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

Marian Westley, Director September 24, 2024 HYDROGRAPHIC SERVICES REVIEW PANEL



Overview

- IGLD Update
- Coastal Inundation Dashboard
- Observing System Improvements
- NWLON Updates
- PORTS Program Updates
- NCOP Tidal Current Surveys



Newly Rebuilt National Water Level Observation Network Station Ogdensburg, NY (8311030).

International Great Lakes Datum (IGLD) Updates

The IGLD is an elevation reference system used jointly by the United States and Canada to measure water levels.



Common Reference - needed to measure and relate water levels

Changing - updated every 25-30 years

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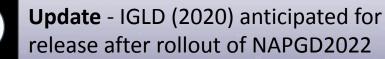
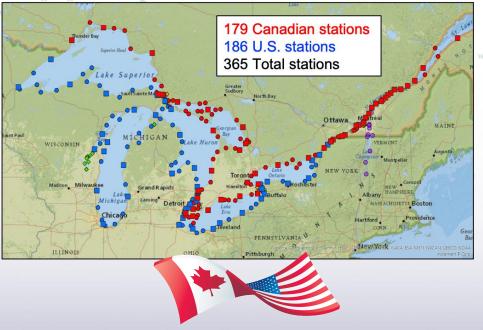




Image: Great Lakes waterways, credit: International Joint Commission

International Great Lakes Datum (IGLD) Updates

- 2022 GNSS Campaign data processing is nearly complete
- Water level data collection for IGLD (2020) - is complete - field crews conducting final bracketing leveling
- Bluebooking 2022 levels associated with GNSS campaign; closing bracketing levels
- Working with geodetic offices to determine if hydraulic correctors will be needed



 Low Water Datum recomputation analysis complete; will be submitted to Coordinating Committee for review in early 2025

Coastal Inundation Dashboard Updates

Recently added two new map layers to <u>Coastal Inundation Dashboard</u>.

Partner Stations - Displays latest data from select partner water level stations supported by IOOS Regional Associations to augment CO-OPS water level network for real-time coastal flood monitoring. Data available for 3 stations in the southeast and 1 in Alaska with more to be added.

2. **Coastal Webcams** - Displays 17 locations where real-time camera and video imagery along the coast is available for tracking on-the-ground flood impacts in real-time. Users are taken to the camera page on the <u>WebCOOS</u> application where they can view the latest images and real-time video feed.



Access Historical Data

Click for latest webcam images and video

Imagery Map Topographic Map

Description : This camera is positioned on the Charleston Branch Pilots pier overlooking Charleston Harbor, the Cooper River and nearby infrastructure, and is co-located with the nearby NOAA NOS CO-OPS tide gauge. It is a partnership between CO-OPS, the Charleston Branch Pilots and the WebCOOS team to monitor sea state and coastal flooding.

Partners: NOAA/CO-OPS, Charleston Branch Pilots Association



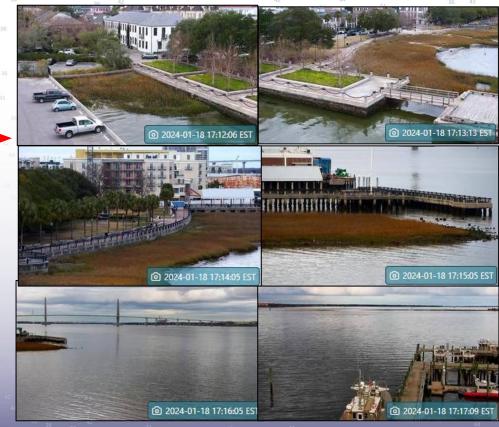
Observing Systems Improvements

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Every minute the camera switches between 6 different viewing angles while capturing a still image.



A still image from the high-resolution WebCOOS webcam located at Holland, MI. The video shows the detection of a rip current (blue box) using Artificial Intelligence at Holland Beach, MI.



NWLON Updates: Ogdensburg, NY

Progress Made

- Total rebuild needed as part of end of service life recapitalization project.
- Ongoing continuous status and operational communication with NYPA, USACE, and Canadian stakeholders has been maintained.
- MWWL radar with backup pressure sensors working well.
 COET is continuously monitoring performance.
- Full station installed August 2024.







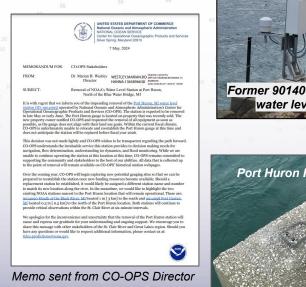


NWLON Updates: Port Huron, MI - Removal

Station supported: maritime navigation, water level regulation, ice forecasting, flood monitoring and mitigation, data collection for IGLD (2020)

- Installed December 2022 to replace >20-year NWLON station 9014096 Dunn Paper, following planned demolition of the Dunn Paper location
- **Declared operational April 2023**
- Designed to be temporary and installed to quickly re-establish gauging at this location
- Following a property ownership change, in January 2024 CO-OPS was told to remove the temporary station
- Late June 2024 9014095 Port Huron was removed
- Key stakeholders were notified and engaged in efforts to maintain the Port Huron gauge
- No plans currently to replace the station

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Former 9014095 Port Huron water level gauge



PORTS[®] Program Updates

FY24 Enhancements

- Port Everglades, FL: 2 Buoy mounted current meters
- Jacksonville: 1 Buoy mounted current meter
- Chesapeake Bay North: 1 New Air Gap system
- Chesapeake Bay South: Reinstall Salinity sensor
- Mobile Bay, AL: 1 Side Looking current meter
- Port of Anchorage, AK: Integrate CDIP Wave Buoy
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Implementing Air Gap Policy

- Apply consistency to all new and legacy installs (19 total systems)
- Every bridge structure is different
- Public facing letters standing for every bridge air gap system
- Dual / redundant systems reduces data down time
- Relative co-location between equipment and 'air gap reference' point - reduces error on readings
- Partners need to work with bridge owners if additional infrastructure (platform) is needed
- Will be signed and publicly available in early October





New PORTS® in the works

FY25: Complete Pearl Harbor-Honolulu, HI FY25: Establish Hudson River Estuary, NY FY26: Establish Seattle, WA

NCOP Tidal Current Survey Update

Charleston Harbor Tidal Current Survey

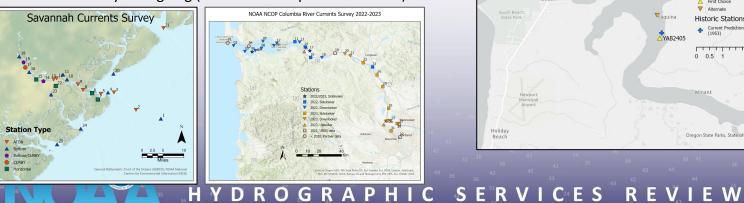
- September final recoveries
 - 35 of 37 stations expected to have good data
 - 9 co-located CTDs with time series
- Data ingestion & analysis planned for FY25

Savannah River

- Field work completed in 2023
- Data ingestion & analysis beginning (24 stations)

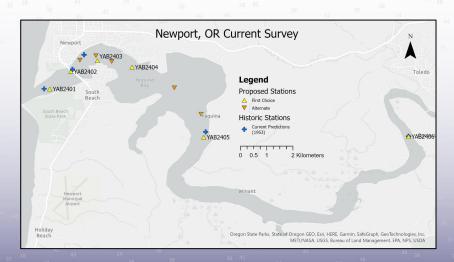
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FY25 Plan:

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 Deploy ~6 ADCPs
- Recon: Port Hueneme / Santa Barbara, CA
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Questions?

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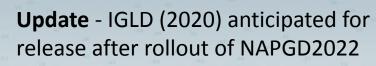




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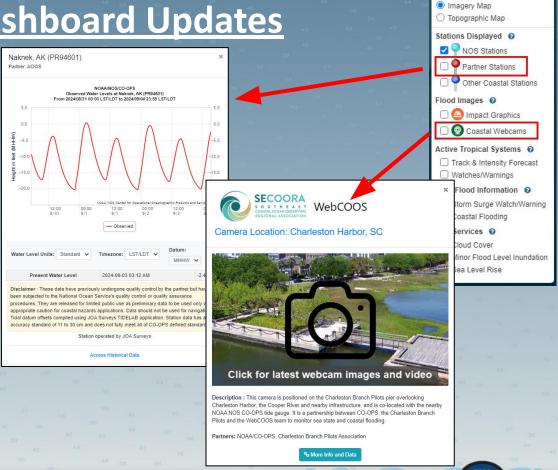


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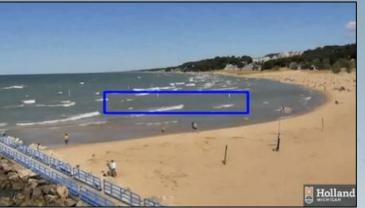
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	National NATION Center 1	STATES DEPARTMENT O Il Oceanic and Atmospherie IAL OCEAN SERVICE for Operational Oceanograph pring, Maryland 20910	c Administration
		7 May, 2024	
EMORANDUM FOR:	CO-OPS Stakeholders		
:OM:	Dr. Marian B. Westley Director	WESTLEY, MARIAN, BO WE	gitally signed by STLEY MARIAN BOHAMMA.13 896638 92 202425.07 1405.31 0490
BJECT:	Removal of NOAA's Water Level Station at Port Huron, North of the Blue Water Bridge, MI		
tion (ID: 9014095) oper erational Oceanographi late May or early June.	orm you of the impending ated by National Oceanic c Products and Services (C fhe Port Huron gauge is lo of CO. OR and concentration	and Atmospheric Adminis O-OPS). The station is exp cated on property that was	tration's Center for sected to be removed s recently sold. The

statistical (Transmission) operated by National Oscala and Numophorie Administrations's Chetter for the statistical operated by National Oscala and Numophorie Administrations's Chetter for the statistical statistical operation of the statistical statistical

This decision was not made lightly and CO-OPS wishes to be transparent regarding the path forward. CO-OPS understands the invaluable services this station provides to decision making needs for mavigation, flow determination, understanding ice dynamics, and flood monitoring. While we are unable to continue operating the station and this location at this inter, GO-OPS remains committed to supporting the community and stakeholders to the best of our abilities. All data that is collected up to he pairt of removal of remains a mail and on OOPS historical stations whypeys.

Over the counting year, CO-OPS will begin exploring new potential gauging sites so that we can be opported to restabilist the dations over are orbitally mesoures become validable. Should a make the transmission of methods are been as the second orbit of the states over a second structure of the second structure of t

We applogize for the inconvenience and uncertainty that the removal of the Port Huron station will come and express our gratitude for your understanding and ongoing support. We encourage you to share this message with other stakeholders of the St. Chir River and Great Lakes region. Should you have any questions or would like to request additional information, please contact us at: <u>the proteinforman any</u>.

Memo sent from CO-OPS Director





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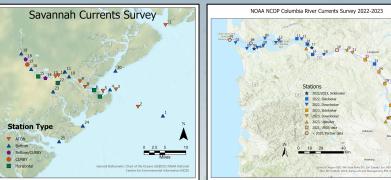
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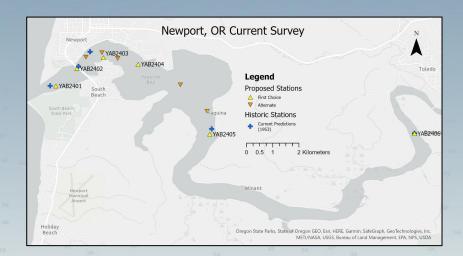
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