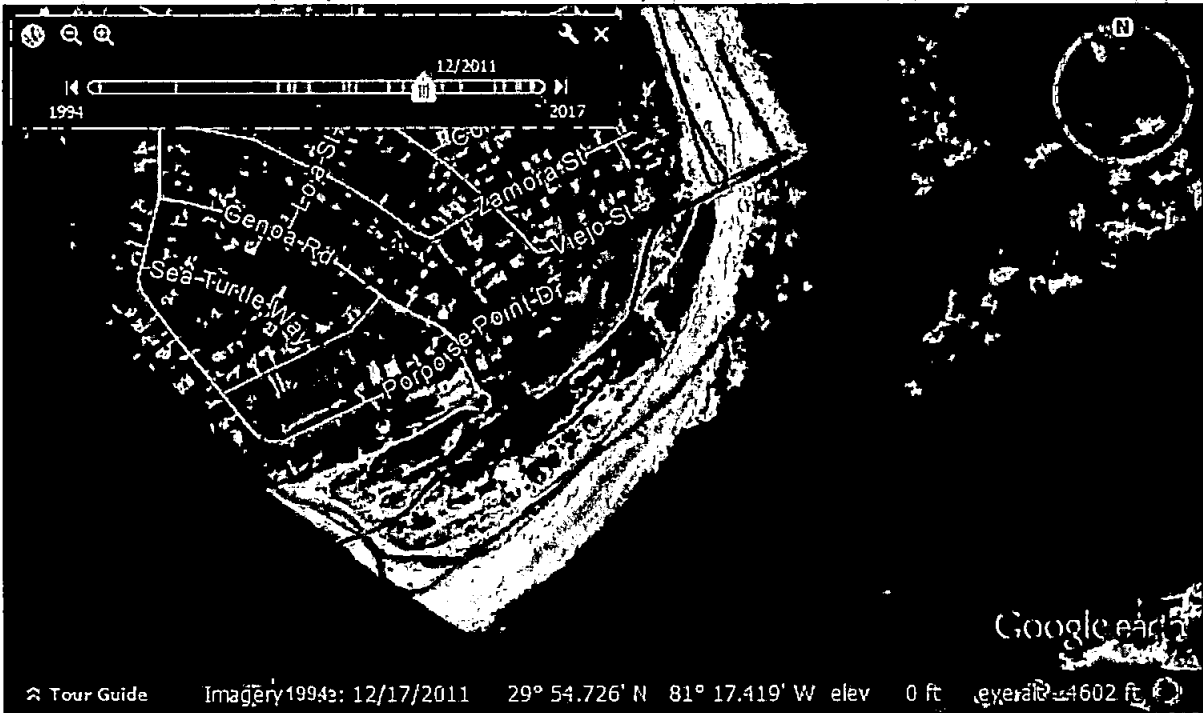
It was also mentioned that for a longer term solution there are CAP authorities that could address the problem, but those would require a non-Federal sponsor and need to go through the CAP study before design and implementation. Project management will discuss the various CAP options and provide information to St. Johns County.

The team also discussed what the recent erosion in this area might be attributable to. There seemed to be some general consensus that several factors might be leading to the recent erosion being observed. The factors discussed include

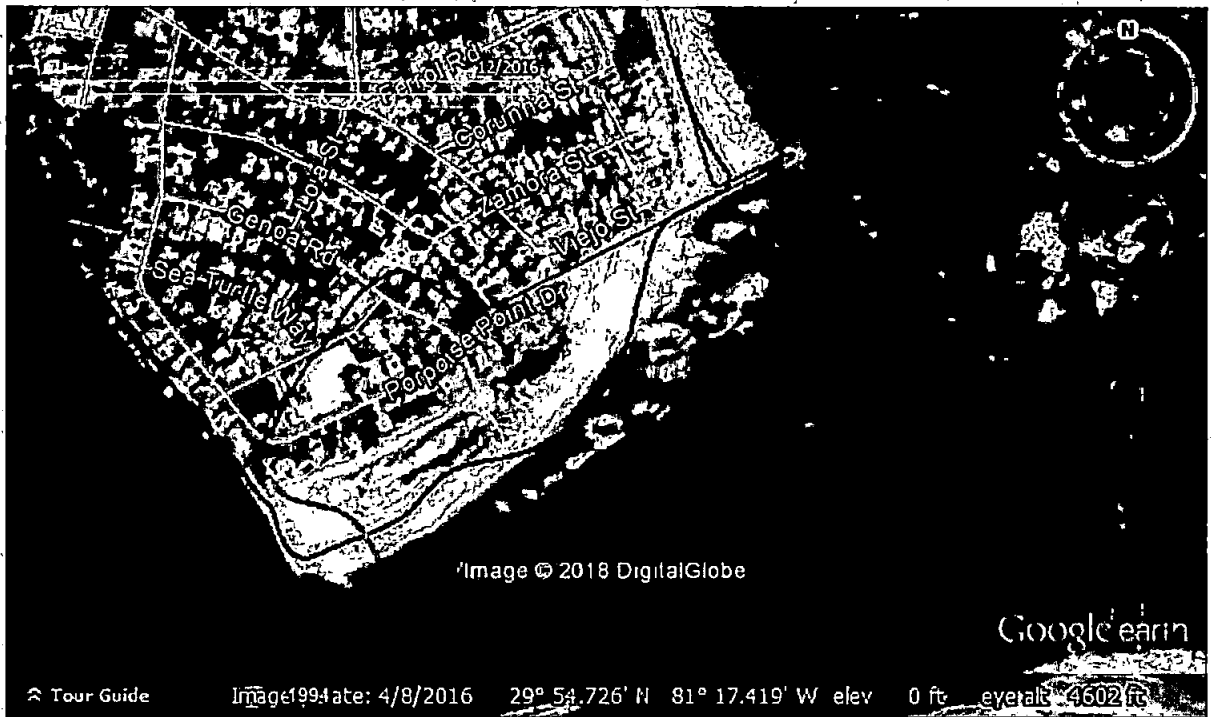
- **The depleted beaches to the north:** In the past sand has been transported from the beach to the north around, over, and through the north groin and onto the Porpoise Point shoreline. In recent years the beaches to the north have become more and more sand starved with continued erosion and the construction of more and more seawalls. So, the flow of sediment making its way to Porpoise Point is likely reduced as a result.
- **Changes to the inlet hydraulics:** The interaction between the Porpoise Point shoreline and the tidal current flowing through the inlet may have experienced a change in recent years potentially attributable to dredging areas in 2012 that were not previously used as borrow areas. This along with other factors such as recent storm events may have altered the inlet hydraulics and may be contributing to the increased erosion of Porpoise Point now being observed.
- **Storm impacts:** Porpoise Point and the vicinity of the north groin experienced significant overtopping during both Hurricanes Matthew (2016) and Irma (2017) and the beach immediately to the north appeared to experience erosion during both of these events. Following Irma a stretch of nor'easter conditions continued to erode the shoreline in this area.

The following series of screen shots of Google Earth imagery shows gradual erosion of Porpoise Point since 2008 when the shoreline at the seaward end of the north groin was at its widest point based on LIDAR data available going back to 1999. In all of the screen shots the 1946 MHW line (3 years after groin construction completed) is shown in red, the 2008 MHW line (widest Porpoise Point has been recently at the end of the groin) is shown in green, and the 2017 MHW line (post-Irma) is shown in blue. The imagery dates are shown at the bottom of the screen shots.









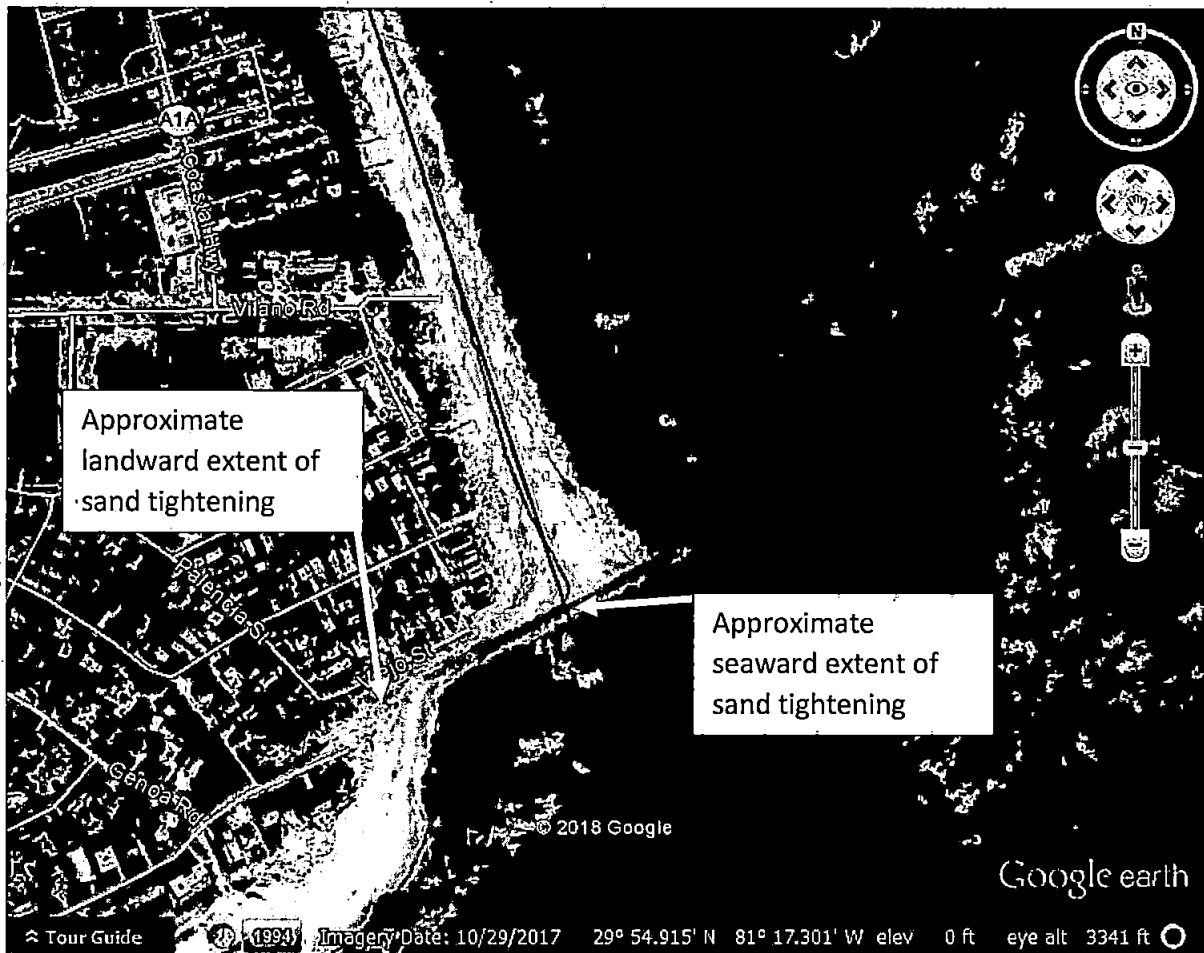




Observations and Discussion on Proposed Partial Sand Tightening

In addition to inspecting the increased erosion on the south side of the groin, the team also discussed the extent for partially sand tightening the groin. Partial sand tightening of the exposed structure is the recommendation that came from investigating possible modifications to the groin using the Coastal Modeling System (CMS) and subsequent discussions with stakeholders. We will also try to include backfilling the groin with additional sand as part of the project construction to ensure that the improved structure doesn't reduce the amount of sediment transported past the structure.

The groin design elevation contour (3.29' NAVD 88 or 6' MLW) was extended down from the shoreline to the north of the groin to determine the seaward extent of the proposed sand tightening. The 2017 Post-Irma shoreline yields the most landward position where the design elevation contour extends from the north to intersect the groin. The sand tightening would extend landward to where the groin is exposed (not buried by sand and vegetation) at the time of construction.



The team discussed several considerations for partially sand tightening the groin including:

- The seaward and landward extents of the sand tightening
- Work within the USACE easement from the north (landward) side of the groin
- Removal of the existing timber piles
- NEPA will require an EA and due to proximity of water may require a permit

The below pictures show the general condition of the groin where sand tightening is proposed.



