

***Engineering With Nature
Proving Ground -
Philadelphia***

**Monica Chasten
Operations Division
USACE, Philadelphia District
For
USACE LA Workshop
ERDC
July 25-27, 2017**



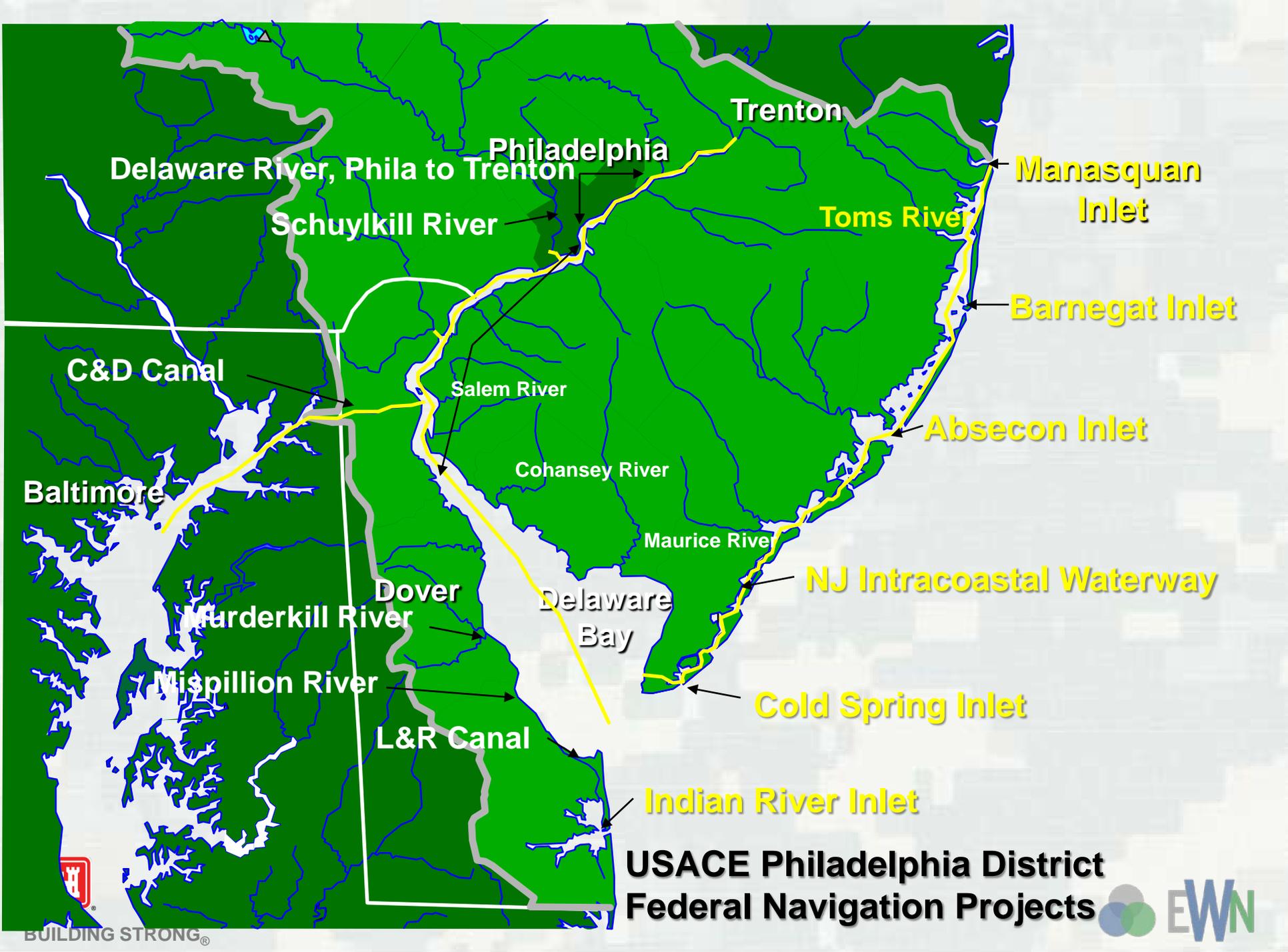
BUILDING STRONG®



Philadelphia District: Mission and Approach to Dredging

- ***Factors that Align Well with EWN Initiative***
 - ✓ Navigation mission: maintain federal channels in the Philadelphia District
 - ✓ Operations-based dredging seeks to keep the sediment in the natural system
 - ✓ Strong beach nourishment program





EWN Proving Grounds

- USACE Galveston, Buffalo, and Philadelphia Districts have agreed to serve as EWN "proving grounds" for district-wide implementation of principles and practices.
- Efforts included an implementation workshop with each district conducted by the EWN Leadership Team.
- At each workshop, participants shared information about EWN and ongoing projects, and worked in collaborative teams to identify opportunities to implement principles and practices in current and future district projects.



Philadelphia District (NAP) as EWN Proving Ground

The USACE EWN Leadership Team Conducted a successful 'proving ground' implementation workshop with the USACE Philadelphia District on 7-8 June 2016



BUILDING STRONG®



Current Projects

- Dredging of coastal inlets with USACE plant
- Post-Sandy actions to dredge federal channels and place beneficially to restore the system and build coastal resilience
 - Ring Island (August 2014)
 - Mordecai Island (November 2015)
 - Avalon (February 2016)
 - Barnegat Bay Placement Sites



Mordecai Island, Beach Haven, NJ



Mordecai Island CONSTRUCTED! November 2015



IDR
International Dredging Review

www.dredgemag.com

WEDA Gulf Coast Chapter Krispin Drain Habitat Restoration Final Tier 4 Regulations

MORDECAI ISLAND

and Beneficial Use along the NJIWW

SEP 17 11:26AM '15
US POSTAGE PAID
PERMIT NO. 5377
BANKGAT BAY PONDING CO INC
8101 BAYVIEW
HARVEY, TEXAS 77033-5939

SE P4
112688
JOSSEPH HILL SEP 17
ALTO (M)XED APC 900
PREST STD

JANUARY/FEBRUARY 2016 | VOL 35 NO 1



BUILDING STRONG®



Mordecai Island Plantings May 2016



Mordecai Island 9 months after construction



BUILDING STRONG®



Mordecai Island 9 months after construction



BUILDING STRONG®



Ring Island, Middle Township, NJ Constructed August 2014

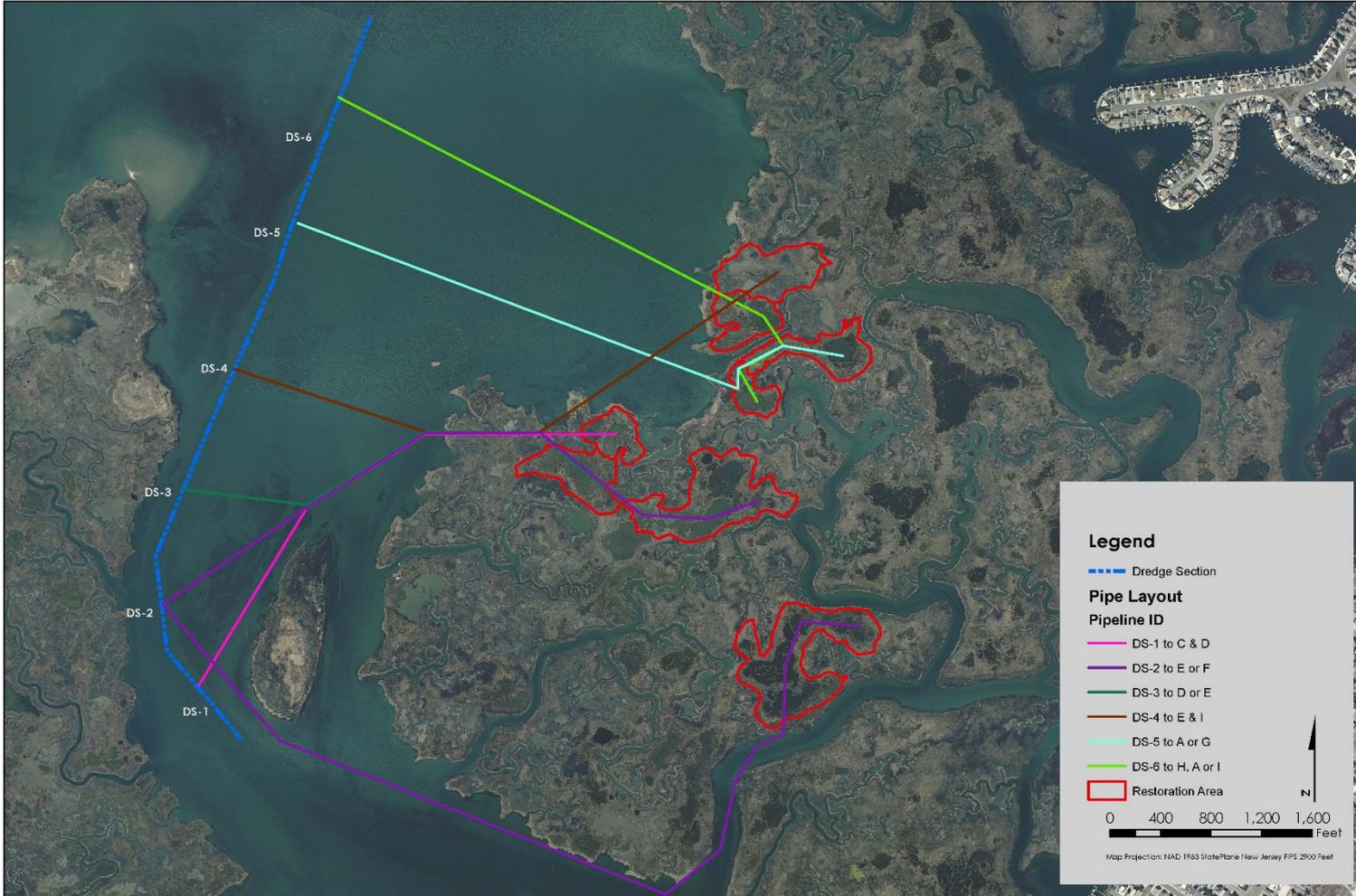


BUILDING STRONG®



NJIWW Dredging & Avalon Placement Thin Layer Placement Project Constructed Nov 2015 to Feb 2016

File: P:\13651\Project\1560046_Avalon\075\1\MOD\15015\02\Drawings_Map_Trim_RTE.mxd, 10/26/2016, Drawn by: A. Klein, Copyright Princeton Hydro, LLC.



THIN LAYER DREDGE
PIPE LAYOUT CONFIGURATION
Avalon, New Jersey

PRINCETON HYDRO, LLC.
1188 OLD YORK ROAD
P.O. BOX 720
MIDDLETOWN, NJ 08841
PH



BUILDING STRONG®



NJIWW Avalon Pilot Project: Dredging “The Football Field” and Thin-layer Placement

- Pilot Project constructed Dec 2014
- Small thin layer placement demo with fine-grained material and filled pools and pannes to restore marsh
- Larger project continued from Nov 2015 to Feb 2016 (approx. 45,000 cy)
- Monitoring to continue for several years



Delaware Avenue, Cape May, NJ



- CAP Section 14
- Rip-rap Protection of Road and Sewer Line
- Sand Backfill and Plantings
- Beneficial reuse of Sand from Cape May Ferry Terminal and Canal



Significant Outcomes/Value Produced

- Ongoing Monitoring
- Lessons learned on criteria, design and constructability for future restoration projects
- Work contributes to healthy ecosystems and EWN approach; supports adjacent NMFS resources
- Supports coastal resiliency and sustainability efforts



Chasten Receives 2016 EWN Award



On March 2, 2016, Monica Chasten of the US Army Corps of Engineers Philadelphia District was presented the 2016 Engineering With Nature (EWN) Leadership Award for her contributions to the EWN program over the last six years.



BUILDING STRONG®



Future Opportunities

- Island Creation in coastal NJ and DE
- Dredge Hole infilling
- Marsh Restoration
 - Thin layer
 - Edge restoration
- Working together to inform science-based decisions and projects

