



Physical Oceanographic Real-Time System (PORTS®) Funding Model

Richard Edwing, Director

Center for Operational Oceanographic Products and Services

AAPA Harbors & Navigation Committee Meeting

Jacksonville, Florida

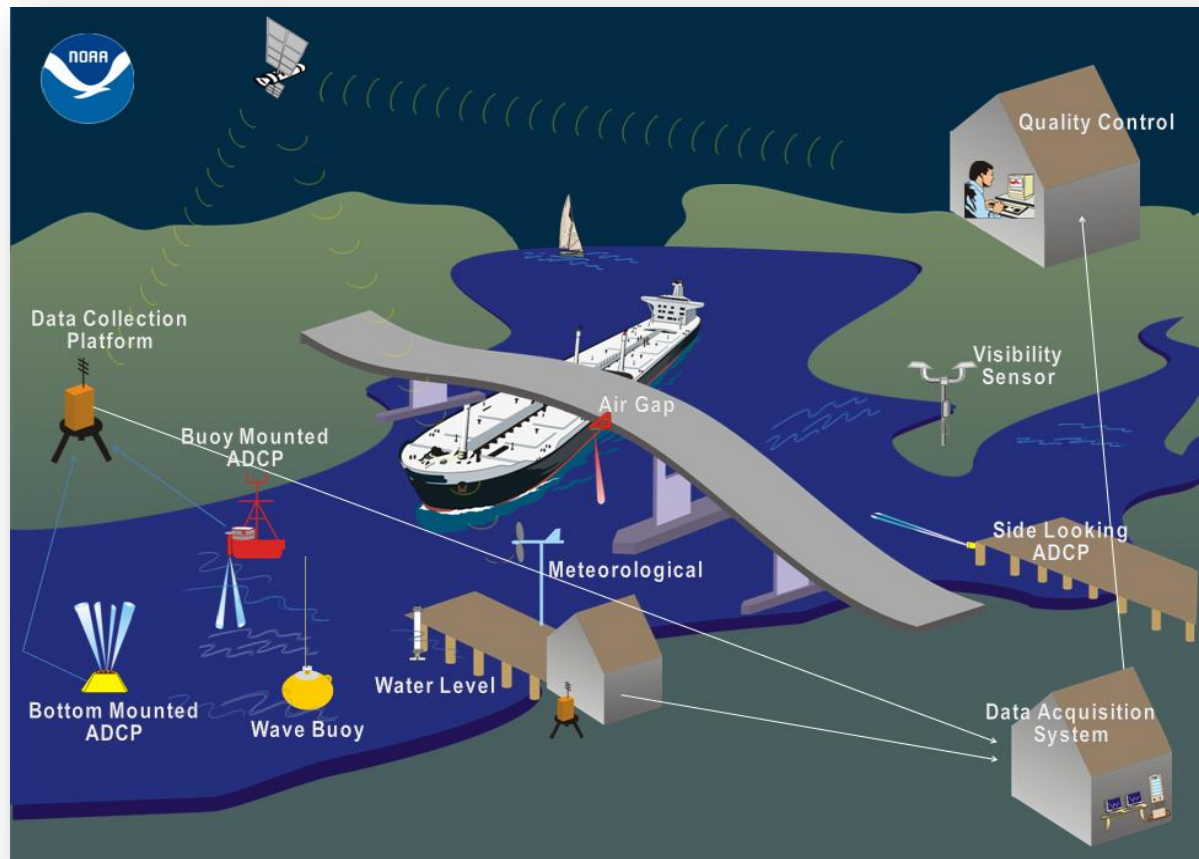
September 18-19, 2013

What Is PORTS®

Local Observing System

Measures and disseminates observations and predictions

- **Water levels**
- **Currents**
- **Salinity**
- **Air gap**
- **Meteorological parameters**
- **Visibility**
- **Waves**



What Is PORTS®

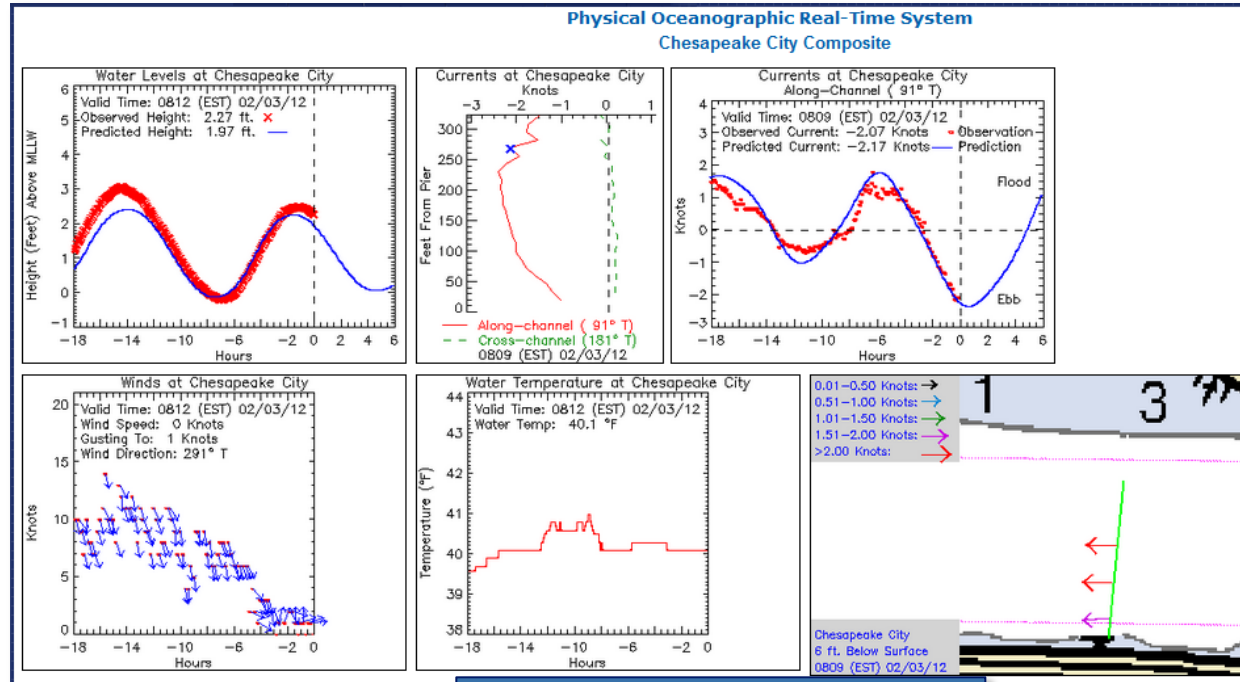
Data Products and Tools

- Real-time data dissemination

- Internet
- Voice response
- PDA

- Products

- PORTS Pics
- MyPORTS
- ARNS



PDA Application

Automated Real-Time Narrative Summaries (ARNS)

Real Time Text Summary **New!** Text

Voice data response

1-866-CHPORTS (1-866-247-7878)

Welcome to MyPORTS!

MyPORTS is an application designed to let you create your own customized PORTS pages. By following the simple steps listed below, you'll be able to create a custom view of the data from any of our PORTS stations!

Step 1: Select a plot from the list on the right by clicking on the desired name

Step 2: Move the plot into its desired location by clicking and dragging

Step 3: Repeat steps 1 and 2 until the page looks the way you want it

Step 4: Click Save, and bookmark the final page!

Click the "?" on the menu bar to access this page again at any time

Let's Go!



Physical Oceanographic Real-Time System[®]

PORTS[®]



PORTS[®] Partnership Program

PORTS[®] is a **partnership** with responsibility shared between NOAA and the local maritime community.

NOAA

- Program management
- Data collection and infrastructure
- Data dissemination
- 24/7 quality control
- National standards
- Development for future enhancements



Partner

- Site selection for a user-defined system
- Funding for local:
 - Equipment
 - Installation
 - Annual operation
 - Maintenance

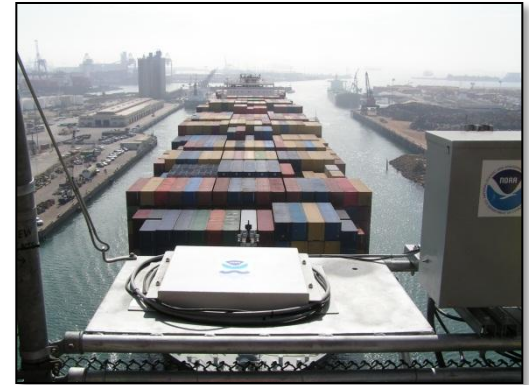
Business Models

- NOAA operated – funds provided to NOAA to fully operate and maintain local PORTS[®] observing system.
- Partner operated – partner directly manages operation and maintenance to NOAA standards.
- Hybrid – some combination of the above.



PORTS[®] Partners

- Port Authorities
- State agencies
- Pilots
- US Navy
- U.S. Army Corps of Engineers
- Oil companies
- Industry contributors



PORTS® Funding Sources

- Port Authorities
- Local fees
- State agencies
- Federal government (grants)
- Private sector



PORTS® Annual Reports

Upper Chesapeake Bay PORTS® Annual Report (May '12 – Apr '13)

The Upper Chesapeake Bay Physical Oceanographic Real-Time System (PORTS®) supports safe and cost efficient navigation in the Upper Chesapeake Bay region by providing the maritime community with accurate oceanographic data in near real-time. The Upper Chesapeake Bay PORTS® is made up of nine water level gauges, 7 with meteorological sensors and 2 with salinity sensors, 5 stand-alone meteorological sensors, and 6 current meters. The system is the result of collaboration between the State of Maryland, Maryland Port Administration (MPA), and NOAA's Center for Operational Oceanographic Products and Services (CO-OPS). In June, 2009, the two parties entered into a new five-year memorandum of agreement, NOAA MOA-2009-030, allowing for the continued enhancement, operation, and maintenance of the CB PORTS®. MOA-2009-030 expires on April 30, 2014. This report covers the fourth period of performance from May 1, 2012 through April 30, 2013.

Financial Summary

MOA-2009-030 consists of five, one-year operation and maintenance (O&M) and funding periods. The Agreement allows for unused funding from previous periods to be brought forward to the next period. For O&M period four covered by this report, CO-OPS contracted Woods Hole Group, Inc. to perform the routine O&M. The contract period of performance expired on June 30, 2013. CO-OPS has exercised an option on the existing Woods Hole Group, Inc. (WHG) contract for continued O&M for the fifth and final O&M period of the Agreement. CO-OPS will use the buildup of O&M funds for the addition of two visibility sensors and an air gap sensor on the Francis Scott Key Bridge in this coming year. See "Next Year Enhancement" section below.

Table 1.

Period of Performance, Funding, and MPA account balance through 4/30/13 for MOA-2009-030						
O&M Period	Begin / End Dates	Carryover from Previous Period	Agreement Amount	MPA Payment Amount	Funds Expended	Balance Carried Forward to Next O&M Period
3	May'11 – Apr'12	\$153,876	\$415,809	\$415,809	\$205,417	\$364,268
4	May'12 – Apr'13	\$364,268	\$424,126	\$424,126	\$253,733	\$534,661
				Contracts	\$179,363	
				Supplies/Equip	\$68,494	
				Other	\$5,876	

***CO-OPS anticipates a balance of funding remaining at the expiration of this agreement.

System Maintenance

For the period May 2012 – Apr 2013, all Upper Chesapeake Bay PORTS® components were visited in accordance with the standard PORTS® maintenance schedule found in the table below. CO-OPS goal is to attain 95% sensor reliability.

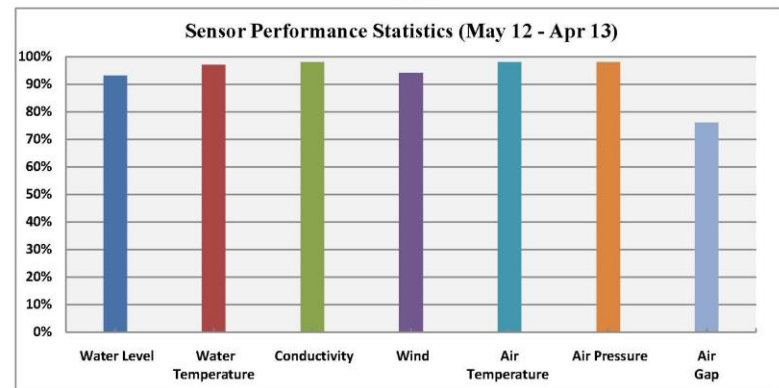
Table 2.

Sensor / Location	2 Mo	4 Mo	6 Mo	Yearly	2 Year	4 Year
Buoy Mounted Current Meter	Inspect (shore station)		Replace		Replace & Recalibrate	Replace Platform & Cable
Horizontally Mounted Current Meter	Inspect & Clean		Dive & Clean		Replace	
Water Level Gauge	Inspect			Service		
Air Gap Sensor & Laser backup		Inspect & Clean		Replace	Replace & Recalibrate	
Conductivity Temperature	Clean			Replace		
Solar Panels	Clean					
Meteorological Sensors	Inspect			Service		
Radio Base Station				Inspect		

Sensor Performance

The Upper Chesapeake Bay PORTS® water level sensors averaged 93% sensor reliability for the period covered, slightly below our goal of 95% reliability. Meteorological and salinity sensors averaged 97% and 98% respectively. Current meters averaged 87% reliability which is consistent with other CO-OPS current meters in operation due to the sensors typically being deployed in harsher environments. As mentioned below, we will be adding another communication method to the current meter process to help improve data reliability. Air gap sensors returned an average reliability of 76% (see Table 3 below) due to the sensor at Reedy Gap. The Reedy Point Air Gap sensor was visited by WHG and taken offline on several occasions throughout the months of May and June, 2013, due to bridge maintenance. In September NOAA was asked to remove all equipment from the bridge location until maintenance was completed. The sensor is still offline because the bridge maintenance has not been completed. The buoy mounted current meter at Rappanhannock Shoal also returned lower than anticipated results throughout the period covered in this report. In February, 2013, WHG performed and unscheduled maintenance visit to replace the data collection computer and data reliability improved temporarily. Data return was sporadic for the remainder of the period. On June 5, 2013, the current meter was revisited for scheduled maintenance and upon closer inspection it was noted that the buoy had been struck damaging the mount and profiler tube. Maintenance was performed on the system and since that date returns have been in the 90% range consistently.

Table 3.



Next Year Enhancement

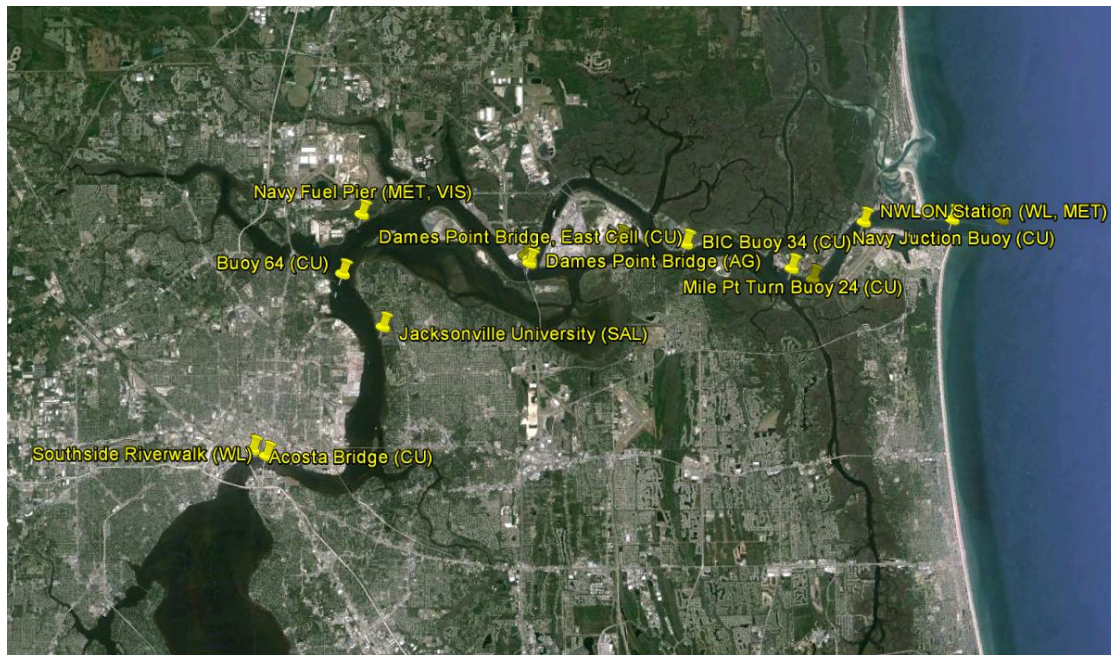
CO-OPS has implemented a new current meter communication method using the GOES satellite. This will help reduce data interruptions due to communications. Currently we use IP modems to relay data, which are cell network dependent. Interruptions in this network lead to missing data. Adding the GOES satellite transmit option will mitigate these interruptions and help improve sensor reliability by having redundant communications. Also new in the coming year will be the addition of two visibility sensors near the Francis Scott Key Bridge (FSK) and the Annapolis Bay Bridge. An air gap sensor is also scheduled for installation on the FSK Bridge.



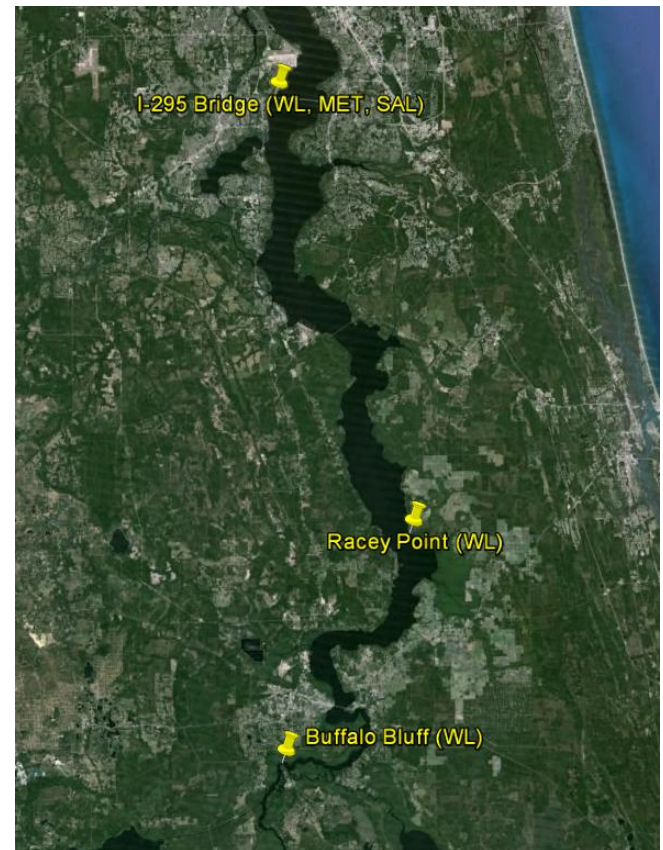
Figure 1. Map of Upper Chesapeake PORTS®

Questions

Jacksonville PORTS®



Jacksonville PORTS North



Jacksonville PORTS South

Backup



PORTS	Partner	Funding Source	O&M Managed By
Anchorage	Port of Anchorage	State of Alaska	NOAA
Charleston	South Carolina State Ports Authority	State of South Carolina	NOAA
Cherry Point	BP Cherry Point Refinery	British Petroleum	NOAA
Chesapeake Bay - Lower	US Navy Mid-Lant	Federal	NOAA
Chesapeake Bay - Upper	Maryland Port Administration	State of Maryland	NOAA
Delaware	Philadelphia Regional Port Authority	Independent agency of the Commonwealth of Pennsylvania/ Diamond State Port Corporation - Delaware / New Jersey Port Corporation	NOAA
Houston / Galveston	Port of Houston Authority	State of Texas	NOAA
Humboldt Bay	Humboldt Bay Harbor, Rec and Conservation District	State of California	Partner
Jacksonville (not online yet)	Jacksonville Marine Transportation Exchange	FEMA Grant and local contributors	Partner
LALB	City of Long Beach	Port of Long Beach / Jacobsen Pilots / Port of LA	Hybrid
Lake Charles	Lake Charles Harbor and Terminal District	Lake Charles Pilots through Pilotage Fee	NOAA
Lower Columbia River	Port of Portland	State of Oregon	NOAA
Lower Mississippi River	Board of Commissioners Port of New Orleans	Associated Branch Pilots through pilotage fee - will become new partner	NOAA
Mobile	Alabama State Port Authority	State of Alabama	NOAA
Narragansett	Rhode Island Dept. of Environmental Management	State of Rhode Island	NOAA
New Haven	Connecticut Department of Transportation changing to Port Authority of New Haven	State of Connecticut	NOAA
New London	US Navy Port Operations	Federal	NOAA
New York / New Jersey / Verrazano Air Gap	Port Authority of New York New Jersey	States of NY and NJ	NOAA
New York / New Jersey / Verrazano Air Gap	Triborough Bridge and Tunnel Authority	State of New York	NOAA
Pascagoula	Jackson County Port Authority	State of Mississippi	NOAA
Sabine Neches	Jefferson County Waterway Navigation District	State of Texas	Partner
San Francisco	Marine Exchange of the San Francisco Bay Region	Office of Spill Prevention and Response - State of California	Hybrid
Soo Locks	US Army COE	Federal	NOAA
Tacoma	Tacoma Port Authority	State of Washington	NOAA