NOAA'S CENTER FOR OPERATIONAL OCEANOGRAPHIC PRODUCTS AND SERVICES (CO-OPS)

Future of Real Time Data and Products

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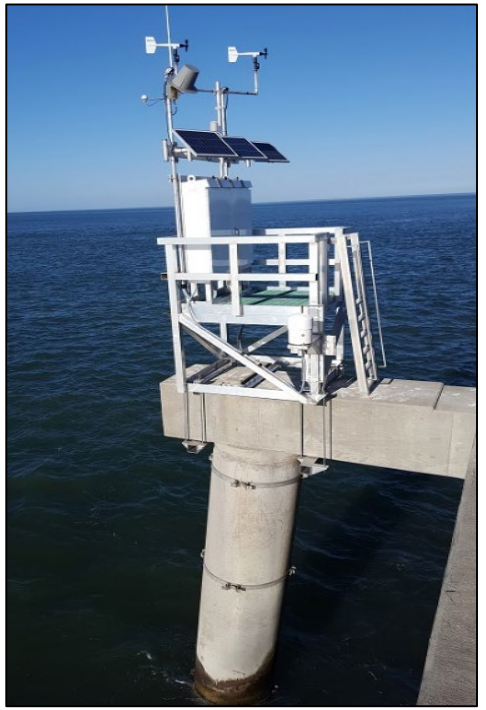
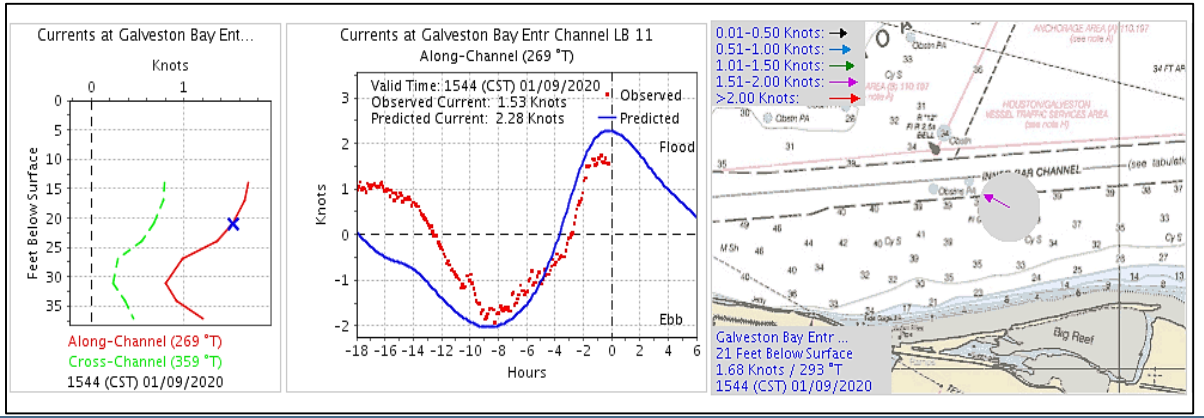
Precision Marine Navigation Workshop - October 1, 2020

CO-OPS Maritime Services Program



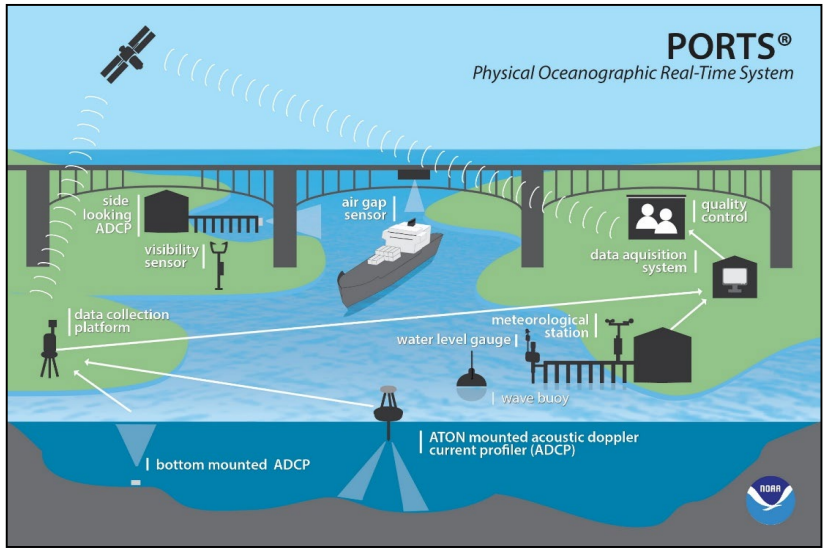
- Information that improves the safety & efficiency of maritime commerce & coastal resource management
- Integrates real-time observations, predictions, nowcasts/forecasts and other geospatial information
- Built on the foundation of over 200 long-term National Water Level Observation Network (NWLON) stations
- Products that aid mariners – decision support tools!

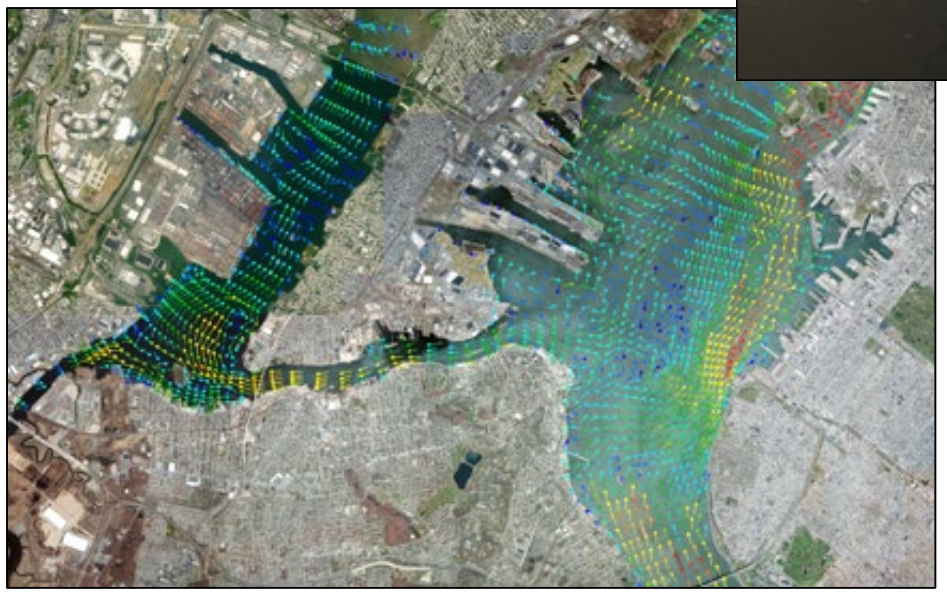


CO-OPS Maritime Services

- Physical Oceanographic **Real Time** System (PORTS®)
- National Operational **Coastal Modeling** Program (NOCMP)
- National Current **Observation** Program (NCOP)

- NOAA/CO-OPS continues to grow these products/services
- More to integrate into Precision Marine Navigation Program!

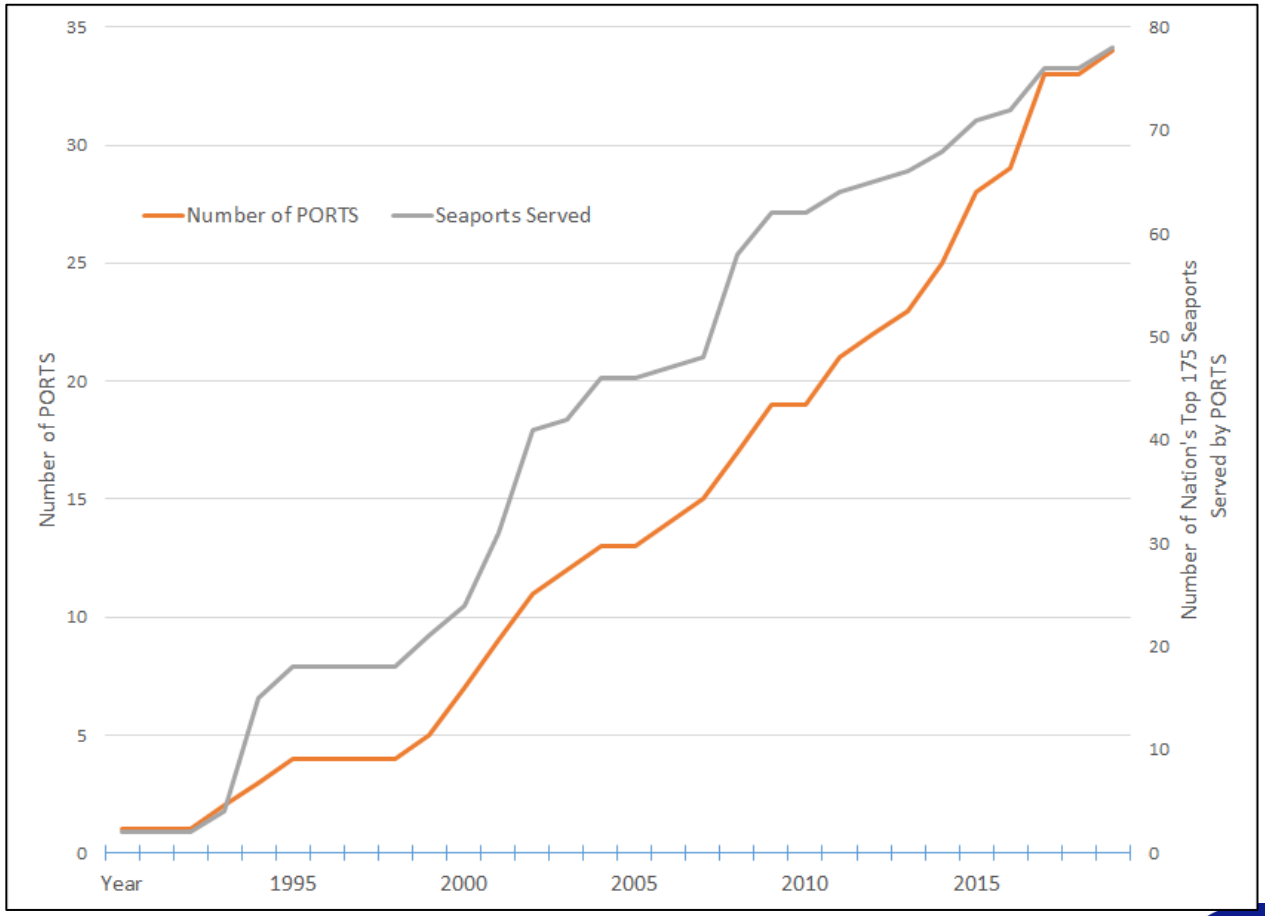




Physical Oceanographic Real Time System (PORTS®)

Where are we and where are we going?

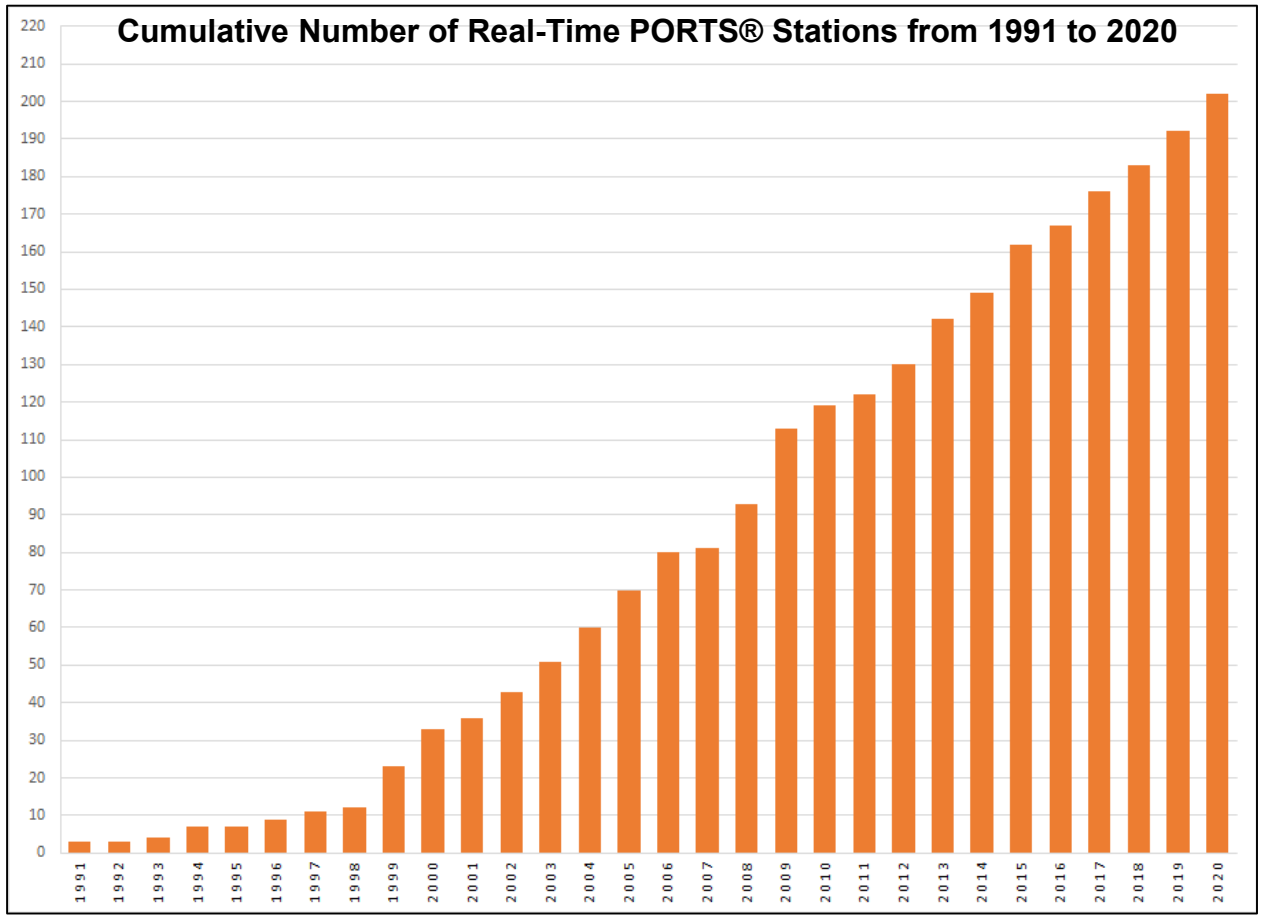
- Currently there are 35 PORTS® serving 79 of 175 (40%) of major U.S. seaports
- Proven reductions in groundings (~60%) & property damage (~37%) in areas served
- Exponential interest and program growth in the last 10-15 years



Physical Oceanographic Real Time System (PORTS®)

Where are we and where are we going?

- 205 stations now part of 35 PORTS®
- Add 55 NWLON and 19 CDIP or TCOON stations



In FY 2020..

- 2 water level stations
- 8 current meters
- 1 air gap
- 2 weather stations
- 3 wave buoys

Physical Oceanographic Real Time System (PORTS®)

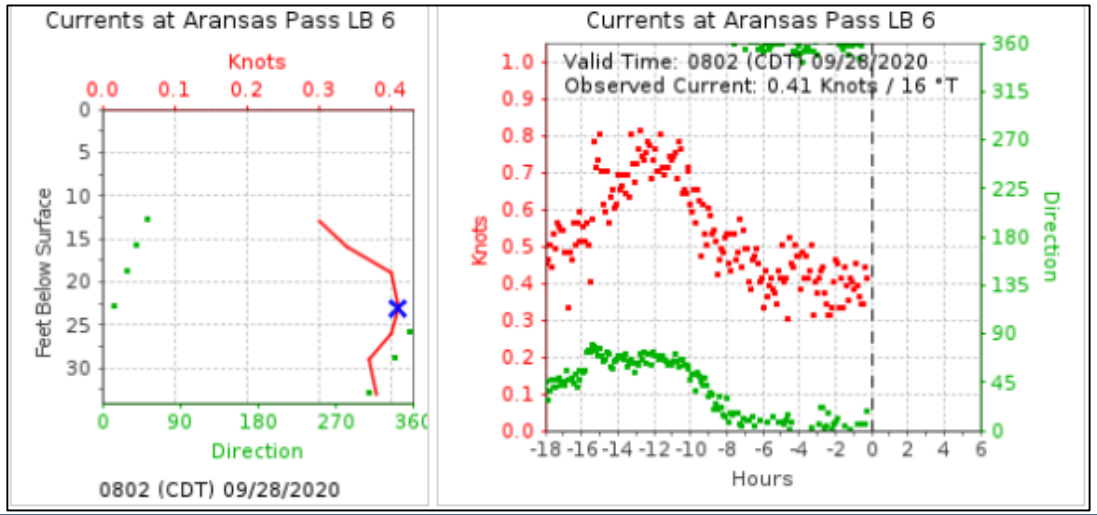
Where are we and where are we going?

- Wide range of local sponsors - tailored systems
- Real time data needs vary...
  - Air draft and under keel clearance some of the big drivers
- Quickly growing partnership with the U.S. Navy supporting National Security
- Progress on long term project with USCG to get PORTS data over AIS

Physical Oceanographic Real Time System (PORTS®)

Where are we and where are we going?

- Upcoming PORTS®:
  - Valdez, AK - early FY 2021
  - Kitsap Peninsula (Puget Sound), WA - early FY 2022
- Expansions to existing PORTS®
  - Corpus Christi, TX - now through FY 2021 (currents, visibility)
  - Houston Ship Channel Current meter - FY 2021
- Additional U.S. Navy interest along west coast
- More Gulf Coast Interest - LNG growth

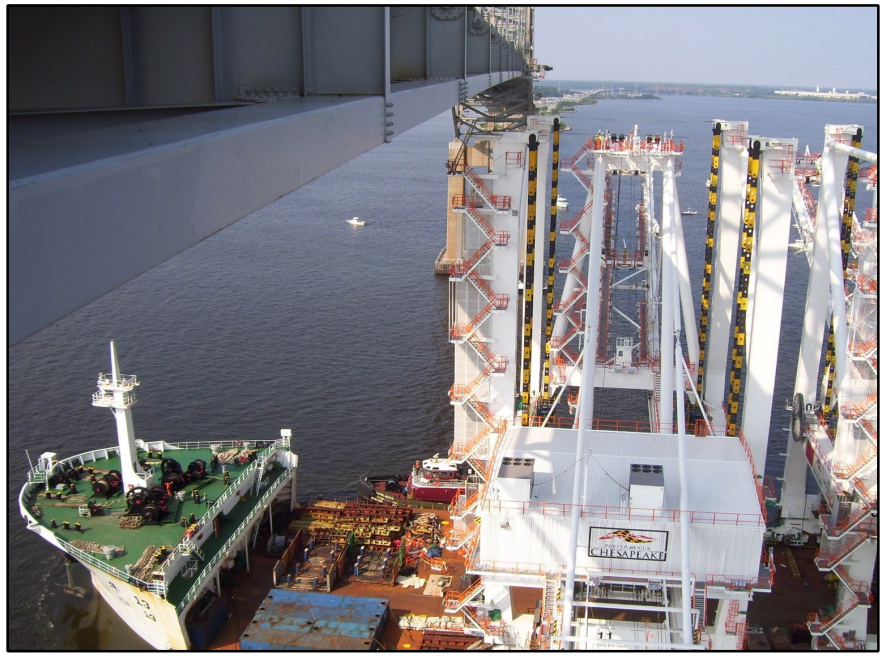


Physical Oceanographic Real Time System (PORTS®)

Where are we and where are we going?

Improving data reliability and access

- Recapitalization of existing stations and sensors
  - Air Gap enhancement options
  - Redundant communication options at stations
  - Upgrades to standard station setups
- Employing new technology/ instrumentation
  - Microwave Water Level sensors
  - Buoy Mounted current meters -transmit via Iridium
  - Flexibilities with current meter technology
- Stronger outreach/ data access
  - Planned updates to PORTS® landing page
  - PORTS® page refresh, data disclaimers
  - Enhanced web services access to data



Physical Oceanographic Real Time System (PORTS®)

Port Prioritization Based on Those Most Likely to Benefit from Precision Navigation

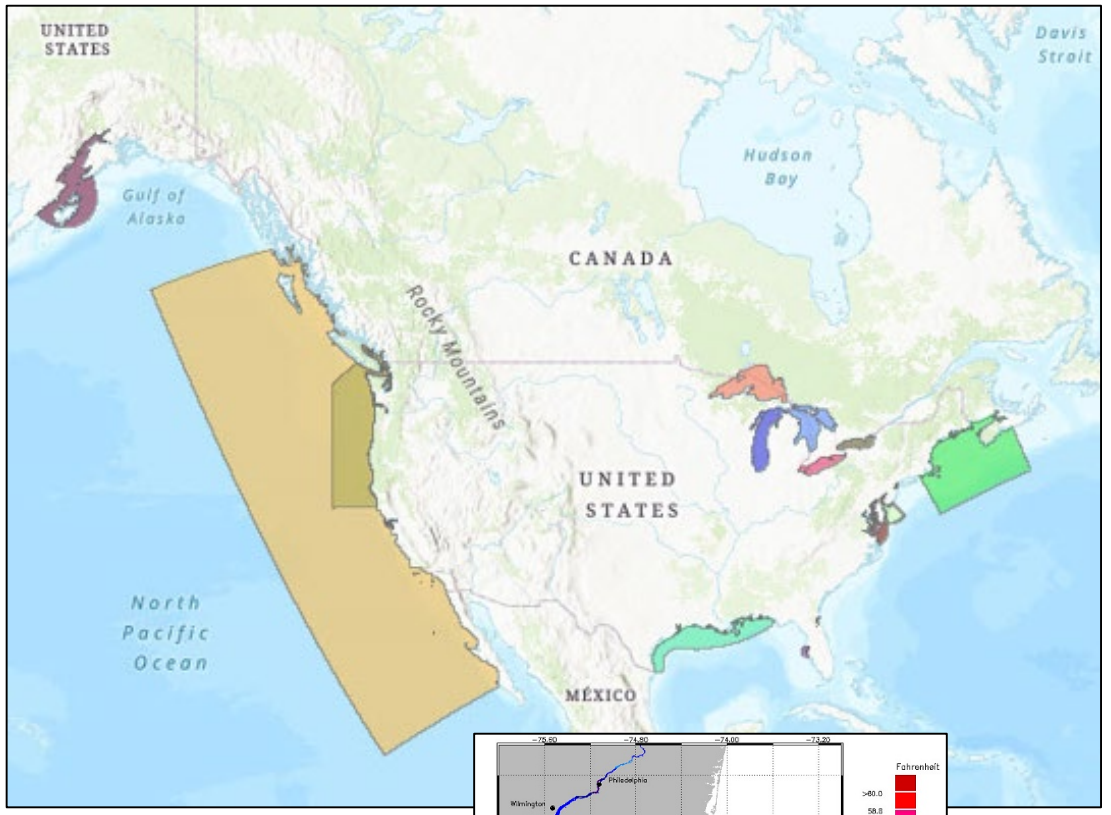
Eastern Research Group, Inc. (ERG) prioritized all major U.S. ports based on their potential to benefit from Precision Navigation. We identified and ranked the top 20 U.S. seaports based on quantitative data that could indicate the benefits associated with Precision Navigation, and we described why each port would be a good candidate for Precision Navigation. The top 20 ports, ranked from having the most potential to benefit from Precision Navigation to the least, include the:

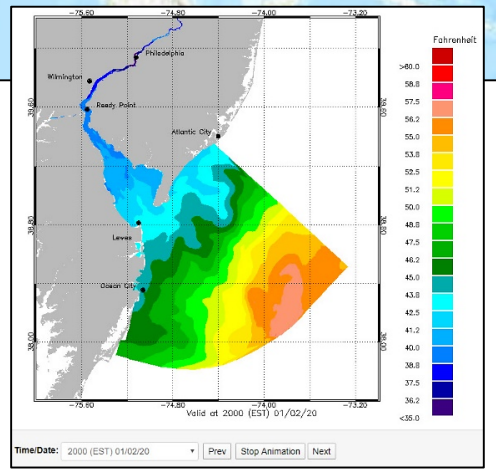
1) Ports of the Lower Mississippi River	8) Port of Virginia	15) Port of Jacksonville, Florida
2) Ports of Houston/Galveston, Texas	9) Port of Long Beach, California	16) Ports of Corpus Christi, Texas
3) Ports of Beaumont, Texas	10) Ports of Puget Sound, Washington	17) Port Everglades, Florida
4) Port of New York/New Jersey	11) Ports of the San Francisco Bay Area	18) Port of Mobile, Alabama
5) Port of Savannah, Georgia	12) Ports of the Delaware River and Bay	19) Port of Lake Charles, Louisiana
6) Port of Los Angeles, California	13) Port of Charleston, South Carolina	20) Port of Miami, Florida
7) Ports of the Columbia River, Washington	14) Port of Baltimore, Maryland	

- Top 20 seaports identified in NOAA Socioeconomic Report on Precision Navigation *(published Jan 2020)* all have a NOAA PORTS® installed.
- Purpose of report was to use quantitative data to identify and prioritize the U.S. seaports that would most benefit from Precision Navigation.

National Operational Coastal Modeling Program (NOCMP)

- 14 Operational Forecast Systems (OFS)
- OFS part of larger National Ocean Service Coastal Ocean Modeling suite
- Invaluable data accessible by the maritime community





Recently completed

Cook Inlet, Lake Michigan/Huron

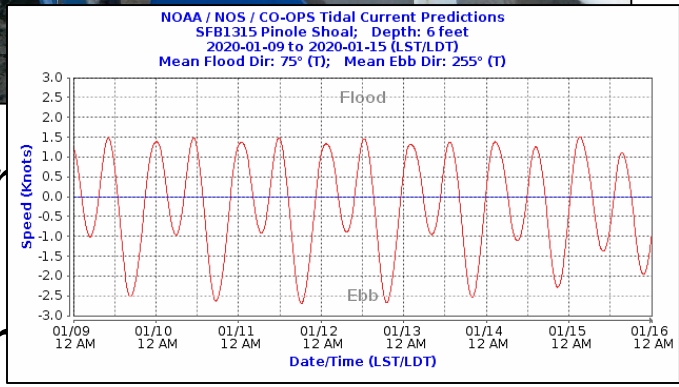
Upcoming

Integrated Northern Gulf of Mexico, West Coast, GL Ice

Upgrade Lake Superior, Lake Ontario, New York Harbor

National Current Observation Program (NCOP)

- Updates NOAA tidal current predictions
- Conduct one field reconnaissance and up to two surveys per year
- Schedule, needs driven by stakeholder feedback and analysis of data and existing predictions



<u>Recently completed</u>

Puget Sound – 3 year

1 year

New York Harbor – 1 year

South Texas – 1 year

Cape Fear River – 1 year

<u>Upcoming</u>

Delaware Bay and River

Columbia River – 2 year

Savannah River – 1 year

Charleston - 1 year

How do these services fit together for vessel transit planning and operations?

- Tide and Tidal Current Predictions – month to weeks
- OFS Forecasts – week to days
- PORTS Real-time observations – hours to minutes

Thank you for attending!

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