

Center for Operational Oceanographic Products and Services (CO-OPS) Updates and Outlook

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HYDROGRAPHIC SERVICES REVIEW PANEL



Overview

- FY22 Supplemental Funding
 - Disaster Supplemental
 - Infrastructure Investment and Jobs Act Funding
- PORTS Program Updates
- Tidal Currents
 - Columbia River
 - CURBY
- Coastal Resilience
 - High Tide Flooding Outlook
 - SLR Technical Report
- External Evaluation/PORTS Assessment



FY22 Disaster Supplemental Funding

Repairs

- Rebuilt Freshwater Locks Canal, LA NWLON
- Repaired minor damages at other NWLON stations in Louisiana
- Replace equipment at destroyed Port Fourchon PORTS water level station



Improvements

Collaborate on modeling data assimilation and coupling

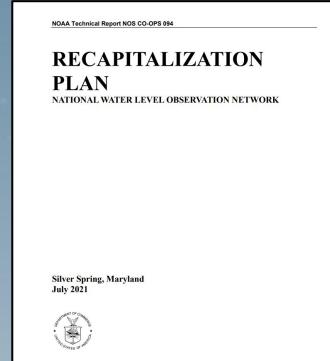
- NOS & NWS collaboration for data assimilation techniques to improve hurricane forecasting
- OCS & National Water Center collaboration for 2D model coupling to improve flood inundation mapping activities



Infrastructure Investment and Jobs Act Funding

Provision 11 - Support improved and enhanced coastal, ocean, and Great Lakes observing systems

- **NWLON station recapitalization** – improve the NWLON's operational readiness by rebuilding several stations with failing infrastructure
- **NWLON MWWL transition** – accelerate and complete the transition of water measurement technology from acoustic to microwave technology
- **NWLON IT modernization** - modernize the underlying information technology infrastructure to eliminate legacy code, reduce security risks, gain efficiencies, and ensure continuity of operations



Corrosion issues at the
Calcasieu Pass SPIP



New Haven MWWL installation

Infrastructure Investment and Jobs Act Funding

Provision 3 - Support coastal and inland flood and inundation mapping and forecasting, and next-generation water modeling activities, including modernized precipitation frequency and probable maximum studies

Coastal & Inland Flooding and Inundation Mapping

- **Coastal Model System Acceleration** – Deliver regional/national coastal models (including Great Lakes) to inform coupled system development (in collaboration with OCS & IOOS)
- **Coupling Capabilities** - advance coupling of the NextGen National Water Model to NOS 3D numerical coastal models (in collaboration with OCS, IOOS, and NWS)



Infrastructure Investment and Jobs Act Funding

Seasonal to Annual Predictions

- **Enhanced Coastal Inundation Prediction** – prototype a next generation prediction system to determine the mean and extreme water levels across subseasonal to annual time scales for the open coast (East Coast and Gulf of Mexico) and Great Lakes (NOS and OAR collaboration)
- **New Coastal Inundation Data, Products and Applications Development** - prototype coastal inundation outlook products with gridded model data to support monthly-to-annual planning; and work to integrate data and map visualizations into NOAA decision support tools (NOS, OAR, and NWS collaboration)



PORTS® Program Updates

FY22 Enhancements

- Lake Charles - buoy mounted current meter
- Portsmouth - meteorological and salinity sensors
- Jacksonville – wind sensors to a station
- Narragansett - new meteorological station



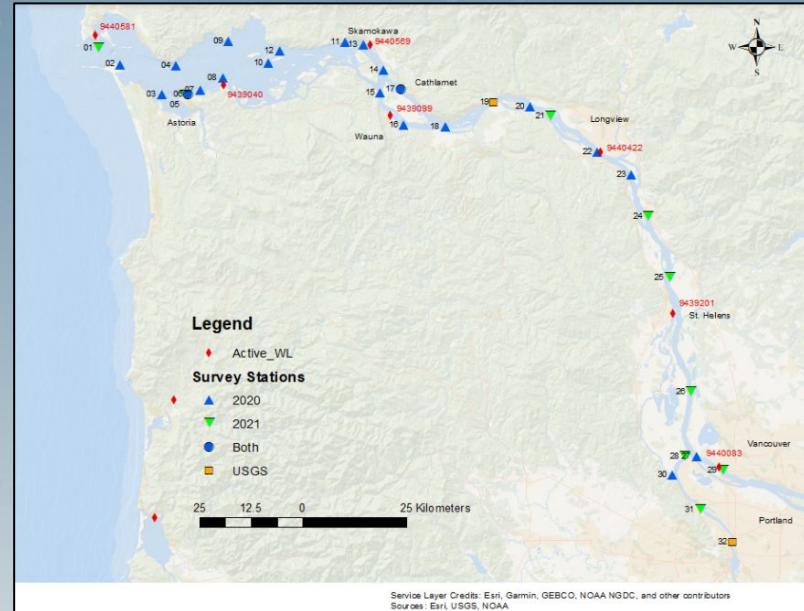
New PORTS

- Kitsap, WA (went operational in FY22)
 - Partnership with U.S. Navy
 - Added 1 water level station, 2 current meters
- Freeport, TX (very early FY23)
 - Partnership with Port Freeport
 - Integrate 1 NWLON, and 2 current meters
- Pearl Harbor, HI (FY23 or 24)
 - Partnership with the U.S. Navy
 - Integrate 1 NWLON, add 2 current meters
- Brownsville, TX (FY23)
 - Partnership with Port of Brownsville
 - Integrate 1 NWLON, 2 TCOON and add 1 current meter

Tidal Current Surveys

Columbia River

- Main river channel was deepened to 43' by the U.S. Army Corps of Engineers between 2005 and 2010 to allow larger container and grain ships to reach the ports of Portland and Vancouver.
- Predictions will be updated at 28 locations in the Lower Columbia River and two long-term stations will collect data entire survey period (into FY23).
- New approaches being taken include longer deployments, CURBY buoys, and side looker current meters.



CURBY

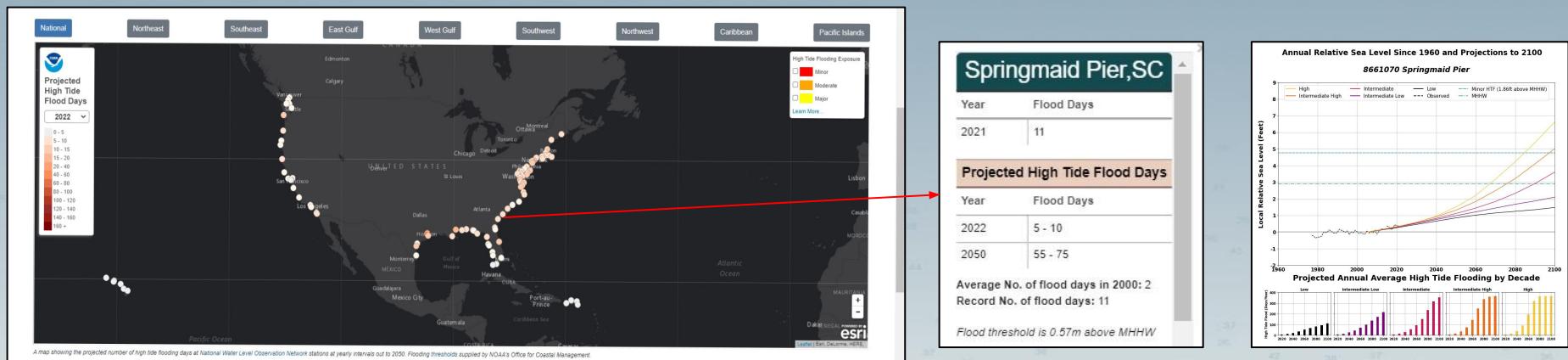
- Designed and developed by CO-OPS in Chesapeake, Virginia to support tidal current surveys and emergency response.
- Enables current measurements where there are no existing structures or where the seafloor is unsuitable for a bottom-mounted platform.
- Can assess tidal currents in areas of significant bathymetric change, validate numerical models, and inform circulation studies.
- Rapidly-deployable, near-surface resource that can help support emergency operations. Easily deployable from small vessels and equipped to observe currents and transmit data in real time.
- Collaboration with ORR to build and forward deploy buoys.



State of High Tide Flooding and 2022 Outlook

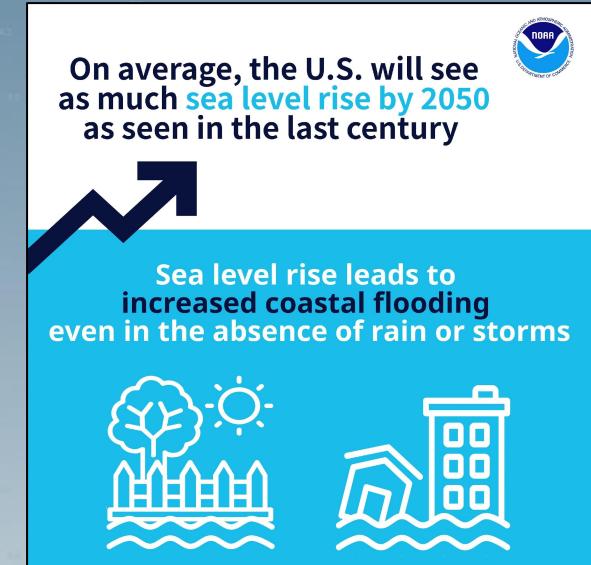
The [report](#) documents changes in high-tide flooding patterns from May 2021 - April 2022 at 97 NWLON stations and provides a flooding outlook through April 2023 and projections for several decades.

Improvements to the annual outlook included transitioning the content to an interactive GIS with more detailed regional information.



2022 Sea Level Rise Technical Report

- In February NOAA led development of an interagency report that provides the most up-to-date sea level rise projections by decade for the next 100 years and beyond.
- Updated the 2017 report and used data from tide gauge and satellite observations along with the model ensembles from the Sixth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC).
- CO-OPS provides the data from this report via its Applied Programming Interfaces, which is valuable for stakeholders who want to use the data in their own applications.



Over 70 media outlets covered the release of both the Sea Level Rise and High Tide Flooding reports with articles appearing in local and national newspapers across the U.S.

External Evaluation

- NOS Program Offices are beginning to conduct external reviews every five years, CO-OPS Panel meetings are scheduled for October 2022 with final recommendations being delivered at the end of the year. The HSRP will be briefed on the findings in the Spring.
- Members of the External Review Panel are technical experts, leaders, and information users who represent Federal and non-Federal affiliations, multiple areas of scientific expertise, and a variety of stakeholder groups.
- Three themes have been identified for evaluation: CO-OPS Observing Systems. Maritime Products and Services, and Future Directions
- Input being sought on quality, relevance and performance of our products and services, our unique risks and challenges, and our strategic approach to achieving our mission.

PORTS Assessment

Determine the requirements for a fully built out system

- Minimum number, types & locations of real-time PORTS® sensors needed to support safe and efficient marine navigation in each of the 175 top seaports

Outline and evaluate governance options for:

- Existing cost share model
 - Outline the pros and cons of the current PORTS® cost-share model
- A fully federally funded program
 - Outline the pros and cons of a full Federally-funded model
 - Recommendations for a full Federally- funded PORTS® program governance model
- Evaluate the equity considerations for underserved communities in the two governance model options



Questions?

