

## **2013 WEDA Environmental Excellence Award Nomination**

### **Nominee:**

Ms. Jacqueline (Jackie) Keiser, Chief, Coastal/Navigation Section Jacksonville District, U.S. Army Corps of Engineers and her Jacksonville District team for developing innovative solutions for maintenance dredging on a large scale that has led to significant navigation and environmental benefits in the state of Florida, while at the same time increasing efficiencies and saving several tens of millions of federal dollars. Ms. Keiser and her team have adopted an innovative approach that integrates the traditional Navigation projects with surrounding Shore Protection Projects (SPP). While this nomination focuses on three specific projects in northeast Florida, Ms. Keiser has applied this integrated concept throughout the state of Florida on a variety of projects to include deep and shallow draft, high and low commercial use, SPP, and work for others (U.S. Navy).

### **Project Summary:**

The integrated approach looks to maximize placement of beach material on from federal navigation channels in two ways. The first method looks to place all beach compatible material from the navigation channel onto the surrounding down drift beach. This work would be associated with the routine navigation program; however, the placement provides material to SPP that may not be funded and would otherwise be critically eroded. The second method considers our navigation channels as a borrow source. This allows the SPP a closer and more cost effective borrow source than traditional sources, while at the same time clearing the channel in many cases well beyond authorized navigation depths and reducing future maintenance cycles.

Three Navigation/SPP projects in northeast Florida have recently been completed that highlight Ms. Keiser's efforts. The first project is Kings Bay/Fernandina and Nassau Co SPP. Kings Bay is a deep draft, low commercial port that has recently received no Corps Federal funding; however, the Navy provides 100% of the funding to dredge the channel. The placement of material from the navigation channel coincides with the Nassau County SPP. Approximately 400KCY of sand is placed on the beach annually and has resulted in a greatly reduced renourishment requirement for the Nassau County SPP. This has resulted in an estimated \$36M savings to the SPP as well as considerable savings to the non-Federal sponsor at Nassau County.

The second project is another example of the navigation channel providing benefits to a SPP. The Jacksonville (Jax) Harbor and Duval County SPP are located approximately 25 miles to the south of the previous project. Jax Harbor project is a deep draft, high use port that has received Corps Federal funding; however, the same process is used to supply material to the Duval County SPP. The navigation channel provides approximately 30% of the material needed to renourishment the beach. This has translated into an estimated savings of \$31M to the SPP.

The final project is an example of how the SPP can benefit the navigation channel. The St. Augustine Inlet and St. John's County SPP are located approximately 35 miles to the south of Jax Harbor. St. Augustine is a deep draft, low use projects that receive little to no Corps federal funding. The St. John's County SPP was a funded project however the offshore borrow site for the project was surrounded with controversy. Ms. Keiser's team was able to identify alternate borrow sources that happened to coincide with the existing navigation channel for St. Augustine Inlet. In order to get the needed quantity of material, the team explored removing material below the authorized channel. This proved to be an acceptable plan. The outer entrance channel was dredged to a final depth of -32.5' where it is currently only authorized to -16'. The balance of the material needed was removed from the ebb shoal. Ultimately, this provided for completion of the SPP, and removal of dangerous shoals within the nav channel, and the dismissal of a law suit regarding the previous borrow area. This translated into approximately \$13M of savings to the navigation program.

### **Project Team:**

Ms. Jacqueline (Jackie) Keiser, Chief, Coastal/Navigation Section Jacksonville District, U.S. Army Corps of Engineers – Oversees all dredging for all navigation and SPP within the Jacksonville District. Ms. Keiser challenges her staff on a continual basis to incorporate the integrated approach that she has helped to develop and perfect. Ms. Keiser is a member of WEDA. Along with Ms. Keiser's team below, her supervisor, Mr. Jerry Scarborough, has provided the overall support to needed to execute such an integrated and elaborate concept successfully.

#### Kings Bay/Fernandina and Nassau Co SPP

Project Manager: Jessica Weatherby

Technical Lead: Jim Lagrone

Contractor: Great Lakes Dredge & Dock Company

#### Jacksonville (Jax) Harbor and Duval County SPP

Project Manager: Steve Ross

Technical Lead: Tom Martin

Contractor: Weeks Marine

#### St. Augustine Inlet and St. John's County SPP

Project Manager: Jackie Keiser/Shelley Trulock

Technical Lead: Jason Engle

RSM Study Lead: Matt Schrader

Contractor: Marinex

Nominating Entity: Dylan Davis, South Atlantic Division Navigation Program Manager

**Environmental Benefits:**

There are several environmental benefits that have result from Ms. Keiser’s integrated approach to navigation and SPP. The first and the most significant benefit being that millions of cubic yards of natural sediments residing in navigation channels have been returned to the beaches. The state of Florida has the highest sea turtle nesting habitat of any state. Because of Ms. Keiser and her team’s efforts, the more than 125 miles of Federal SPP that Jacksonville manages are postured to be available for sea turtle nesting habitat for 3 species of endangered sea turtles even in the face of fiscal constraints.

This action also supports Regional Sediment Management (RSM) principles by not “wasting” or “removing from the system” beach quality sand with ocean placement or upland placement. Ms. Keiser has developed a program that maximizes the amount of sand back to the system (beach) and supports RSM.

By taking an integrated approach, Ms. Keiser is also reducing the number of actual dredging events and in turn, reducing the number of potential environmental impacts associated with dredging. Navigation channels have historically been dredged separately from SPP and therefore require two separate events. This approach packages everything into one dredging event.

Ms. Keiser has also achieved the environmental benefit by reducing the need to use offshore borrow sites for SPP by identifying channels that can be dredged to deeper than authorized depths to obtain the needed material for the SPP. Even approved sites are usually surrounded with environmental resources and limiting their use is generally preferred by both the federal resource agencies and the general public. Likewise the need for offshore disposal site capacity and upland disposal capacity has been greatly reduced providing for great fiscal and environmental benefit.

**Innovation:**

While the concept of using beaches for placement of material from navigation channels is not unique, the use of the navigation channels as borrow sources below authorized depth is not common and the magnitude at which Ms. Keiser is implementing the integrated approach is remarkable. She has effectively aligned two major missions within the Corps of engineers that have efficiently worked together to provided significant benefits to both missions.

**Economic Benefits:**

The economic benefits associated with Ms. Keiser's efforts are significant. For the specific projects that have been identified in this nomination there is an individual savings of at least \$3M-\$5M per event; however, when the overall project is considered, the economic saving is close to \$100M in northeast Florida alone. Expanding this throughout Florida, which Ms. Keiser has done, the savings are staggering.

**Transferability:**

This concept can be applied to projects with beach quality sediments that have good proximity to the navigation channel and SPP. It also requires individuals to change the way business has been historically done. While Ms. Keiser has developed a program that runs smoothly, it took a lot of early coordination to allow for these two programs to be aligned. Trying to align the programs at the last minute is problematic, but if Corps Districts or stakeholders are committed to this approach early it can be implemented successfully.

**Outreach and Education:**

Ms Keiser is extensively involved in outreach and education both as a part of her job and as a volunteer. She recently briefed this concept of integrated dredging to a non-Federal group on Amelia Island. She also recently participated in interviews and filming with an international (Discovery Channel) film crew in coordination with a Great Lakes job and discussed this approach to sediment management. In addition to the multiple presentations Ms. Keiser gives each year to professional organizations she also volunteers as a member of the University of South Florida Professional Advisory Committee where she has worked to develop the Geology graduate program, taught as a guest lecturer and mentors students and young professionals.

**Other:**

While this nomination outlines specific projects with environmental benefits that on their own are significant, Ms. Keiser's has implemented this approach throughout the entire District. She is seeing these environmental benefits year after year across a variety of projects. By maximizing the Corps limited funding, she is able to provide environmental benefits that otherwise may never been achieved.



# Integrated Dredging Program Northeast Florida

## Kings Bay/Fernandina - Nassau Co SPP

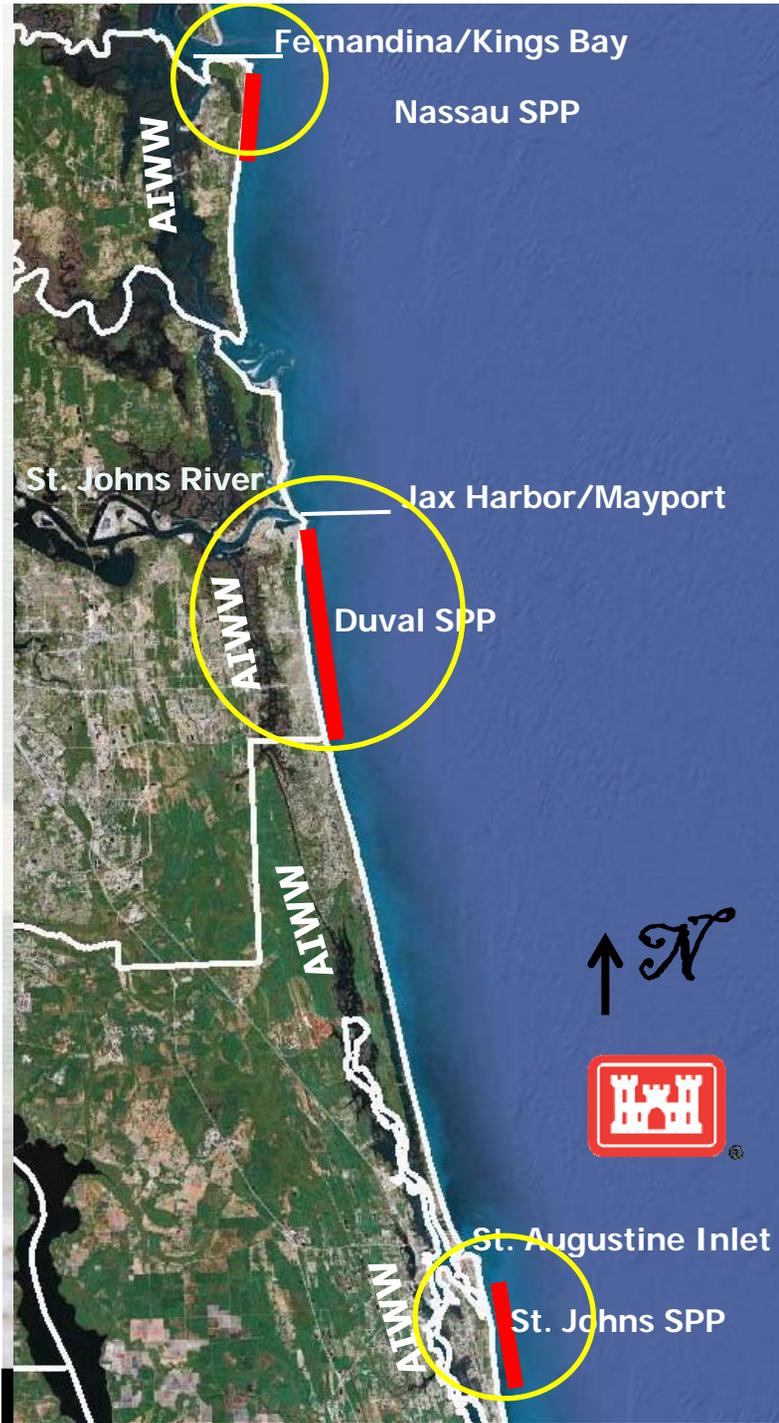
70% Of all the sand placed on the beach  
has come from the channel

## Jax Harbor/Mayport ----- Duval Co SPP

30% of beach sediments are attributable to  
the O&M program

## St Augustine Inlet/IWW -- St Johns SPP

80% Nav dredging from SPP



# Benefits

- **Environmental Benefits**
  - Return beach quality sediment to the beach
  - Provide nesting habitat for sea turtles
  - Minimize borrow/disposal impacts
  - Minimize dredge impacts
- **Technical Benefits**
  - Optimize sediment management
- **Operational Benefits**
  - Conserve capacity in Upland/ODMDS
  - Conserve scarce offshore sand sources
  - Advanced maintenance opportunities
- **Institutional Benefits**
  - Execute with dwindling funds
  - Stakeholder relationships

