FINAL ORDER ADOPTING

ST. AUGUSTINE INLET MANAGEMENT IMPLEMENTATION PLAN

WHEREAS on August 31, 1998, the Florida Department of Environmental Protection (Department) adopted the St. Augustine Inlet Management Study Implementation Plan, which established inlet sand bypassing objectives, called for restoration of critically eroded downdrift beaches, promoted natural sediment bypassing, called for the implementation of a dune management program on downdrift beaches, and called for implementation of a comprehensive beach and offshore monitoring program that would be used to identify beach placement locations for future bypassing efforts and to revalidate the adopted sediment budget, and

WHEREAS the existing inlet protocol to place an average annual objective of 510,000 cubic yards of sediment on the beach in areas of greatest need was determined by the sediment budget developed in the study *St. Augustine Inlet Management Plan* (Taylor Engineering, 1997), which was conducted in partnership with the St. Augustine Port, Waterway and Beach District, and

WHEREAS the sand bypassing objectives of the St. Augustine Inlet Management Study Implementation Plan were accomplished by placement of inlet maintenance dredging material on the beaches south of the inlet and by use of the inlet ebb tidal shoal as a sand source for the St. Johns County Shore Protection Project at St. Augustine Beach. However, the volume of sediment removed from the inlet shoals exceeded the established bypassing objective of 510,000 cy and led to concern about potential erosion[1] impacts to the beaches adjacent to the inlet, and

WHEREAS in 2008, the Florida Legislature amended Section 161.142, Florida Statutes, finding, "It is in the public interest to replicate the natural drift of sand which is interrupted or altered by inlets to be replaced and for each level of government to undertake all reasonable efforts to maximize inlet sand bypassing to ensure that beach-quality sand is placed on adjacent eroding beaches. Such activities cannot make up for the historical sand deficits caused by inlets but shall be designed to balance the sediment budget of the inlet and adjacent beaches and extend the life of proximate beach-restoration projects so that periodic nourishment is needed less frequently", and

WHEREAS, the U.S. Army Corps of Engineers and St. Augustine Port, Waterway and Beach District are the entities that are responsible for the maintenance dredging of St. Augustine Inlet. Therefore, in accordance with the provisions of Subsection 161.142(6), Florida Statutes, they are the entities responsible for the extent of erosion and for measures to correct such erosion, and

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[1] As used in this document, the term "erosion" means wearing away of land or the removal of consolidated or unconsolidated material from the coastal system by wind or wave action, storm surge, tidal or littoral currents or surface water runoff. As used in this document, the term "accretion" means the buildup of land or accumulation of unconsolidated material within the coastal system caused by wind and wave action, storm surge, or tidal or littoral currents. The description of coastal processes in this document are not intended to affect title to real property or real property boundaries.

WHEREAS the Department contracted with the Beaches and Shores Resource Center (BSRC), Florida State University, to compile new and historical data and information regarding coastal processes and inlet and shoreline dynamics, as reported in *Inlet Management Restudy for St. Augustine Inlet, St. Johns County, Florida* (Walton et al, 2011), and

WHEREAS the U.S. Army Corps of Engineers, Jacksonville District, developed a regional sediment budget for St. Augustine Inlet and St. Johns County for the 11-year period between 1998/99 and 2010 (USACE, 2012), and

WHEREAS USACE (2012) provides an Inlet Sink Analysis by evaluating the historic shoreline changes and the inlet's sink effect. The analysis determined the inlet's sink effect to be about 278,100 cy per year, with a maximum beach erosion rate north of the inlet to R83 of -98,800 cy per year, and a maximum beach erosion rate south of the inlet to R152 of -179,300 cy per year, and

WHEREAS the Department has developed an updated implementation plan that contains corrective measures to mitigate the identified impacts of the inlet, and

WHEREAS this revised inlet management plan is consistent with the Department's program objectives under Chapter 161, Florida Statutes,

THEREFORE:

The Department does hereby adopt the following implementation strategies, as set forth in attachment A, "St. Augustine Inlet 2013 Summary of Findings Report and Inlet Management Implementation Plan Update," hereby incorporated by reference. Future inlet management activities shall be consistent with the following eight strategies:

1) Continue to transfer sediment from the inlet system to the adjacent beaches meeting a bypassing objective of 278,000 cubic yards per year as determined by the Inlet Sink Analysis provided in the document, *Regional Sediment Budget for St. Augustine Inlet and St. Johns County, FL, 1998/1999-2010* (USACE, 2012). The material obtained from the inlet system shall be distributed to the adjacent Atlantic Ocean fronting beaches with a placement ratio of approximately one-third of material placement to the north and two-thirds of material placement to the south.
2) Inlet sand transfer material shall be placed in designated critically eroded areas to the north or south of the inlet between R84 and R152, St. Johns County, in accordance with Implementation Strategy #1.
3) Inlet dredge material may be obtained from the federal navigation channel, the intracoastal waterway channel, and encroaching flood shoals adjacent to the federal channel, including the Porpoise Point borrow area for placement in accordance with Implementation Strategies #1 and #2.
4) The south lobe of the ebb shoal and the federal navigation channel, including below the authorized project depth may be used as the primary sources of sand for the St. Johns County Shore Protection Project in an amount not to exceed 179,000 cubic yards per year times the number of years between beach nourishment events. However, additional

material may be removed from the authorized navigation channel when necessary for required interim navigation channel maintenance dredging.

5) Engineering and geotechnical investigations shall be conducted of additional borrow areas to meet the inlet bypassing objective. These investigations shall identify the beach quality and quantity of material available, as well as any potential impact on the inlet system or adjacent beaches.
6) Feasibility investigations shall be conducted of the north jetty to determine the beach management benefits and impacts of possible jetty modifications, including but not limited to sand tightening, lengthening, and raising elevations. The impact evaluation shall specifically identify any physical impact to the inlet system or adjacent beaches including Anastasia State Park.
7) A comprehensive beach and inlet hydrographic monitoring program shall be implemented to evaluate performance and impact of existing projects and to update and define the inlet sediment budget. The monitoring program shall include topographic and bathymetric profile surveys at each of the Department's reference monuments between R80 and R157, and along the Porpoise Point spit. Monitoring shall also include bathymetric surveys of the inlet system, including the entire inlet ebb and flood shoal complex between not less than R116 and R132, including the navigation channels and attachment bars, and the navigation easement adjacent to and including the shoreline of the Porpoise Point spit.
8) The inlet sand bypassing objective in Implementation Strategy #1 may be updated following a review and analysis of additional monitoring data collected over at least a five (5) year period. The updated inlet sand bypassing objective shall not become effective less than two (2) years prior to a scheduled beach nourishment of the shore-protection project in order to allow adequate time for project planning and design.

Inlet management actions that implement the strategies contained in this plan are subject to further evaluation, and subsequent authorization or denial, as part of the Department's permitting process. Activities that implement these adopted strategies shall be eligible for state financial participation pursuant to Section 161.143, Florida Statutes, subject to Department approval and an appropriation from the Florida Legislature. The level of State funding shall be determined based upon the activity being conducted and the Department's applicable statutes and rules. The Department may choose not to participate financially if the proposed method of implementation is not cost effective or fails to meet the intent of Section 161.142, Florida Statues, and the adopted inlet management strategies. Nothing in this plan precludes the evaluation and potential adoption of other strategies for the effective management of St. Augustine Inlet and the adjacent beaches through further revision to that plan as may be properly adopted.

Execution of this Final Order constitutes agency action. Any Florida corporation not for profit which meets the requirements of Subsection 403.412(6), Florida Statutes, and any person whose substantial interests will be determined or affected by the Final Order may petition the Department for a formal or informal administrative hearing pursuant to Section 120.569 or 120.57, Florida Statutes, as set forth in the attached Notice of Rights, to challenge the provisions of this Final Order.

If the Department proposes to issue a permit that implements the strategies in this Final Order, any Florida corporation not for profit which meets the requirements of Subsection 403.412(6), Florida Statutes, and any person whose substantial interests will be determined or affected by the proposed permit may petition the Department for a formal or informal administrative hearing pursuant to Section 120.569 or 120.57, Florida Statutes, as set forth in the Notice of Rights attached to the permit. The scope of a challenge to a permit approval or denial is limited to whether the agency action complies with the permitting criteria. Agency action previously subject to challenge or administrative review will not be subject to challenge at the time of permit approval or denial.

APPROVED FOR ADOPTION

Mark P. Thomasson, P.E.
Division of Water Resource Management
Department of Environmental Protection

1/17/14
Date

FILING AND ACKNOWLEDGEMENT

FILED, on this date with the designated Department Clerk, pursuant to Section 120.52, F.S., receipt of which is hereby acknowledged.

Deputy Clerk

1/17/14
Date

NOTICE OF RIGHTS

The Department's proposed agency action shall become final unless a timely petition for an administrative hearing is filed under Sections 120.569 and 120.57, Florida Statutes, before the deadline for filing a petition. The procedures for petitioning for a hearing are set forth below.

A person whose substantial interests are affected by the Department's proposed action decision may petition for an administrative proceeding (hearing) under Sections 120.569 and 120.57, Florida Statutes. The petition must contain the information set forth below and must be filed (received by the clerk) in the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida 32399-3000. Petitions must be filed within twenty-one days of receipt of this written notice.

Under Rule 62-110.106(4), Florida Administrative Code, a person whose substantial interests are affected by the Department's action may request an extension of time to file a petition for an administrative hearing. Requests for extension of time must be filed (received by the clerk) with the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida 32399-3000, before the end of the time period for filing a petition for an administrative hearing. The Department may, for good cause shown, grant the request for an extension of time. A timely request for extension of time shall toll the running of the time period for filing a petition until the request is acted upon.

Petitions filed by any persons other than those entitled to written notice under Section 120.60(3), Florida Statutes, must be filed within twenty-one days of publication of the notice or within twenty-one days of receipt of the written notice, whichever occurs first. Under Section 120.60(3), Florida Statutes, however, any person who asked the Department for notice of agency action may file a petition within twenty-one days of receipt of such notice, regardless of the date of publication.

The failure of any person to file a petition or request for extension of time within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57, Florida Statutes, or to intervene in this proceeding and participate as a party to it. Any subsequent intervention (in a proceeding initiated by another party) will be only at the discretion of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205, Florida Administrative Code.

A petition that disputes the material facts on which the Department's action is based must contain the following information:

(a) The name and address of each agency affected and each agency's file or identification number, if known;

(b) The name, address, and telephone number of the petitioner; the name, address, and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial interests are or will be affected by the agency determination;

(c) A statement of when and how the petitioner received notice of the agency decision;
(d) A statement of all disputed issues of material fact. If there are none, the petition must so indicate;
(e) A concise statement of the ultimate facts alleged, including the specific facts that the petitioner contends warrant reversal or modification of the agency's proposed action;
(f) A statement of the specific rules or statutes that the petitioner contends require reversal or modification of the agency's proposed action; and
(g) A statement of the relief sought by the petitioner, stating precisely the action that the petitioner wishes the agency to take with respect to the agency's proposed action.

A petition that does not dispute the material facts on which the Department's action is based shall state that no such facts are in dispute and otherwise shall contain the same information as set forth above, as required by Rule 28-106.301, Florida Administrative Code.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Department's final action may be different from the position taken by it in this notice. Persons whose substantial interests will be affected by any such final decision of the Department have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

Mediation under Section 120.573, Florida Statutes, is not available.

Once this decision becomes final, any party to the final agency action has the right to seek judicial review of it under Section 120.68, Florida Statutes, by filing a notice of appeal under Rule 9.110 of the Florida Rules of Appellate Procedure with the clerk of the Department in the Office of General Counsel, Mail Station 35, 3900 Commonwealth Boulevard, Tallahassee, Florida 32399-3000, and by filing a copy of the notice of appeal accompanied by the applicable filing fees with the appropriate district court of appeal. The notice of appeal must be filed within thirty days after this decision is filed with the clerk of the Department.

ATTACHMENT A

ST. AUGUSTINE INLET

2014 SUMMARY OF FINDINGS REPORT and INLET MANAGEMENT IMPLEMENTATION PLAN UPDATE

Introduction

Pursuant to Subsection 161.101(2), Florida Statutes, the Florida Department of Environmental Protection (Department) is the beach and shore preservation authority for the State of Florida. As part of the Departments' statewide beach management plan adopted pursuant to Section 161.161, Florida Statutes, the Department is adopting this inlet management plan for St. Augustine Inlet in St. Johns County, Florida (Figure 1). This plan updates an existing plan for St. Augustine Inlet to make the plan consistent with current statutes and observed erosion[1] conditions.

On August 31, 1998, the Florida Department of Environmental Protection (Department) adopted the St. Augustine Inlet Management Study Implementation Plan. This plan was based upon recommendations and supporting data compiled in the study report, *St. Augustine Inlet Management Plan* (Taylor Engineering, Inc., 1997). The study was conducted in partnership with the St. Augustine Port, Waterway and Beach District, under the provisions of Section 161.161, Florida Statutes, for the purposes of evaluating the erosive impact of the inlet on adjacent beaches, and to recommend corrective measures to mitigate identified impacts.

The adopted plan (FDEP, 1998) established inlet sand bypassing objectives and called for implementation of a comprehensive beach and offshore monitoring program that would be used to identify beach placement locations for future bypassing efforts and to revalidate the sediment budget.

The sand bypassing objectives of the 1998 inlet management plan were accomplished by placement of inlet maintenance dredging material on the beaches south of the inlet and by use of the inlet ebb tidal shoal as a sand source for the St. Johns County Shore Protection Project at St. Augustine Beach. However, the volume of sediment removed from the inlet shoals exceeded the established bypassing objective of 510,000 cy and led to concern about potential erosion impacts to the beaches adjacent to the inlet. Consequently, the Department initiated a new study of St. Augustine Inlet to revalidate the sediment budget and to adopt an updated inlet management plan.

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[1] As used in this document, the term "erosion" means wearing away of land or the removal of consolidated or unconsolidated material from the coastal system by wind or wave action, storm surge, tidal or littoral currents or surface water runoff. As used in this document, the term "accretion" means the buildup of land or accumulation of unconsolidated material within the coastal system caused by wind and wave action, storm surge, or tidal or littoral currents. The description of coastal processes in this document are not intended to affect title to real property or real property boundaries.

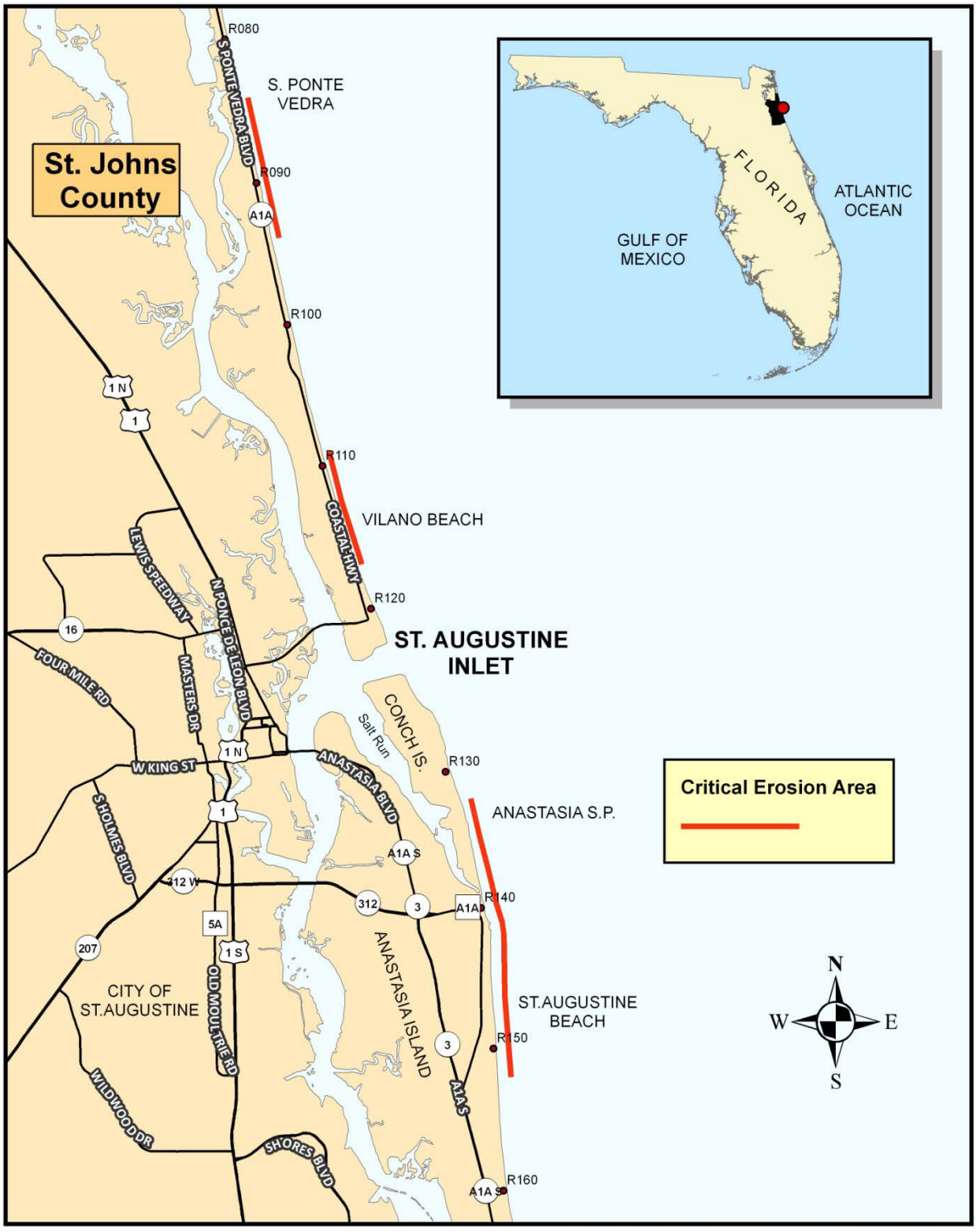

Figure 1. General Location Map

The Department's study was conducted under a contract with the Beaches and Shores Resource Center (BSRC), Florida State University, to compile new and historical data and information regarding coastal processes and inlet and shoreline dynamics, as reported in *Inlet Management Restudy for St. Augustine Inlet, St. Johns County, Florida* (Walton et al, 2011). Additionally, the U.S. Army Corps of Engineers (Jacksonville District), developed a regional sediment budget for St. Augustine Inlet and St. Johns County for the 11-year period between 1998/99 and 2010 (USACE, 2012).

These studies, as well as other referenced analyses, have been evaluated by the staff of the Department as it relates to statutory responsibilities and program objectives. As a result of that evaluation, the Department has developed a recommended inlet management plan to meet those responsibilities and objectives. Adoption of the plan will facilitate and streamline the coastal construction permitting process during its implementation by providing a basis for consistency determination, and enable the responsible entities to seek financial assistance from the Department for the conduct of management activities authorized in the plan.

The Department conducted two technical workshops on November 30, 2011 and February 22, 2012, to foster the development of an updated inlet management plan. The workshops were attended by representatives of the U.S. Army Corps of Engineers (Jacksonville District), the U.S. Fish and Wildlife Service, the Florida Inland Navigation District, the Florida Park Service (Anastasia State Park), St. Johns County, the St. Augustine Port, Waterway, and Beach District, the South Ponte Vedra – Vilano Beach Restoration Association, and other interested parties. The Department also presented a draft plan to the St. Augustine Port, Waterway, and Beach District on March 19, 2013, at their regularly scheduled District Board meeting.

Statutory Responsibilities and Program Objectives

In 2008, the Florida Legislature amended Section 161.142, Florida Statutes, finding,

> "It is in the public interest to replicate the natural drift of sand which is interrupted or altered by inlets to be replaced and for each level of government to undertake all reasonable efforts to maximize inlet sand bypassing to ensure that beach-quality sand is placed on adjacent eroding beaches. Such activities cannot make up for the historical sand deficits caused by inlets but shall be designed to balance the sediment budget of the inlet and adjacent beaches and extend the life of proximate beach-restoration projects so that periodic nourishment is needed less frequently."

Pursuant to 161.143, Florida Statutes,

> "Studies, projects and activities for the purpose of mitigating the erosive effects of inlets and balancing the sediment budget on the inlet and adjacent beaches must be supported by separately approved inlet management plans or inlet components of the statewide comprehensive beach management plan."

The Department, with the assistance of university based resources, may conduct inlet management studies consistent with Subsections 161.142(7) and 161.143(4), Florida Statutes,

> "to determine, calculate, refine and achieve general consensus regarding net annual transport volumes to be used for the purpose of planning and prioritizing inlet management projects."

The St. Augustine Port, Waterway and Beach District is the local sponsor of the federally-authorized St. Augustine Inlet Navigation Project (Figure 2), and in partnership with the U.S. Army Corps of Engineers, they are the entities responsible for maintenance dredging, and consequently, mitigating the extent of erosion caused by the inlet, as specified in Subsection 161.142(6), Florida Statutes.

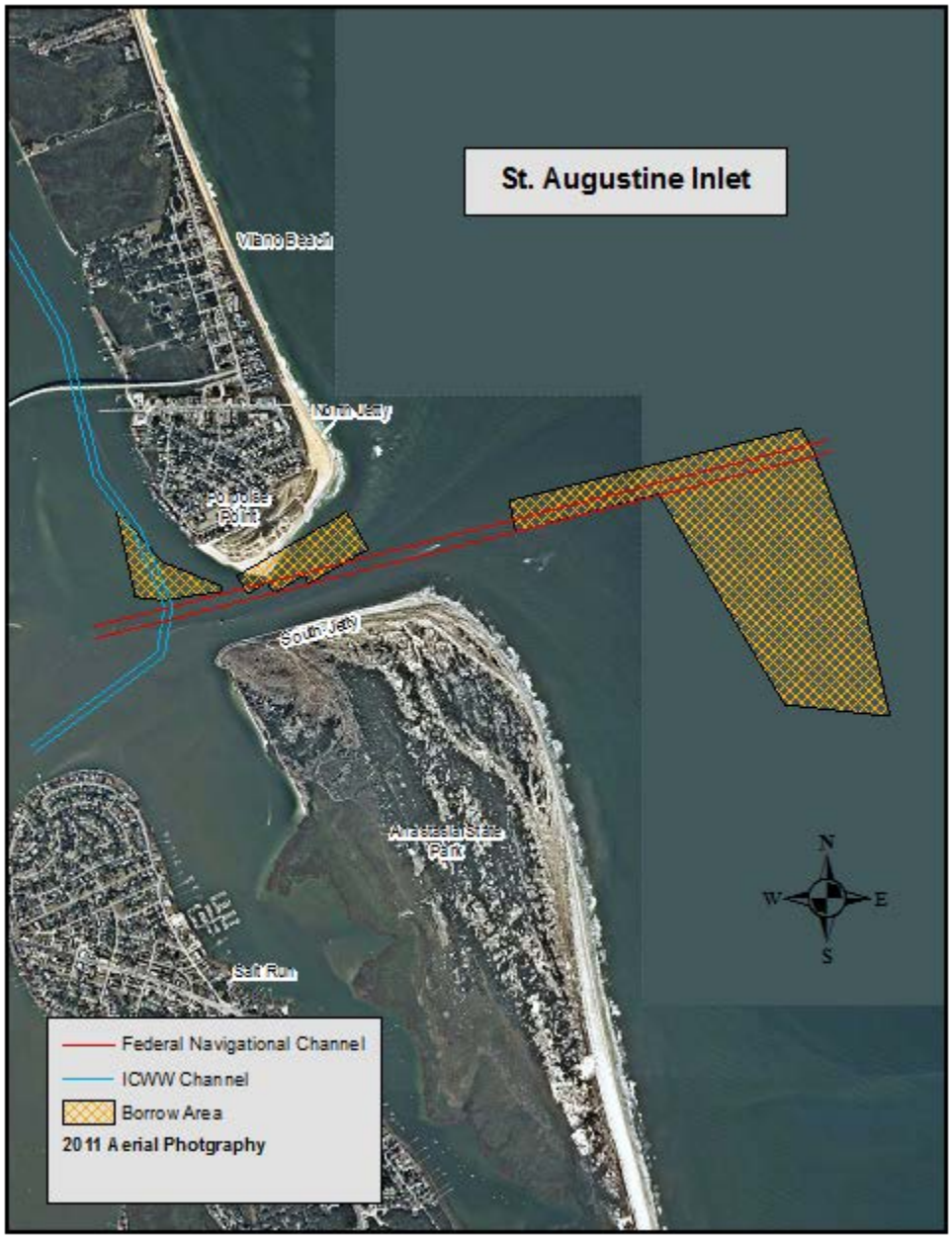

Figure 2. St. Augustine Inlet with Federal Project Dredging Areas

History of St. Augustine Inlet

St. Augustine Inlet is located on the northeast coast of Florida about 35 miles south of the St. Johns River Entrance at Jacksonville (Figure 1). Historical origins of the once natural tidal inlet adjacent to the city of St. Augustine are not clear; however, a natural inlet has existed throughout modern history since the founding of the Spanish colonial city in the early 1500s. The tidal inlet connects the Atlantic Ocean with an estuarine system of lagoons and tidal creeks, and is subject to a semi-diurnal (twice-daily) tidal regime. The dominant tidal lagoons that connect to the inlet are the Tolomato River extending northward and the Matanzas River extending to the south. Aligned generally northwest to southeast, the original natural inlet channel exists today as a connecting lagoon separating Conch Island from Anastasia Island south of the existing inlet.

In 1940, the U.S. Army Corps of Engineers dredged a new east to west channel through the barrier island at a location over two miles north of the natural inlet (Figure 3). In 1941, a short north jetty was constructed at Vilano Point north of the new channel. Described as a terminal groin in the Corps of Engineers' design documents, the boulder mound structure stabilized the Atlantic Ocean shoreline immediately to the north yet allowed substantial sand transport into the inlet, which has created the large land mass south of the jetty (terminal groin) known as Porpoise Point.

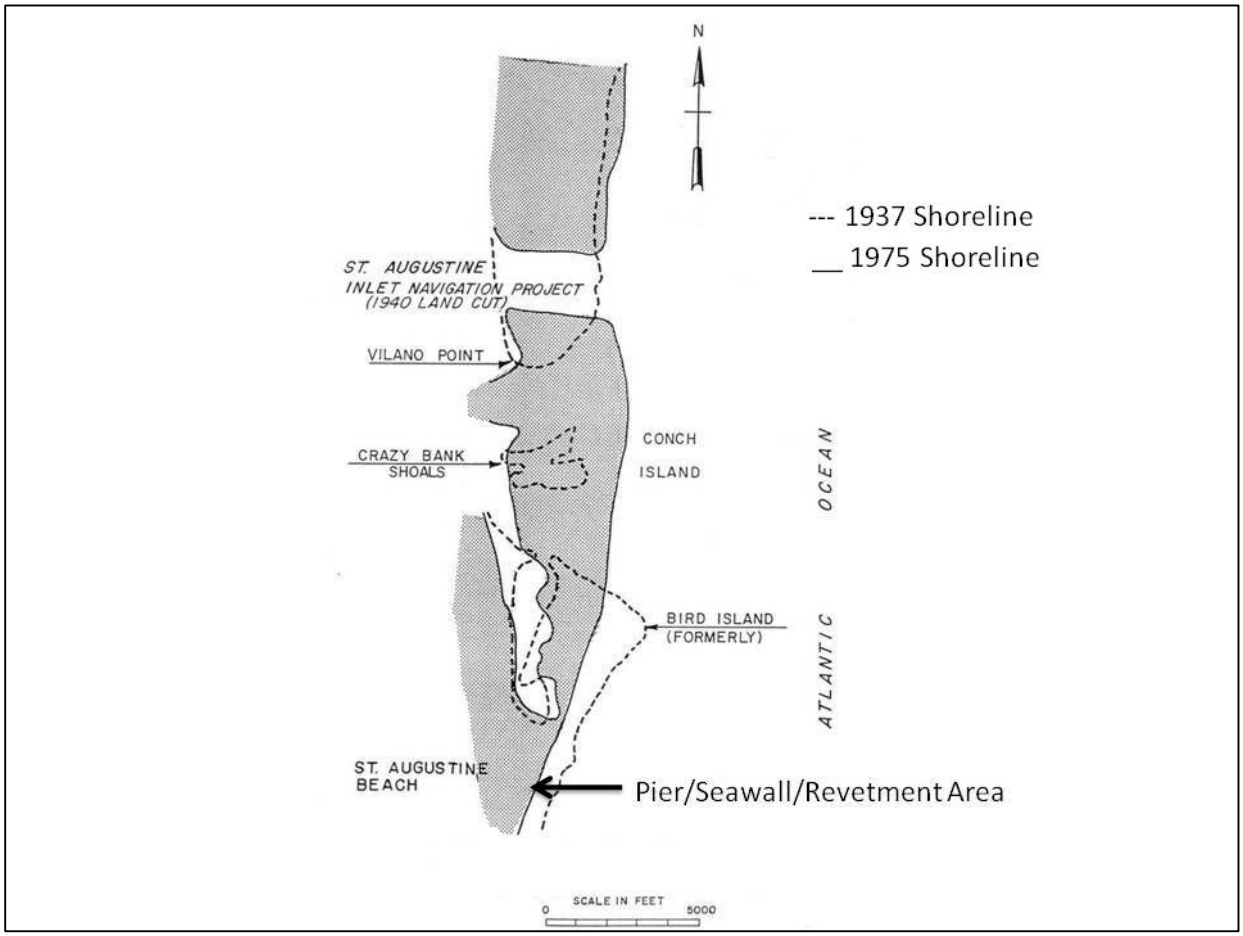

Figure 3. Historical Shoreline Reconfiguration (USACE, 1979)

During the 1940's, the severed land mass that was south of the new inlet channel merged with the intertidal shoals of the original natural inlet. This created what is now called Conch Island, which includes the ocean shoreline of the Anastasia State Park. The old inlet closed at its southern terminus leaving the lagoon now called Salt Run.

In 1957, the USACE constructed a south jetty along the north shoreline of Conch Island. Today, the authorized federal channel is 200 feet wide to a depth of -16 feet Mean Low Water (MLW). The inlet's throat, or narrowest section of the inlet, is roughly 1,000 feet wide (Photo 1). With continued southward transport of sand into the inlet through the north jetty causing growth of Porpoise Point, a portion of the inlet channel is being pushed southward against the south jetty.

Photo 1. Looking East across St. Augustine Inlet with Porpoise Point to the left (2006)

Between 1940 and 1986, 1,373,000 cubic yards of sand was dredged to maintain the federal navigation channel at the inlet with offshore disposal of the dredged material. In 1996, 170,000 cubic yards of maintenance dredging material was placed on the beaches to the south adjacent to the city of St. Augustine Beach.

There are currently two designated critically eroded beach segments north of St. Augustine Inlet located between R84 and R94 (South Ponte Vedra Beach) and between R109 and R117 (Vilano Beach). There is currently one designated critically eroded beach segment to the south of the inlet between R132 and R152 (Anastasia State Park and St. Augustine Beach). In the future, areas currently not listed may become designated critically eroded or areas currently designated critical may lose that designation and become delisted.

During the 1980s, a federal beach erosion control study was conducted for St. Johns County and determined that the navigation channel and inlet relocation had a negative impact on beaches to the south (USACE, 1991). The federally authorized St. Johns County Shore Protection Project, located south of the inlet between R137 and R150, was reauthorized in 1999 to include mitigation of the effects of the navigation project. Beach restoration was initially conducted in 2003 with the placement of 4.2 million cubic yards of sand between R132 and R151 (a length of 3.8 miles). Material was obtained from the inlet's active ebb tidal shoal and channel. In 2005, following the impact of the 2004 hurricane season, an additional 2.8 million cubic yards of sand was dredged from the channel and ebb shoal, and placed between R137 and R151 (2.9 miles). Again in 2012, an additional 2.2 million cubic yards of sand was dredged from the navigation channel, the south lobe of the ebb shoal, and the inner harbor shoal borrow area adjacent Porpoise Point, and placed between R139 and R147. Roughly one fourth of the total material dredged, or 564,000 cubic yards, was obtained from the south lobe of the inlet ebb shoal.

Study Summaries

A number of studies have been conducted through the years to develop an estimate of the longshore sediment transport along the littoral system in the vicinity of St. Augustine Inlet [Walton, 1973; USACE, 1979; Fields et al., 1988; USACE, 1991; Taylor Engineering, 1996; PBS&J, 2009; Walton et al., 2011; and USACE, 2012].

In the study conducted by the Beaches and Shores Resource Center for the Department, Walton et al (2011) developed a new estimate of longshore sediment transport using the Littoral Drift Rose (LDR) concept and three recent hindcast model wave information sets, plus 2009 bathymetric data, and updated current and tidal prism data. A sediment budget was developed for three cells between R100-R122 (north of inlet), R122-R124 (the inlet), and R124-R156 (south of inlet). The updated sediment budget presented the net longshore transport to the south.

Walton et al (2011) recommended discontinuing further dredging of the north lobe of the inlet's ebb shoal, because such activity would cause a reduction in natural bypassing of inlet sediment. Along with limiting dredging of the ebb shoal borrow area that is immediately south of the channel, the study recommends than an area of relic shoal further to the south be developed as a potential future borrow source (Figure 4).

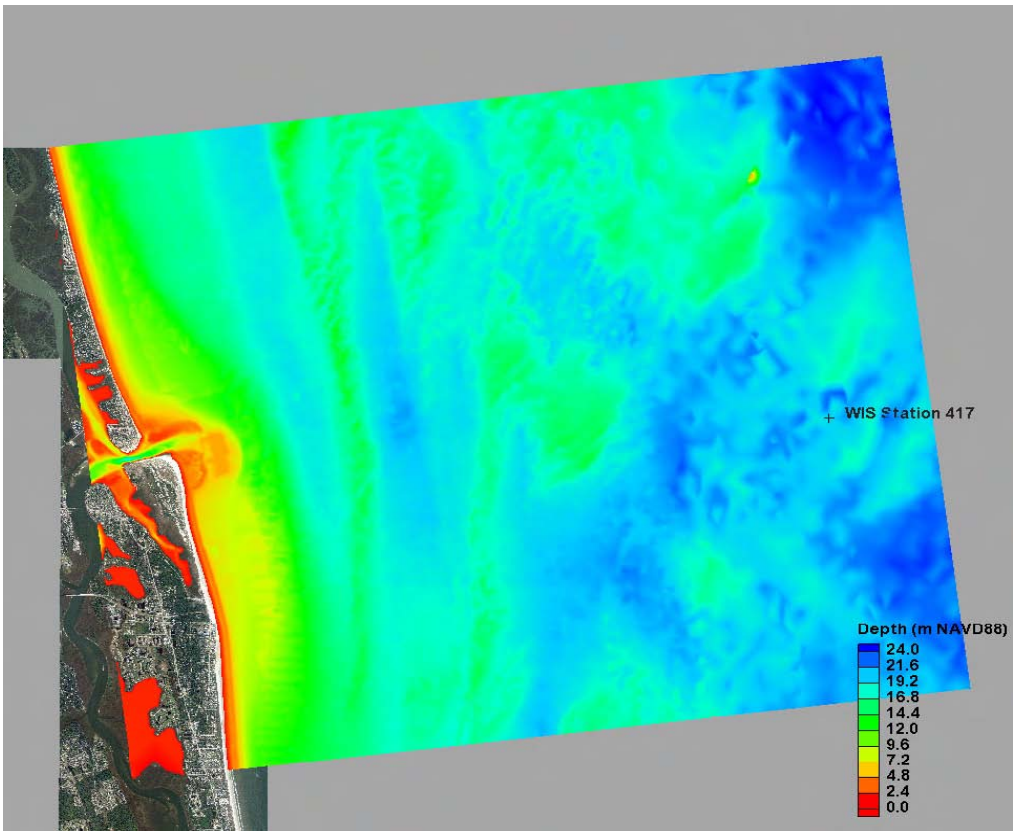

Figure 4. 2007 Offshore Bathymetry (PBS&J, 2009)

Bathymetric survey data for the ebb tidal shoal is available for 1998 and 2010. These surveys were compared to create a morphologic change map, as shown in Figure 5.

In the latest study, USACE (2012) compared beach profile data for 1999 and 2010, and analyzed volume changes using the Regional Morphology Analysis Program. The sand fill placement volumes for 2000 through 2005 were accounted for, and Figure 6 presents the volume changes with and without the beach nourishment volumes.

The USACE (2012) conducted an Inlet Sink Analysis by evaluating the historic shoreline changes and the inlet's sink effect. This analysis first assesses the inlet's littoral impact within the inlet, and identifies the shoreline lengths of inlet impact. Results of this analysis 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.

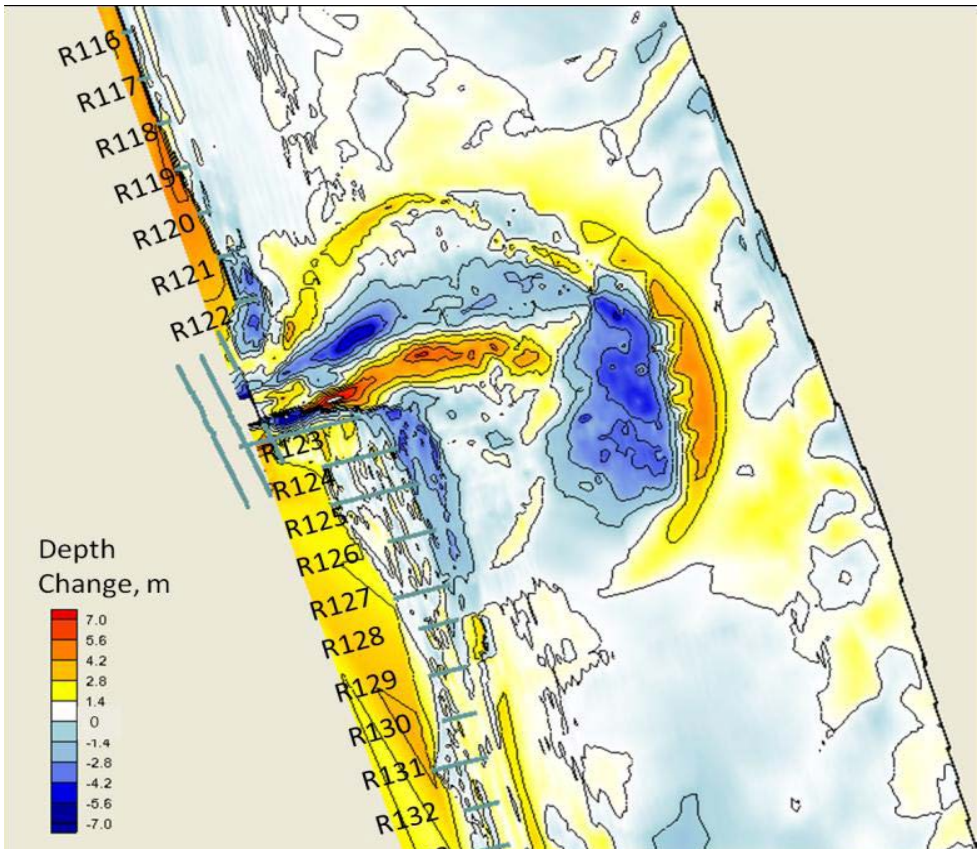

Figure 5. Ebb Shoal Bathymetric Change, 1998 – 2010 (USACE, 2012)

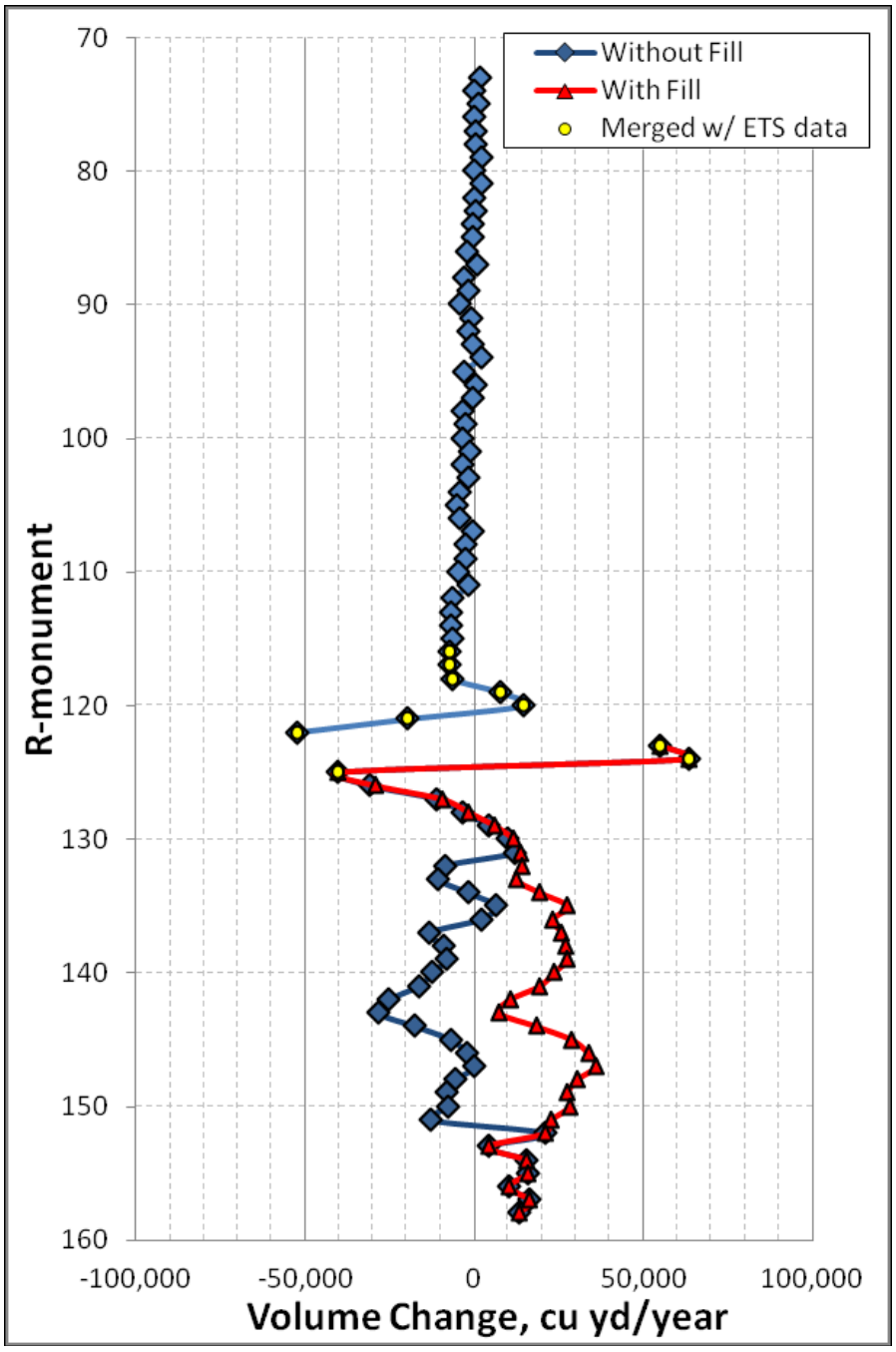

Figure 6. Beach profile volume rate of change between 1999 and 2010 with and without beach fill (USACE, 2012).

Recommended Inlet Management Plan

The Department staff recommends the following implementation plan be adopted to meet the requirements of Chapter 161, Florida Statutes. Future inlet management activities shall be consistent with the following eight strategies.

1) Continue to transfer sediment from the inlet system to the adjacent beaches meeting an annualized bypassing objective of 278,000 cubic yards per year as determined by the Inlet Sink Analysis provided in the document, *Regional Sediment Budget for St. Augustine Inlet and St. Johns County, FL, 1998/1999-2010* (USACE, 2012). The material obtained from the inlet system shall be distributed to the adjacent Atlantic Ocean fronting beaches with a placement ratio of approximately one-third of material placement to the north and two-thirds of material placement to the south.
2) Inlet sand transfer material shall be placed in designated critically eroded areas to the north or south of the inlet between R84 and R152, St. Johns County, in accordance with Implementation Strategy #1.
3) Inlet dredge material may be obtained from the federal navigation channel, the intracoastal waterway channel, the south lobe of the ebb shoal and flood shoals adjacent to the federal channel, including the Porpoise Point borrow area, for placement in accordance with Implementation Strategies #1 and #2.
4) The south lobe of the ebb shoal and the federal navigation channel, including below the authorized project depth may be used as the primary sources of sand for the St. Johns County Shore Protection Project in an amount not to exceed 179,000 cubic yards per year times the number of years between beach nourishment events. However, additional material may be removed from the authorized navigation channel when necessary for required interim navigation channel maintenance dredging.
5) Engineering and geotechnical investigations shall be conducted of additional borrow areas to meet the inlet bypassing objective. These investigations shall identify the beach quality and quantity of material available, as well as any potential dredging impact on the inlet system or adjacent beaches.
6) Feasibility investigations may be conducted of the north jetty to determine the beach management benefits and impacts of possible jetty modifications, including but not limited to sand tightening, lengthening, and raising elevations. The impact evaluation shall specifically identify any physical impact to the inlet system or adjacent beaches including Anastasia State Park.
7) A comprehensive beach and inlet hydrographic monitoring program shall be implemented to evaluate performance and impact of existing projects and to update the inlet sediment budget. The monitoring program shall include topographic and bathymetric profile surveys at each of the Department's reference monuments between R80 and R157, and along the Porpoise Point spit. Monitoring shall also include bathymetric surveys of the inlet system, including the inlet flood shoal complex and the entire ebb shoal between not less than R116 and R132, as well as the navigation channels and the navigation easement adjacent to and including the shoreline of the Porpoise Point spit.
8) The inlet sand bypassing objective in Implementation Strategy #1 may be updated following a review and analysis of additional monitoring data collected over at least a five (5) year period. The updated inlet sand bypassing objective shall not become

effective less than two (2) years prior to a scheduled beach nourishment of the shore-protection project in order to allow adequate time for project planning and design.

Implementation Discussion

Implementation Strategy #1
A future sediment budget is dependent upon meteorological conditions and the resulting wave climate, which cannot be predicted with any reasonable accuracy. The most practical means of determining a sand placement protocol is to utilize the most recent volumetric change data for the beaches adjacent to the inlet. The Inlet Sink Analysis provided in the document, *Regional Sediment Budget for St. Augustine Inlet and St. Johns County, FL, 1998/1999-2010* (USACE, 2012) provides this data and is the basis for the adopted sediment budget. The updated sand placement protocol is based upon this adopted sediment budget, which includes the two-thirds to the south and the one-third to the north split in inlet dredge material placement on the adjacent beaches.

Implementation Strategy #2
Priorities at the time of fill placement will be those areas designated as a critically eroded beach at the time of the inlet dredging project. Various placement methodologies, including hydraulic pipeline and truck-haul, may be conducted. Hydraulic fill placement from the navigation channels and encroaching shoals may be the most feasible means to nourish Vilano Beach during an interim maintenance dredging event. Truck haul projects from a Porpoise Point borrow area may be the most feasible method to nourish South Ponte Vedra Beach. Nothing in this plan precludes a methodology that might be more cost effective or less impactive to environmental resources.

Implementation Strategy #3
Figure 2 shows the existing federal channels and borrow areas where the impoundment of the coastal littoral sediment occurs. The justification of bypassing the sediment from any combination of the identified channels or borrow areas is to achieve the inlet management plan strategies of #1 and #2. Beach compatible material would be placed on the beach in designated critically eroded areas.

Implementation Strategy #4
In accordance with Section 161.142, Florida Statutes, the inlet bypassing activities should be designed to extend the life of the St. Johns County Shore Protection Project. Consequently, the maintenance dredging of the inlet should be conducted in conjunction with beach nourishment of the shore protection project. The intent of this strategy is to not over-dredge the inlet's ebb shoal. Walton et al (2011) specifically recommended against dredging of the north lobe of the inlet's ebb shoal. At this time, limited dredging within the designated federal borrow area on the south lobe of the ebb shoal appears to be recoverable for the time period between nourishment events while combining it with the channel maintenance projects. However, it is likewise understood that maintenance of the federal navigation channel may require exceeding the 179,000 cubic yard per year limitation, so this implementation strategy allows that additional channel dredging when necessary.

Implementation Strategy #5
Likely sources of inlet bypassing material include additional portions of Porpoise Point and inlet flood tidal shoals west of the inlet, which has the potential to assist the bypassing requirement to the north. Walton et al (2011) recommended investigating the relic ebb shoal located between the inlet's active ebb shoal and the St. Johns County Pier as a supplemental sand source for the shore protection project not intended to meet the bypassing requirement to the south. The dredged material from the federal navigation project and approved ebb shoal borrow area shall be the primary source of fill material for the shore protection project.

Implementation Strategy #6
Walton et al (2011) likewise recommended investigating the north jetty (terminal groin), specifically to sand tighten and raise it two feet. The purpose of these structural modifications would be to increase stability of beaches north of the inlet. Vilano Beach would likely be the only beneficiary of these changes, which would probably not extend as far north as South Ponte Vedra Beach. Such structural modifications, including any lengthening, would have to be carefully evaluated so as not to have any adverse impacts such as disrupting natural bypassing at the inlet. Impacts to the beaches both north and south of the inlet would have to be evaluated.

Implementation Strategy #7
A comprehensive beach and inlet hydrographic monitoring program is the most important element to managing the future sediment budget at St. Augustine Inlet. Topographic and bathymetric surveys provide the most reliable data to estimate the volumetric impact of the inlet and to establish a placement protocol that complies with the statutory mandate of Section 161.142, Florida Statutes. At present, surveys conducted for the shore protection project will provide monitoring data for inlet management.

Implementation Strategy #8
It is understood that the sediment budget will vary somewhat over time and that the total volume and/or the proportion of fill placement may need to be modified from that adopted in Implementation Strategy #1. It is not appropriate to modify the fill placement protocol as a result of the impact of major storms or short term influences. A minimum period of five years of data, obtained in Implementation Strategy #7, is selected as necessary to represent the latest trend in inlet sediment processes.

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