

# NEW JERSEY INTRACOASTAL WATERWAY STATUS UPDATE

**Monica Chasten**  
Project Manager

**Tim Kelly**  
Deputy Chief

**U.S. Army Corps of Engineers**  
Philadelphia District,  
Operations Division



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**US Army Corps  
of Engineers®**



Dredge Fullerton working off of Mordecai Island, NJ for navigation and island restoration



New Jersey Intracoastal Waterway Maintenance Dredging with Sturgeon Island Beneficial Use Placement



# NJ INTRACOASTAL WATERWAY

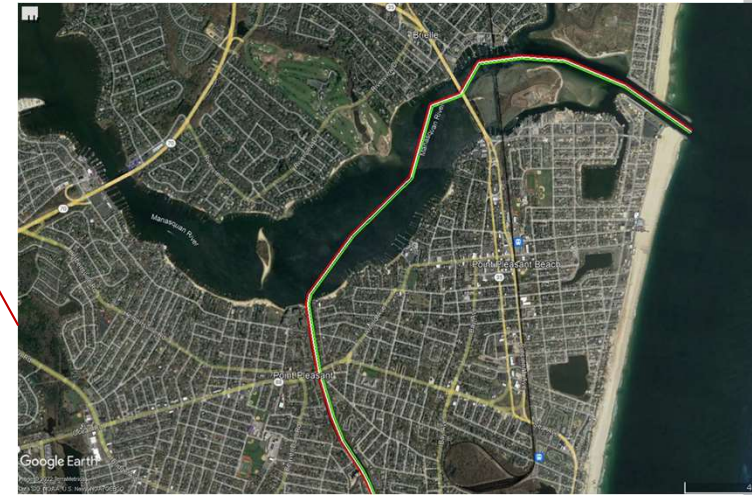
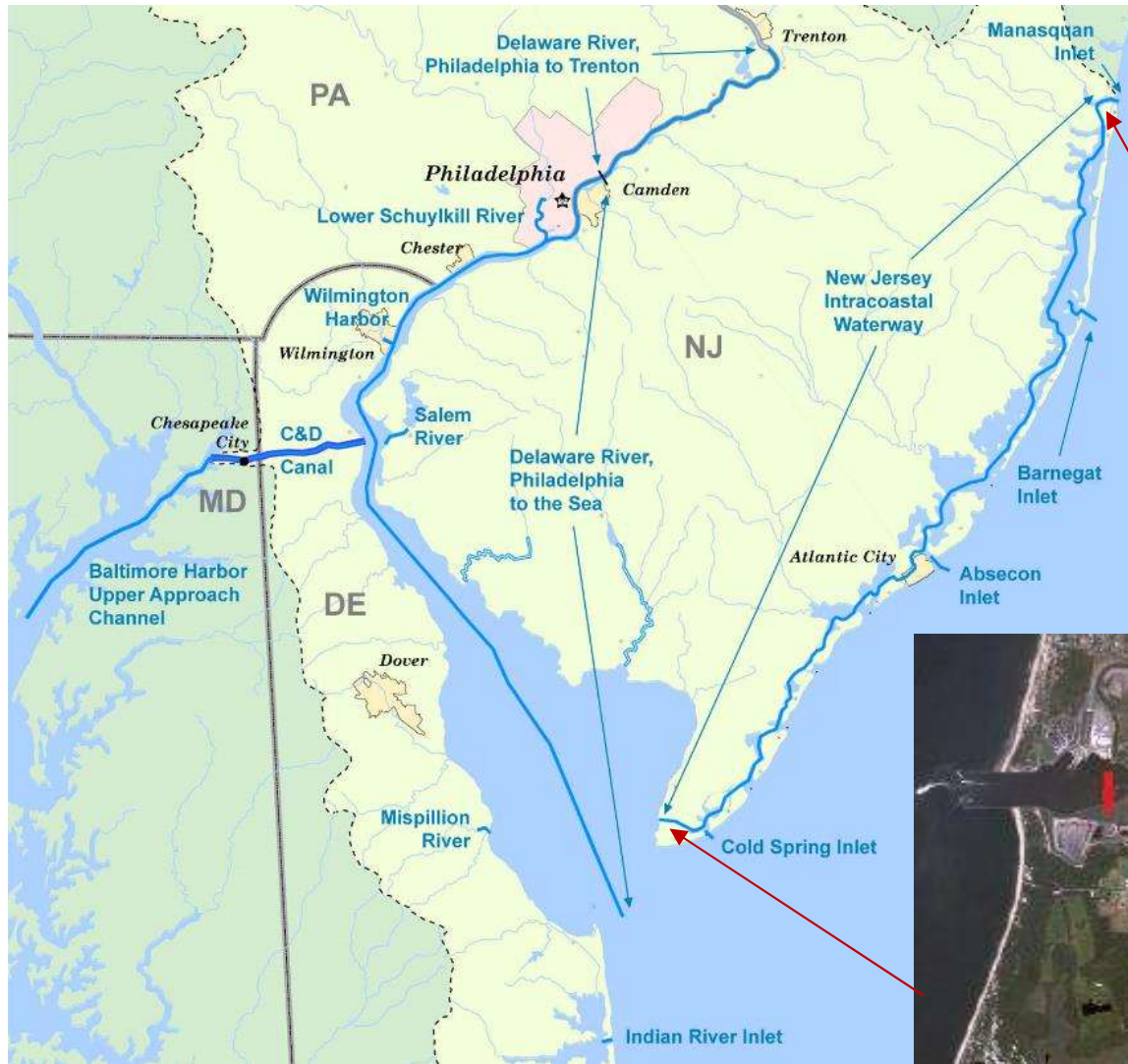
## PHILADELPHIA DISTRICT



- Adopted/authorized as a federal project in **1939**
- **117 miles** long from Manasquan Inlet to Cape May
- Authorization
  - Depth **6 ft MLLW & 100 ft wide**
  - South of Ottens Harbor authorized depth is **12 ft MLW**
  - **Location can vary to accommodate naturally deep water**
- Includes the Cape May Canal and Point Pleasant Canal and 2 USACE owned Confined Disposal Facilities; State of NJ responsible for remainder of placement areas
- Project provides safe navigation for:
  - Cape May Lewes Ferry (Delaware River and Bay Authority)
  - Commercial fishing industry including the 9th most valuable commercial fishing fleet in the U.S. (Cape May/Wildwood)
  - 9 U.S. Coast Guard Stations including Cape May training base, ATON
  - Recreation



# USACE Philadelphia District Navigation Mission



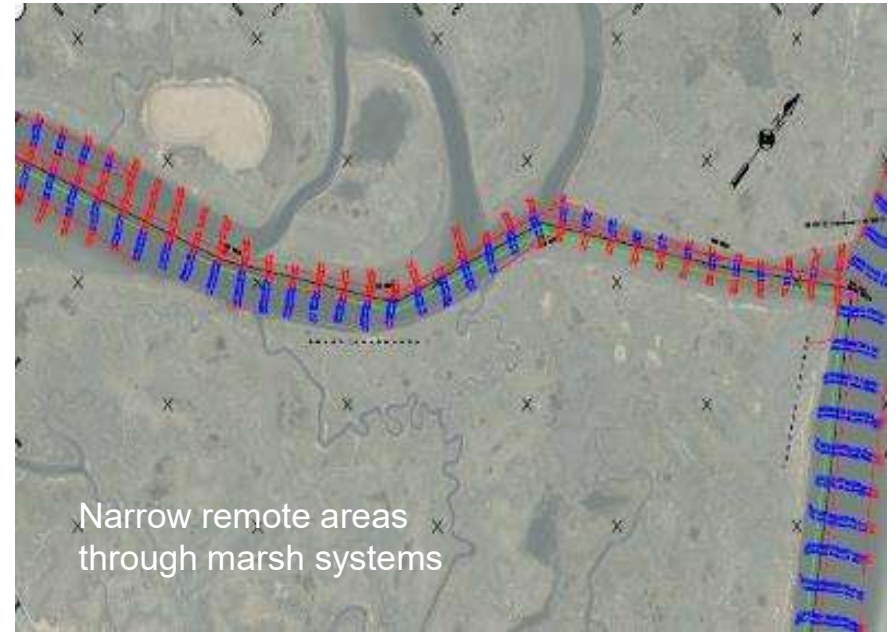
Maintain federal channels, including the Delaware River & Bay, coastal channels through 4 tidal inlets and the 117-mile New Jersey Intracoastal Waterway



# NJIWW Maintenance Dredging Typical Back Bay Locations



Seven Mile Island



Narrow remote areas  
through marsh systems



Narrow urban areas



Expansive areas  
through back bays



# NJ Intracoastal Waterway

## FY 22/23/24 Funding



**FY 12 Funds:** ZERO (OMB Low Use Budget Cuts)

**FY 11-13 Funds:** Hurricanes Irene and Sandy Supplementals

**FY 22 O&M Funds:** \$985,000 (dredge ferry)

**FY 22 BIL Funds:** \$14,350,000 (dredging, CDF, structures & shoreline)

**FY 23 O&M Funds:** \$1,060,000 (dredge ferry & surveys)

**FY 23 BIL Funds:** \$150,000 (Murden at ferry entrance)

**FY 24 O&M Funds:** \$2,852,000 (dredge ferry, build CDF capacity, surveys )

**FY 24 BIL Funds:** \$7,429,000 (Manasquan to Absecon & Absecon to Cape May, dredge Cape May Ferry)

**Typical Acquisition Strategy:** IFB, typically Small Business Set Aside; “Time-Measured” vs. CY vs. Hybrid; Small Pipeline and now Govt Dredges

**Project Sponsor:** O&M, 100% Federal, State of NJ Required to provide Placement Areas except for Cape May area



# USCG FY20 Statement Regarding NJIWW Critical Shoals



Siltation of federalized channel has led to reduction in depth of water which has rendered it *impossible for afloat CG operational assets to conduct their mission*. CG vessels are unable to travel from their homeport to some/all of their areas of responsibility to conduct Congressionally mandated missions. *Impacts will include failure to maintain fixed & floating aids to navigation* and inability to depart homeport to conduct marine safety, environmental response, search and rescue, and law enforcement operations.

## THE COAST GUARD NEEDS YOUR INPUT!

### THE NEW JERSEY WATERWAY ANALYSIS AND MANAGEMENT SYSTEM (WAMS) PUBLIC SURVEY IS NOW AVAILABLE.

THE RESULTS OF THIS SURVEY WILL HELP DETERMINE THE  
TYPES OF VESSELS AND NECESSARY AIDS TO NAVIGATION FOR  
THE NEW JERSEY INTRACOASTAL WATERWAY.

SUBMIT COMPLETED FORMS BY NOVEMBER 23, 2021

VISIT:

[HTTPS://HOMEPORT.USCG.MIL/MY-HOMEPORT/COAST-GUARD-PREVENTION/WATERWAY-  
MANAGEMENT?COTPID=40](https://homeport.uscg.mil/my-homeport/coast-guard-prevention/waterway-management?COTPID=40)

AND SELECT "NJ WAMS Survey" to complete the form.

OR SCAN THE QR CODE BELOW:



# A Sediment Progression: From Confinement To Natural Infrastructure





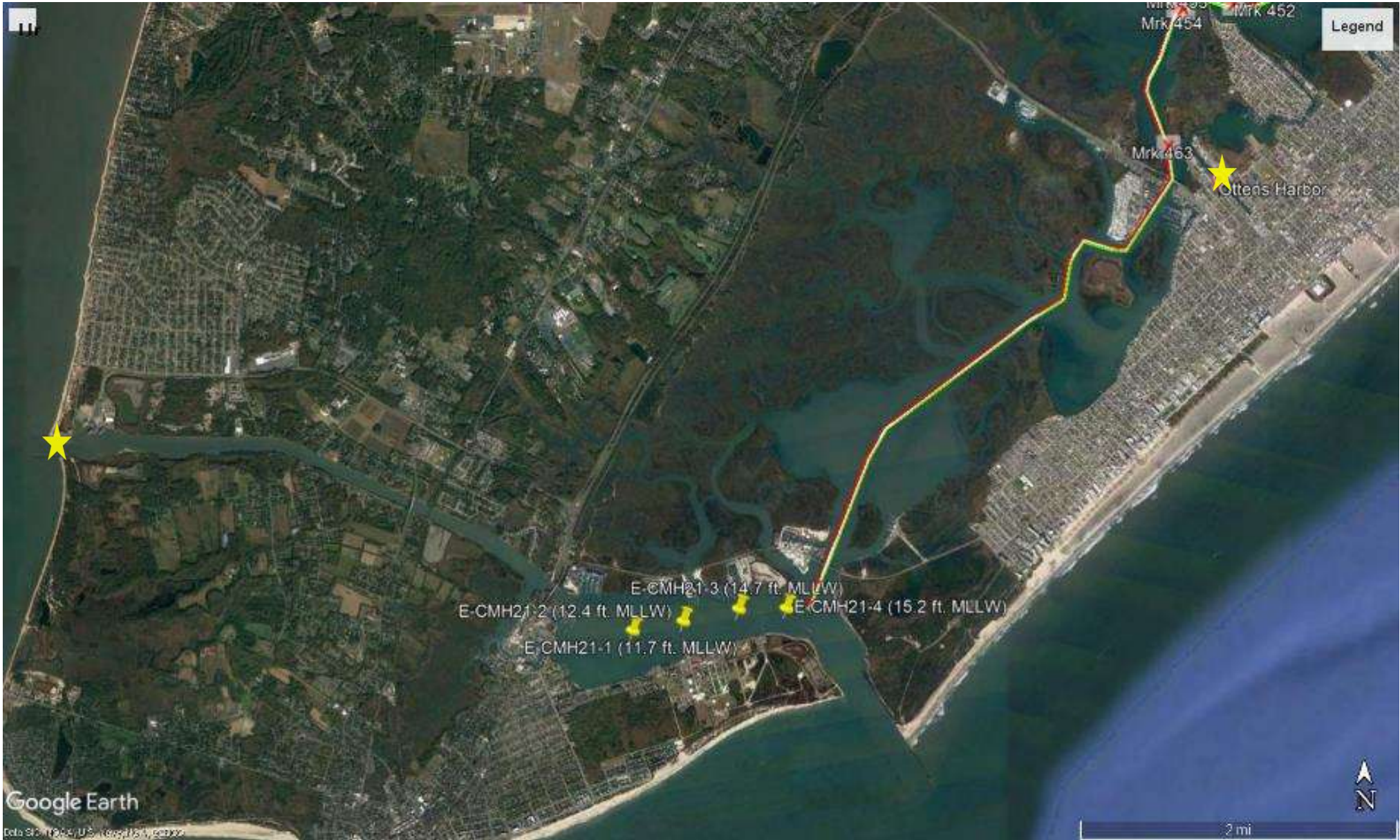
## **New Jersey Intracoastal Waterway:**

**Clearing the Waterway for USCG Urgency,  
Bipartisan Infrastructure Law Funding,  
and Seven Mile Island Innovation Lab Updates**





# NJIWW From Cape May Ferry to Ottens Harbor USCG Sledge Transit in April 2023 & Future Challenges

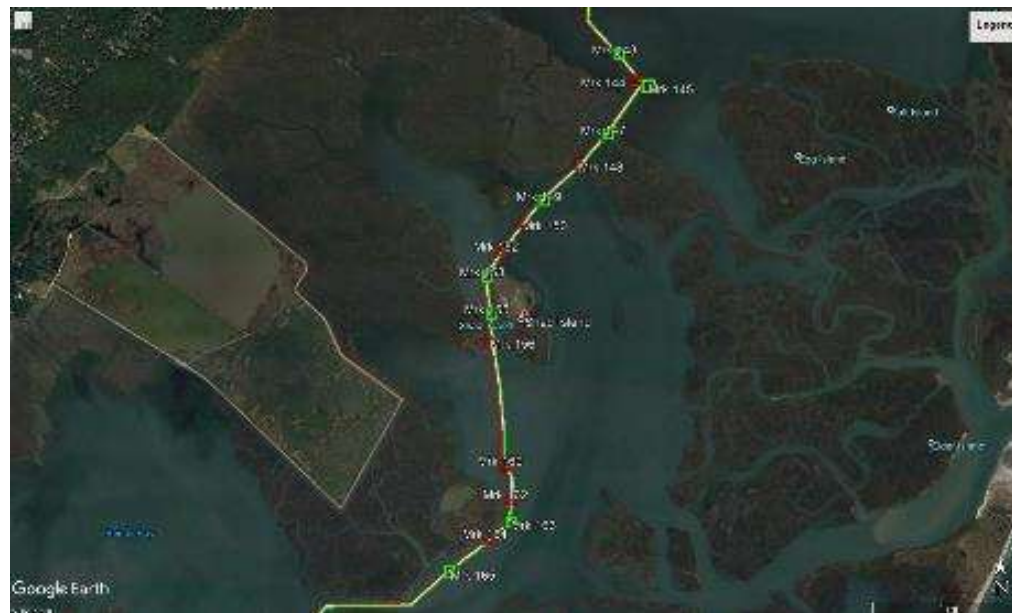




# NJIWW Critical Shoals from Manasquan to Atlantic City (Northern Portion)



NJIWW Markers	Action
#58 to #75	Updating survey, may be non-issue for dredging
#128 to #132:	Potentially no dredging need if markers relocated by CG (DONE), still treacherous
#155 to #160A:	No immediate need, but narrow stretch & could widen with Dredge Merritt to marsh restoration or contract dredge (approx. 5,000 cy with placement in USFWS Refuge impoundment for salt marsh sparrow habitat)





# NJIWW Critical Shoals from Atlantic City to Cape May (Southern Portion)



NJIWW Markers	Action
#206 to #209	5,000 cy to dredge, congressional interest for potential placement at Bader Field
#213 to 221	10,000 cy, potential Merritt?
#233 to #246	20,000 cy, potential Merritt or other BU?
#346 to #348	18,000 cy BBD contract to NJDOT CDF (Completed Jul 2022, expect every 5 yrs)
#384 to #395 (Football Field thru SMIL)	Govt Dredge Merritt PILOT successfully conducted in Sept 2023. Reach clear for first time since 90s but narrow and tracking shoaling rate
#419 to #427	System of Solutions approach! 30,000 cy to marsh restoration/habitat creation/edge protection by contract and Merritt in 2023/24.
#449 to #457 and #465 to #472	20,000 cy critical to clear and/or relocate markers
Cape May Canal	10,000 cy between Ferry and Rutgers Facility (cleared in 2023 to CDF, but pursuing BUDM for future)
Cape May Ferry Channel	Annually 40,000 cu yd (5,000 cy BU via Murden/Merritt and remainder to USACE CDF with potential for BUDM at CDF on Corps property)

**Less than 150,000 cu yd Total Remains!**



# NJ Intracoastal Waterway



## Maintenance Dredging Contracts

- Contract acquisition strategy issues in 2021 after 48 years, major setback for dredging and beneficial use, currently working contract acquisition strategies with NAD/HQ
- **Awarded cu-yd based contracts in Feb 2022 and Sept 2023**
- 2022 & 2023 contract work removing critical NJIWW shoals at:
  - Cape May Lewes Ferry channel (to Higbee CDF)
  - Cape May Harbor (to Railroad CDF)
  - Oyster Creek/Barnegat (to 1122 island creation)
  - NJIWW near Sea Isle City (Mrk 346 to 348, to Ludlam CDF)
  - NJIWW near Avalon (Mrk 386 to 388, to Sturgeon Island marsh)
  - NJIWW near Stone Harbor (Mrk 419 to 427)
- **Advertising new contract with base & options in August 2024 to clear remaining backlog shoals and annual O&M with BIL funds**
- **Pursuing permits for more use of Dredge Merritt along NJIWW**



# NJ Intracoastal Waterway & Adjacent Waterways Upcoming Contract



**LOCATION:** Ocean, Atlantic and Cape May Counties, NJ

**DREDGE TYPE:** Pipeline

**PLACEMENT:** Beneficial Use and Upland CDF

**QUANTITY:** ~200,000 CY (multiple locations, along 117 mile waterway)

**DEPTH:** 6/12' + Allowable OD

**BUSINESS TYPE:** Set aside

**ADVERTISE:** AUG 24

**AWARD:** OCT 2024

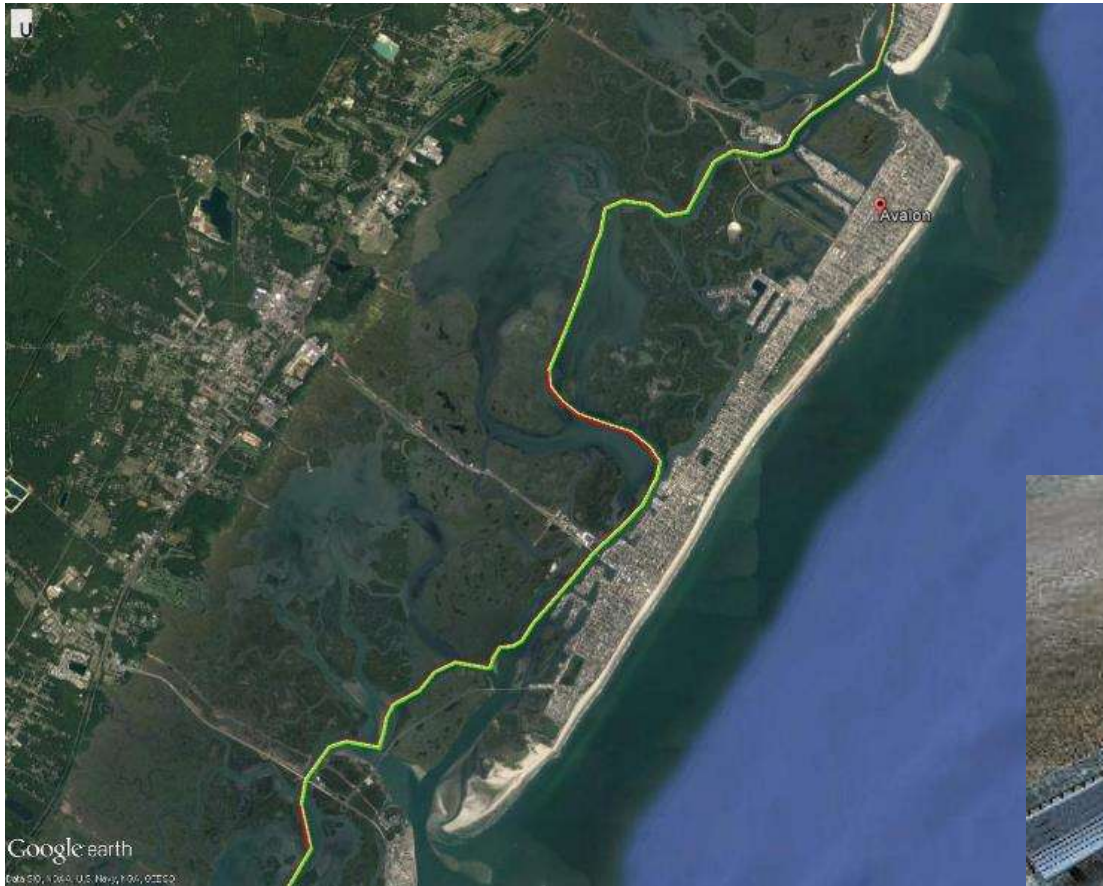
**COMMENCE:** NOV 2024

**ENVIRONMENTAL RESTRICTIONS:** Varies with location





# Seven Mile Island Innovation Laboratory



**US Army Corps  
of Engineers®**



# Seven Mile Island Innovation Lab Background

- Established in 2019 as partnership between USACE, NJDEP and TWI
- A Proving Ground using Natural and Nature-Based Features to provide ecological uplift and enhanced resilience for ecosystems and coastal communities
- A Test Bed to advance and improve dredging techniques and marsh restoration and coastal feature creation techniques in coastal New Jersey
- 24 sq mi Back Bay Marsh Dominated System with shallow bays, sounds and tidal inlets bisected by the NJ Intracoastal Waterway
- 50+ Member Working Group for knowledge sharing
- More than 30 Scientists Working in SMIL
- Publications, presentations, fact sheets shared on TWI and USACE Websites



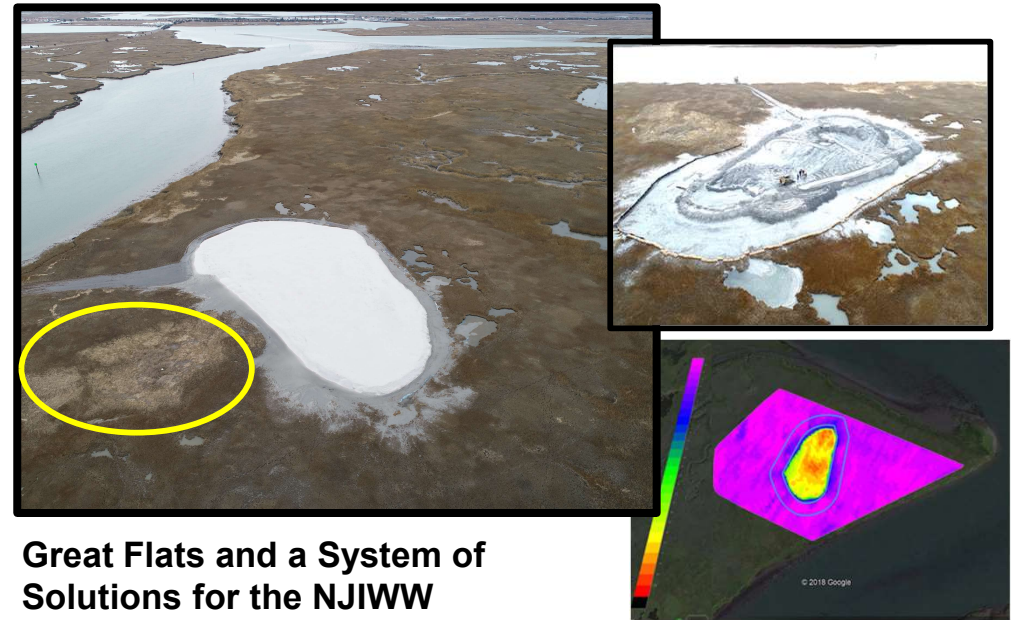


# Advancing Dredging & Placement Techniques in SMILL

## Learning from the Past, Innovating Now and Evolving to the Future



The Original Pilots & Beyond



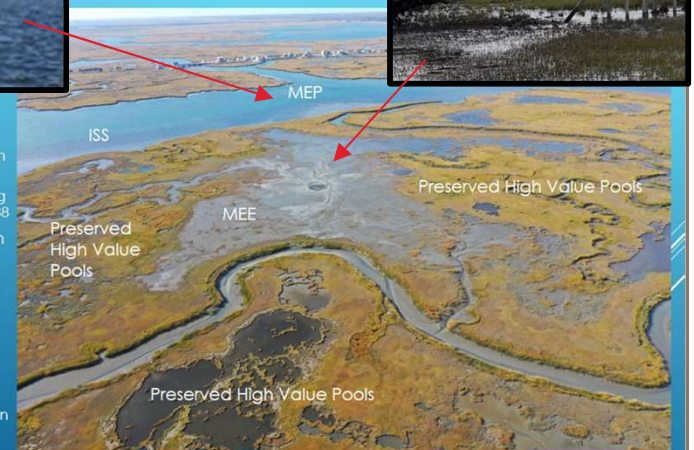
Taking it to the Next Level at Gull and Sturgeon Islands



Landscape Approach at Gull Island, RSM/EWN!



- ▶ Marsh Elevation Enhancement (MEE)
  - ▶ 21 acres of elevation lift
  - ▶ 3.9' NAVD88 grading down to 1.8' NAVD88
- ▶ Marsh Edge Protection (MEP)
  - ▶ Built to marsh edge (2.0' NAVD88) grading down to MLLW
- ▶ Enhanced Intertidal Shallows (ISS)
  - ▶ Shallowed up to MLLW along southern island flank



INITIAL ASSESSMENT GULL ISLAND PROJECTS

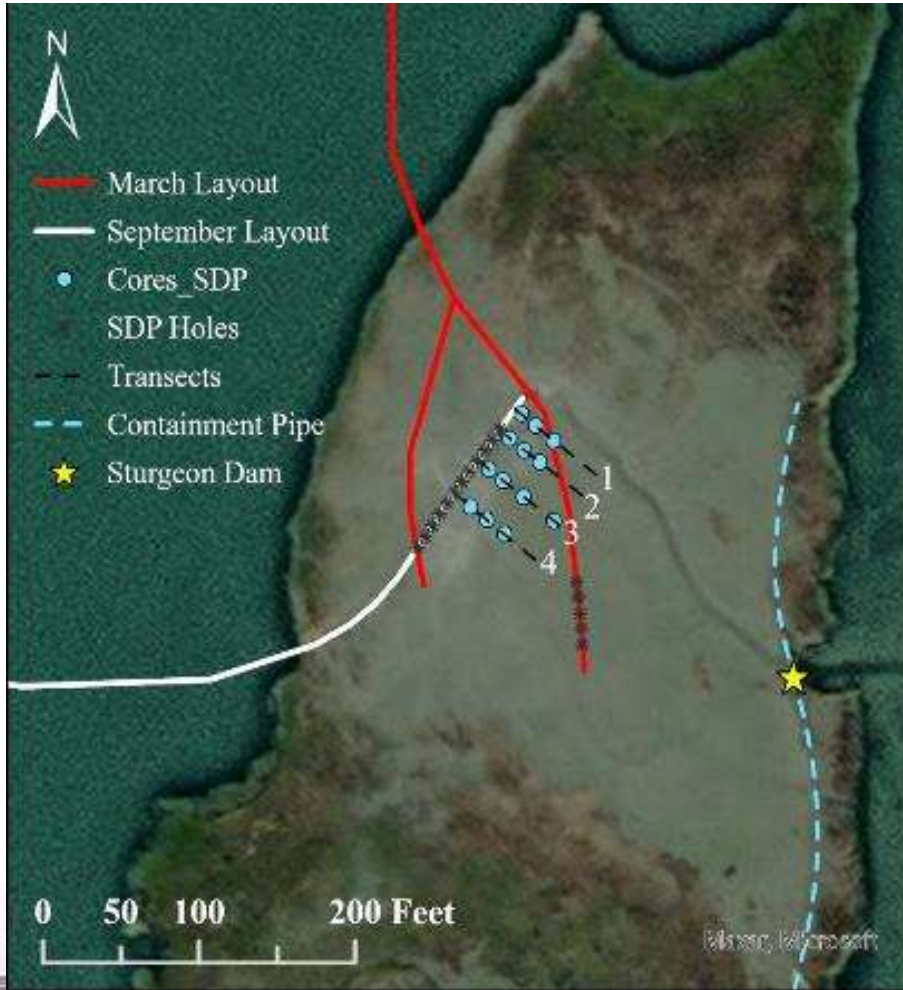




# Partnering and Advancing Techniques on Sturgeon



## Elevation Enhancement, Marsh Edge Protection and Intertidal Shallows





# Sturgeon Island Phase 3: Fall 2022



Placed fine sand and silts to create marsh edge protection features

Used containment to elevate 0.4 acre for elevated bird nesting habitat

- Placed more than 3 ft of material
- Built to 4.0 ft NAVD88

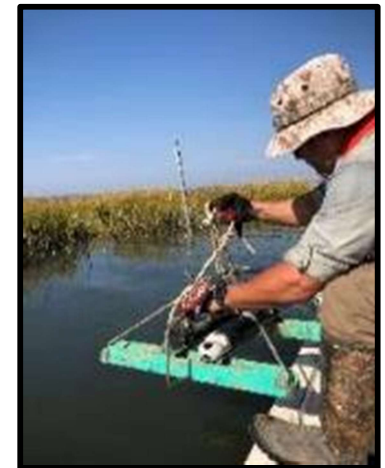
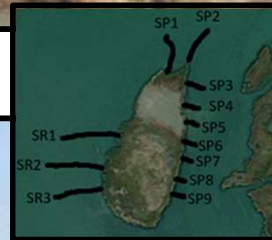
Employed Y-valve to switch between containment and subtidal features

- Maintain dredging efficiency
- Allow time for contained area to dewater
- Slow and manage flow volumes and velocities





# Importance of Monitoring & Research in SMIL USACE, State of NJ, TWI, UPENN, BC and Others





# Monitoring & Research in the Seven Mile Island Innovation Lab



Marsh Vegetation Surveys	ERDC: Piercy/Russ
Hydrodynamic and Suspended Sediment within the SMIL	ERDC: ERDC/CHL TR-21-9, Fall, Perkey, Tyler and Welp
Gull-Sturgeon Turbidity	ERDC: Fall, et al., 2022, WEDA Journal of Dredging, Volume 20, No. 1
Sediment Distribution Pipe: Sturgeon-Gull	ERDC: Beardsley, et al., WEDA Journal of Dredging, Volume 20, No. 1
Sturgeon/Gull Sediments/Consolidation	ERDC: Tyler/Harris
GCM Observations & Model Development	ERDC: Perkey/Fall
Sediment/Vegetation Interactions	ERDC: J. Smith/Ramirez
Vessel Wake Impacts on Marshes	ERDC: Priestas/Styles/Bain
Macroalgae/Benthic Surveys	ERDC: Altman/Balazik/Reine
Water Quality and Hydrodynamic Modeling	ERDC: Kim/Ding
Remote Sensing & EWN Landscape Architecture Applications	Univ of Pennsylvania: Burkholder & Van Der Sys
Monitoring and Adaptive Management of Elevated Nesting Habitats	The Wetlands Institute, NJ Fish & Wildlife
Monitoring and Adaptive Management of Gull and Sturgeon Islands	The Wetlands Institute, NJ Fish and Wildlife
Community Engagement Using Mental Modeling	ERDC: Thorne, et al., ERDC TR-22-12
Bathy/Topo/Currents/Sediments/Remote Sensing	USACE Philadelphia
Varied University Research	Univ of Penn, Boston College, Texas State, Louisiana State, Stevens, Univ of Washington, Stockton (Work Group)



# SMIL Overview References



- 37<sup>th</sup> International Conference on Coastal Engineering, December 2022, Sydney, Australia, Paper and Presentation, “Advancing Sediment Solutions in the Seven Mile Island Innovation Lab,” *in press*
- Coastal Sediments 2023, April 2023, New Orleans, Paper and Presentation, “Seven Mile Island Innovation Laboratory: Advancing Beneficial Use Practices to Support Coastal System Resilience,” *in press*
- *Additional Info and Fact Sheets:*  
<https://www.nap.usace.army.mil/Missions/Civil-Works/Coastal-Dredging-Beneficial-Use/>  
  
<https://wetlandsinstitute.org/smil/>



# Government Dredge Merritt in SMILL: Sept 2023 “Fertilizing the Garden”





# NJIWW Dredging & Scotch Bonnet Placement: 25,000 cy from Markers 424 to 427 in Fall/Winter 2024



Restoring low marsh for avian and terrapin habitats, use of coir logs & Y-valve, permitted for multiple lifts over time, complements larger NJDEP/TWI grant project

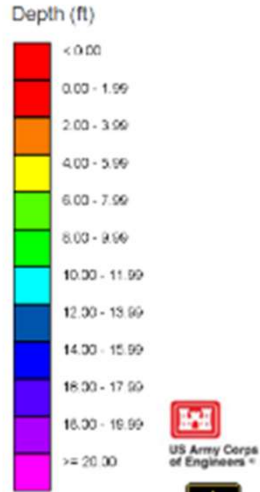
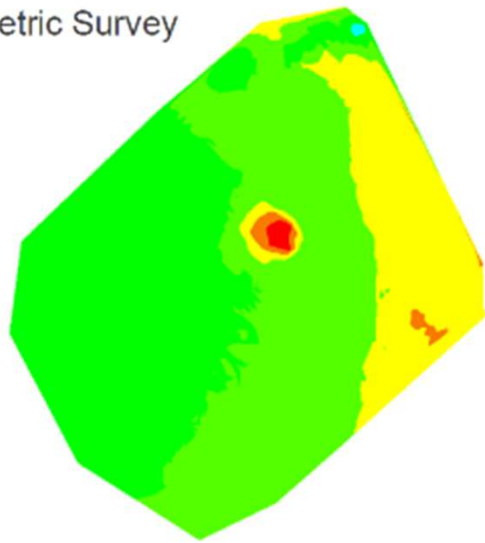


# Monitoring the New Island in Barnegat Bay and Developing Guidelines



DECEMBER 2022

Bathymetric Survey



12 11







# Maurice River Channel Dredging & Placement (NOW!) And TRUSTED Partnerships



Approximately 75,000 cubic yards of **90% silts** with BU in State Wildlife Management Area, clearing a channel that has only been dredged twice in 100 years

# Advancing Natural Infrastructure Approaches in the Philadelphia District

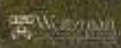


## Engineering With Nature<sup>®</sup> Four Coasts Philadelphia District

a report identifying design concepts for incorporating Engineering With Nature<sup>®</sup> approaches into the work of the Philadelphia District



EWN



DRAFT 03/29/2023



# Advancing Natural Infrastructure Approaches NJIWW Cape May Canal & CDF

1.60 TWT-PRODUCING CDF

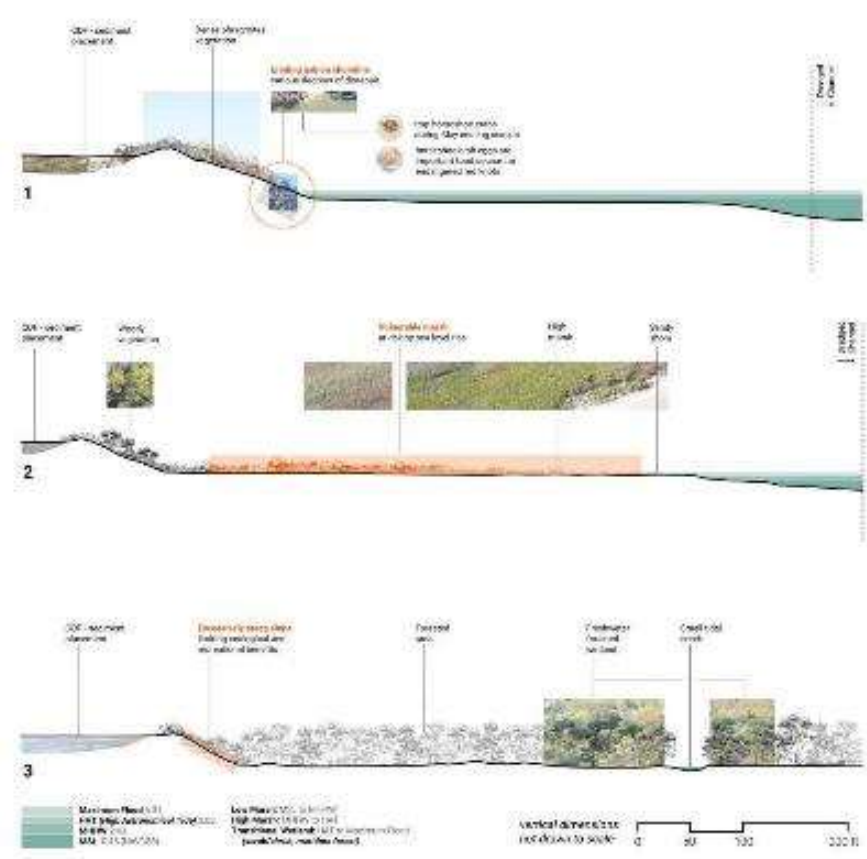
## 2 CAPE MAY CDF CONTEXT CURRENT CONDITIONS

The current configuration of the Cape May CDF facility consists of two cells that will be referred to as the eastern and western cell, both of which are currently fully operational and have been fully installed. The CDF was constructed to expand seawards, building upon the diked walls to accommodate the

new, for additional capacity. The increased height of the walls and erosion from the heavy waves backed by waves that continue to erode and changing sea level conditions. The natural shoreline erosion hazard consists of gullions, which are in a state of disrepair and, as such, are dangerous to egg-laying horseshoe crabs, which are an important food source. The adjacent intertidal zone is eroded and the loss of sediment has led to an increased sediment supply while the CDF could benefit from increased capacity and shoreline protection. The current conditions of the CDF and surrounding areas are more fully documented in the following plan view and cross-sectional diagrams.



Figure 2.1: Aerial map showing the context of the Cape May CDF. The map shows the CDF Placement Site, Highbee Beach Wildlife Management Area, and Small Tidal Creek. The map also shows the location of the CDF cells and the Cape May Canal.





# NJ Intracoastal Waterway



**Make It Easy, Less Costly and SUSTAINABLE!**

- Resources
- Contract Flexibility
- Minimize Engineering Designs and/or increase ability to Adaptively Manage
- More Collaboration and Construction Workshops that don't just train but exchange and innovate
- We need Agricultural and Dredging Industry!!



# CONTACT INFO



Monica Chasten  
Project Manager  
(215) 656-6683  
[Monica.A.Chasten@usace.army.mil](mailto:Monica.A.Chasten@usace.army.mil)