

# TRB Fall Marine Board Meeting NOAA Update

November 9, 2018



Office of Coast Survey  
National Oceanic and Atmospheric Administration



# NOAA Mission Objectives

NOAA's two priority objectives:

1. minimize the impacts of extreme weather and water events by implementing the Weather Research and Forecasting Innovation Act, with the underlying goal to regain world leadership in weather modeling; and
2. accelerating the American Blue Economy, with specific focus on reducing the nation's seafood trade deficit through expanded marine aquaculture.





# NOAA & the Blue Economy

## 1. Infrastructure for Expanding the U.S. Blue Economy: Ocean Mapping

- ocean mapping and dissemination of that information to the public

## 2. Seafood Production and Competitiveness

- NOAA Aquaculture Program provides the science, services, and policies to support the significant expansion and sustainability of U.S. marine aquaculture.

## 3. Maritime Commerce

- NOAA provides nautical charts, ocean and coastal mapping, marine weather forecasts, oceanographic services and other foundational data necessary for safe and efficient navigation.

## 4. Tourism and Recreation

- Health and effective management the federal system of marine sanctuaries, monuments, and other protected areas



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# NOS Themes

- Improving efficiency of the marine transportation system
- Fostering U.S. blue technology businesses
- Promoting coastal and Great Lakes tourism and recreation
- Reducing risk in coastal communities



# Challenges in Arctic Operations

- Weather satellite coverage in Arctic areas is a challenge.
- NOAA is addressing on how to get older vessels up to polar code to be able to work in area.
  - The cost verses the time they will remain active for the portion of the time they spend in the Artic.



# Autonomous Ships, Vehicles, and Shipping

- NOAA's Unmanned Systems for Hydrography.
  - The research to operations portion of autonomous vehicles on our ships.





# Autonomous Ships, Vehicles, and Shipping

- Develop technology and procedures, including automated data acquisition and processing tools, new data acquisition procedures, and data telemetry to support unmanned operations and benefit conventional manned survey platforms.
- Establish a dedicated Coast Survey team specializing in the operational use of unmanned systems.
- Convert existing hydrographic survey launches to operate in either manned or unmanned modes to take advantage of existing shipboard infrastructure and expertise, while incrementally adopting new technology and procedures.
- Continue to support the development and transfer-to-operations of unmanned systems that benefit Coast Survey's mission.
- Continue to collaborate with government, academic and industry partners to share expertise and resources and direct and expedite development.



# Sea-Level Rise & Extreme Weather Impacts ....

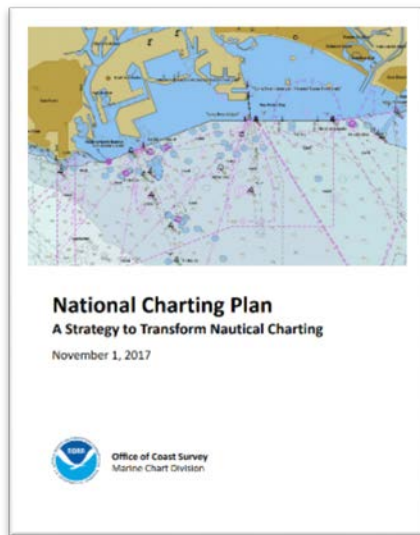
- The NWS provides forecasts for extreme weather events to assist in preparations to protect infrastructure
- CO-OPS National Water Level Observation Network (NWLON) operating across the U.S. coastlines, ports and harbors.
  - Now integrated into the Inundation Dashboard product on the Tides and Currents website.



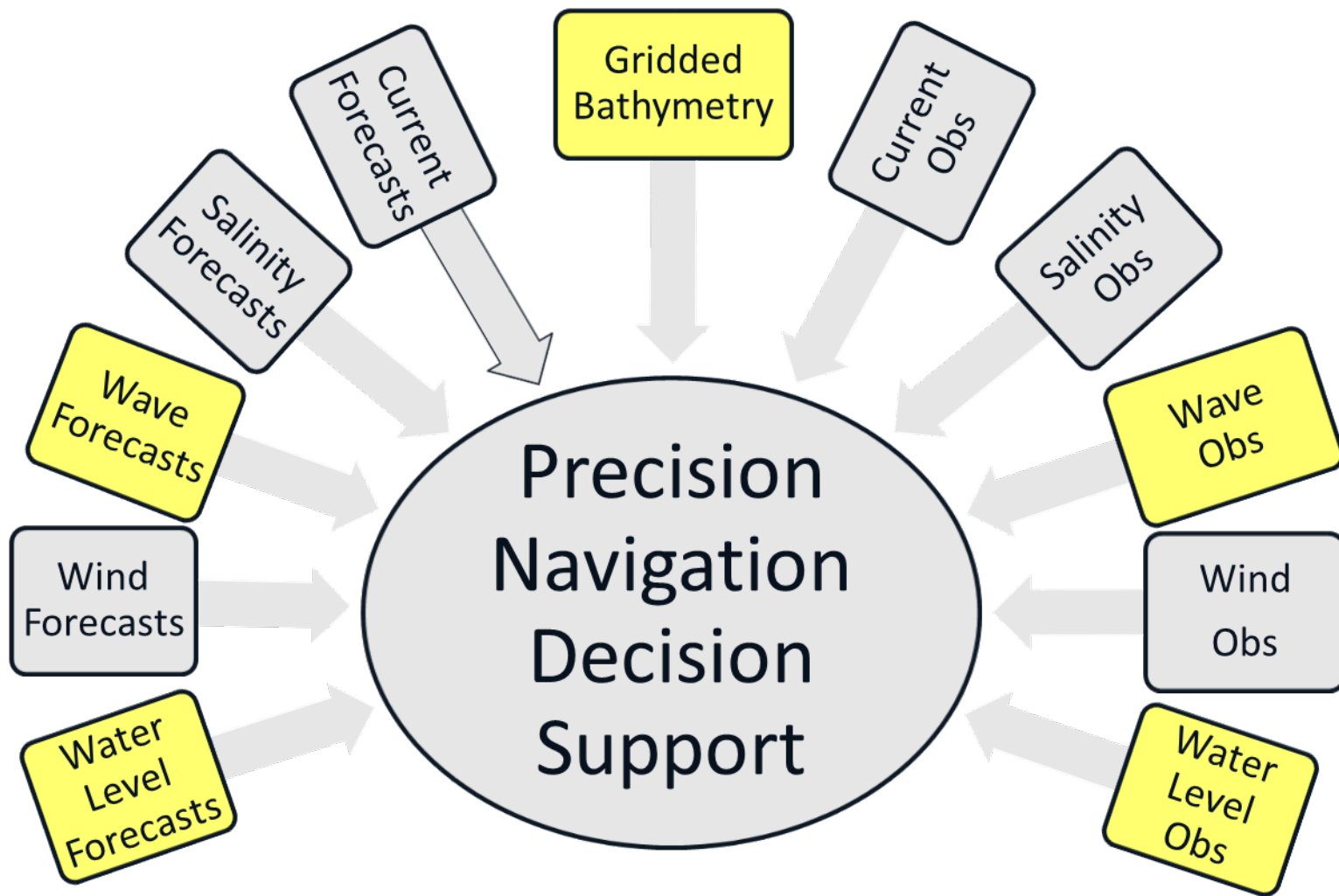


# The Future of Navigation

- The NWS is looking at automated weather observations, transmitted over AIS from ships to increase observations on the open ocean that will help improve marine forecasts.
- OCS has stood up its Precision Navigation Program and we have our updated National Charting Plan.



# The Future of Navigation



# The Future of Navigation

## Precision Navigation: Economic Benefits

- Single streamlined decision support tool to
  - Optimizes the available channel depth
  - Visualize data and environmental conditions
  - Real time data streams (currents, water levels, salinity etc.)
  - IHO standards and specifications (S-100 framework)
- The economic benefits of Precision Navigation will be
  - Increased margins of safety
  - Increased cargo capacity
  - Less delays in port
  - Decreased fuel usage
  - Increase port utilization



# The Future of Navigation (cont.)

- NOS is planning to conduct an external review of its hydrodynamic modeling portfolio.
  - Models have been implemented in critical ports & harbors along the U.S. coastlines & the Great Lakes to serve a broad base of users
  - In addition to improving the safety and efficiency of commercial shipping and recreational boating, other direct applications include:
    - improving national security; proactively preventing, mitigating and responding to natural hazards and oil spills; aiding search-and-rescue, forensic and law-enforcement operations; and improving coastal storm warnings.



# Human and Intellectual Capital

- NOAA has an extensive education program to train the workforce, which is constantly being updated.
  - We are consistently training as a whole, however they currently is not a robust training database or method of tracking, determining and scheduling training.
- Additionally, there is continual strides for a respectful workplace - battling the Sexual Harassment/Sexual Assault and Alcohol Abuse found within the maritime industry (and other industry)



# Marine Incidents and Near-Miss Database

- The NWS is investigating ingesting real-time AIS data to overlay onto weather maps to assure vessels are avoiding hazardous weather systems.
- Within NOAA, this aligns with their overall mariner training issues.
  - The difficulty is to have a marine incident and near miss database that openly allows people to discuss these incidents in an open and transparent way.

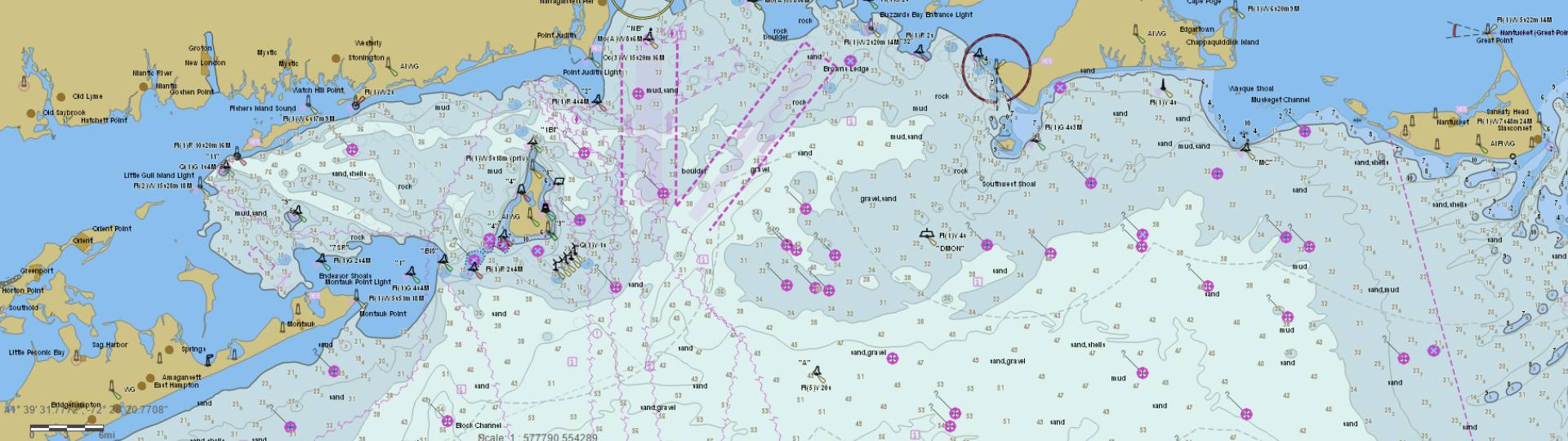




# Improving Resiliency in the MTS

- NWS is continuously improving and lengthening weather forecasts to aid in preparation for major storm events. Proper preparation can improve resiliency and recovery.
- In collaboration with other Federal agencies, CO-OPS has been publishing sea level research that is being used in scenario-based decision-making processes by municipal planners and emergency responders.
  - Based on this research, CO-OPS has developed a new web display for tracking local-to-regional changes in sea level measured by NOAA water level gauges with future projections of sea level rise as represented by the sea level rise (SLR) scenarios of the U.S. National Climate Assessment (NCA).





# Questions?

[heather.gilbert@noaa.gov](mailto:heather.gilbert@noaa.gov)



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U.S. Committee on the  
Marine Transportation System

