SECOORA

Federal partners

Thursday, October 10, 9:45 - 10:45 AM

Session overview

- Federal partners
  - NOAA: Greg Dusek & Bob Heitsenrether
  - USACE: Tanner Jernigan
  - USGS: Meg Palmsten
- Topics
  - Hardware
  - Use cases
  - Connections to WebCOOS
- Format: 15 minutes each + 15 minutes Q&A at the end

NOAA: Greg Dusek

- Greg Dusek is a physical oceanographer and the Chief Scientist for the NOAA National Ocean Service (NOS) Center for Operational Oceanographic Products and Services (CO-OPS). He also serves as the NOS lead for Artificial Intelligence (AI) and as the chair of the NOAA AI Executive Committee. Greg has studied rip currents and beach hazards for over 15 years and his research broadly focuses on coastal oceanographic product development through the intersection of data science with coastal hazards. Greg has been at NOAA for 13 years, and prior to serving as Chief Scientist, he was an oceanographer on the currents team where he led a range of physical oceanographic projects. Greg completed his PhD in physical oceanography at the University of North Carolina Chapel Hill where he studied coastal processes and rip currents.

NOAA: Bob Heitsenrether

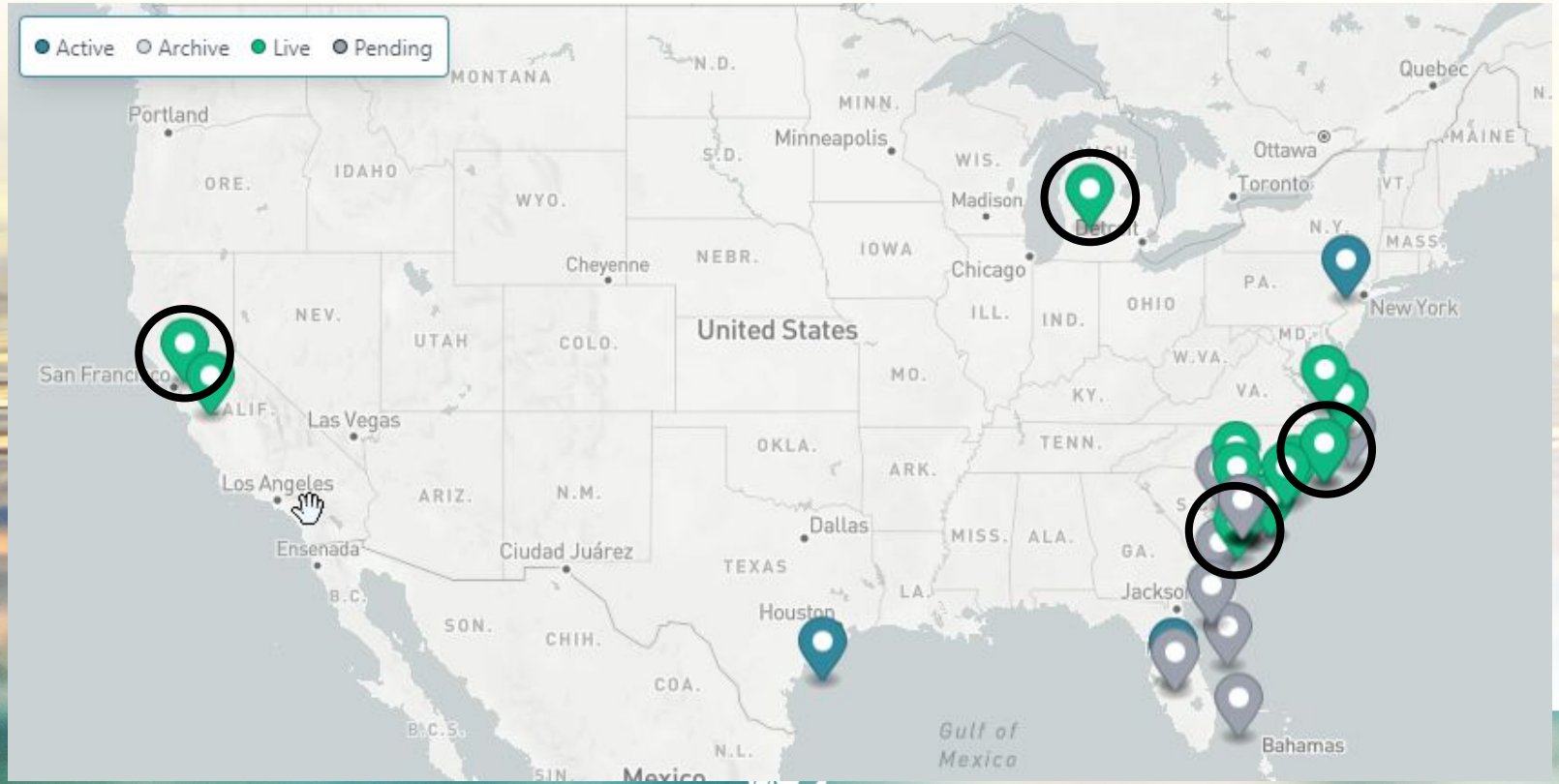
- Bob is the Manager of the Ocean Systems Test and Evaluation Program (OSTEP) at NOAA's National Ocean Service / Center for Operational Oceanographic Products and Services (CO-OPS) facilitates the transition of new technology into CO-OPS' suite of operational tools, including radar water level sensors, global positioning systems for vertical referencing of water level sensors, and easily deployed buoys for current surveys.

SECOORA

NOAA CO-OPS

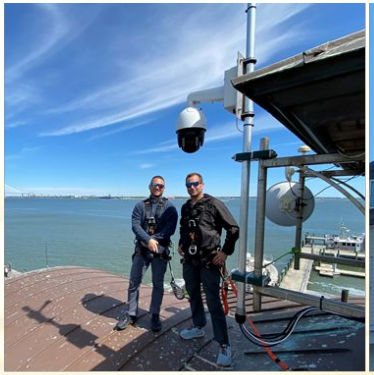
Greg Dusek, Bob Heitsenrether, Chris Sager and Matt Conlin

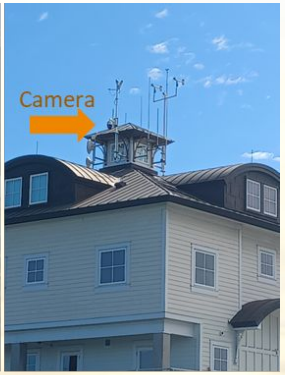
WebCOOS at CO-OPS NWLON Stations

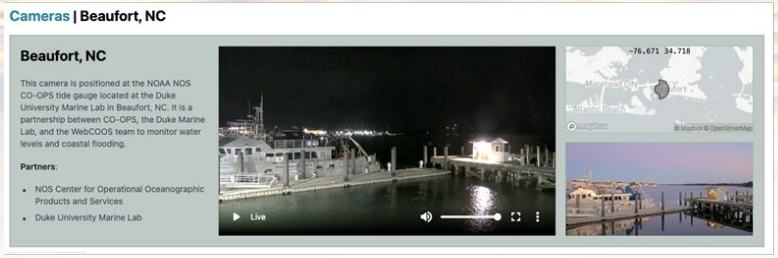


WebCOOS at CO-OPS NWLON Stations

Coastal Flood Impacts

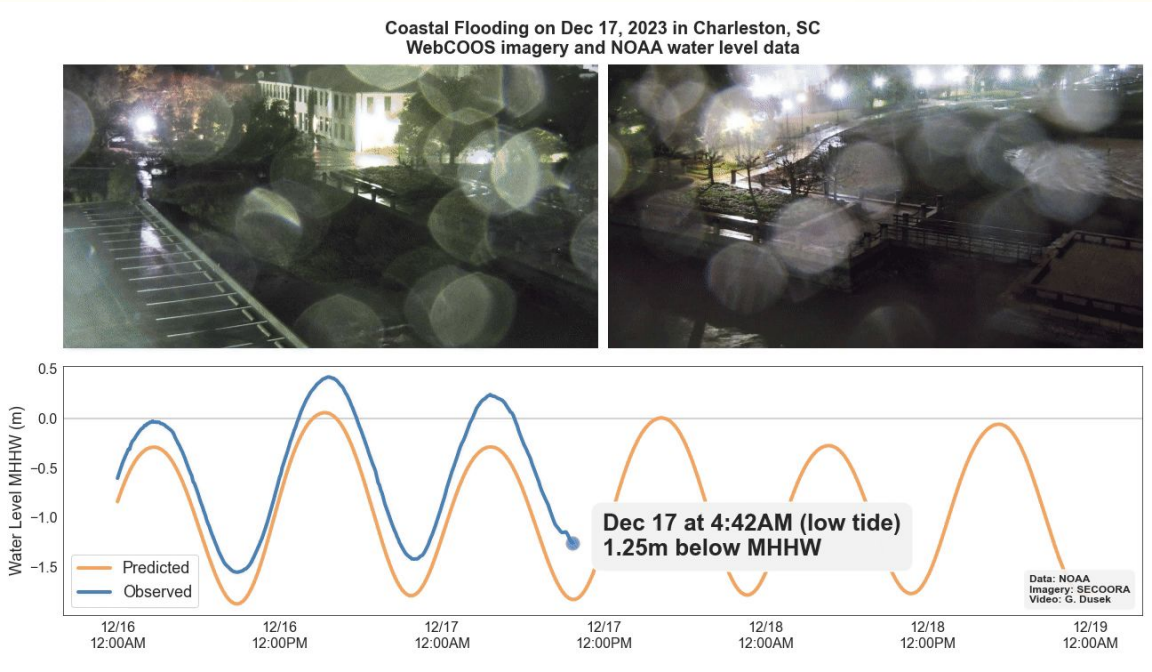






WebCOOS at CO-OPS NWLON Stations

Coastal Flood Impacts

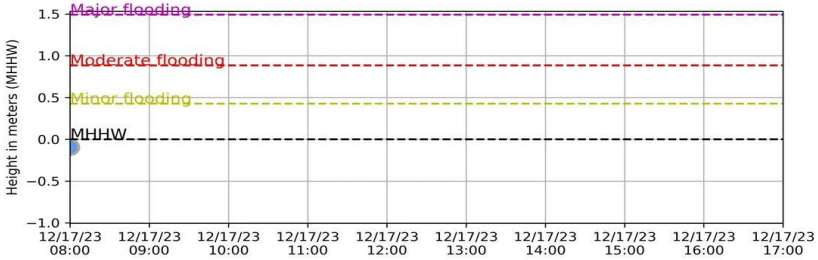


WebCOOS at CO-OPS NWLON Stations

Automated time lapse videos

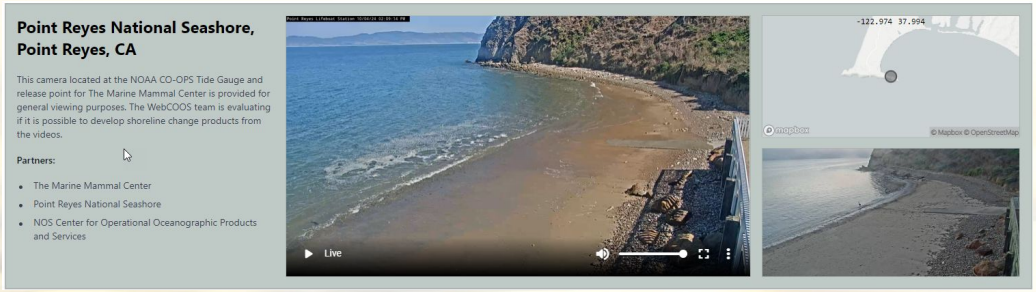
```
[ ]: import DataWebcamSyncher as dws

[ ]: camera = 'North Inlet-Winyah Bay  National Estuarine Research Reserve Dock, Georgetown, SC'
     product = 'one-minute-stills'
     station = 8661070
     time_start = '202312170800'
     time_end = '202312171700'

[ ]: synchro = dws.synch(station=station,
                         camera=camera,
                         data_product='water_level',
                         camera_product=product,
                         value='all', # Can be all, highest, or a value #
                         time_start=time_start,
                         time_end=time_end,
                         interval=1, # In minutes. Can use to only take some data points #
                         cutoff=None, # Use with value to get what you want #
                         token=token,
                         save_dir='dir')
```

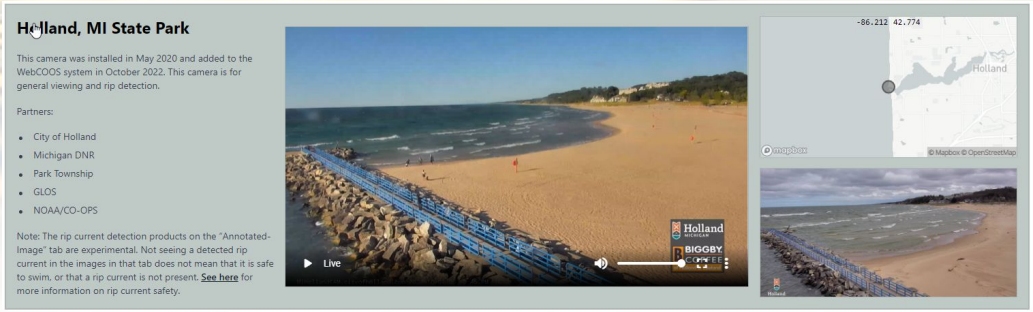
Camera: North Inlet-Winyah Bay National Estuarine Research Reserve Dock, Georgetown, SC
Gauge: 8661070



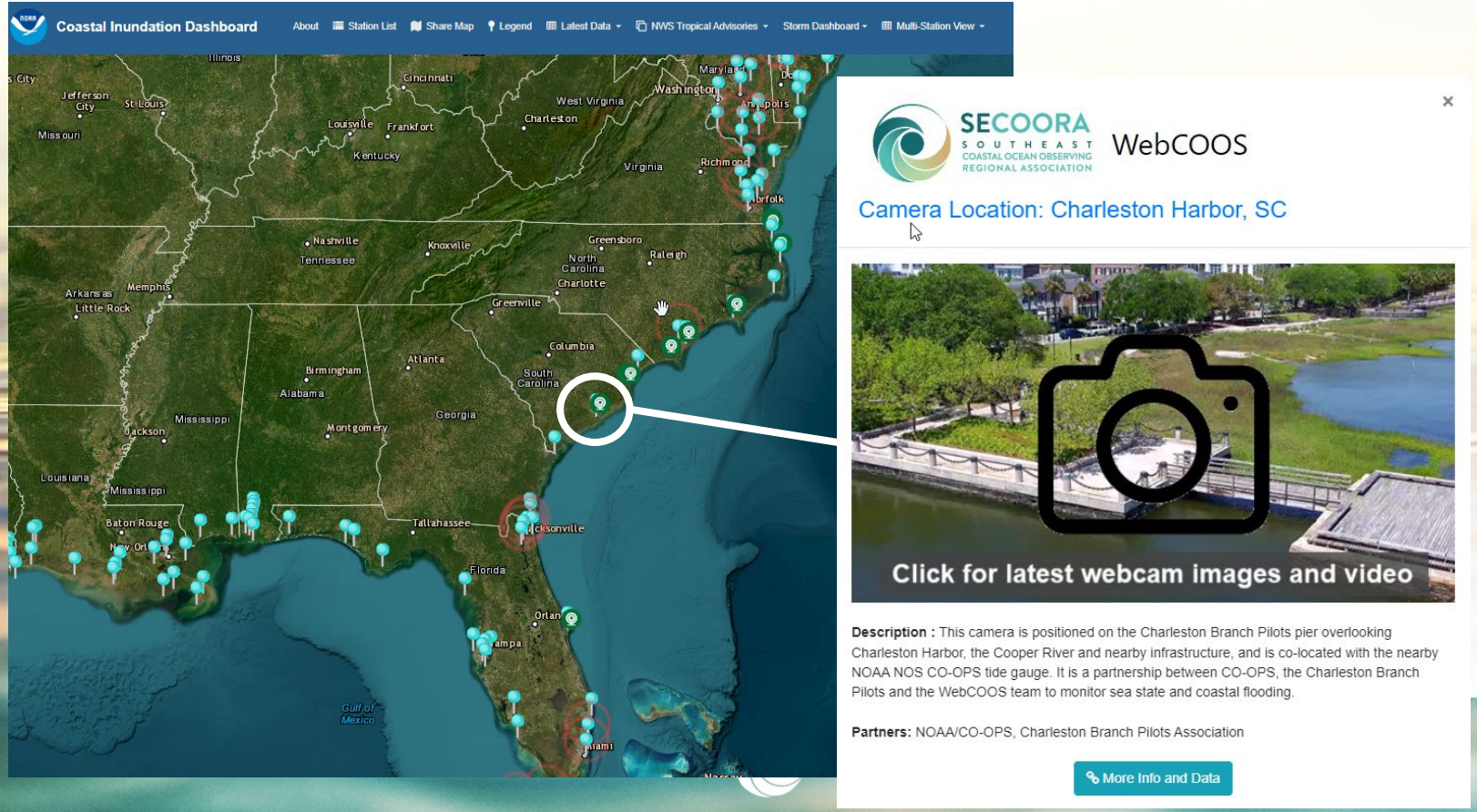
WebCOOS at CO-OPS NWLON Stations

Partner Installed Stations





WebCOOS on Inundation Dashboard

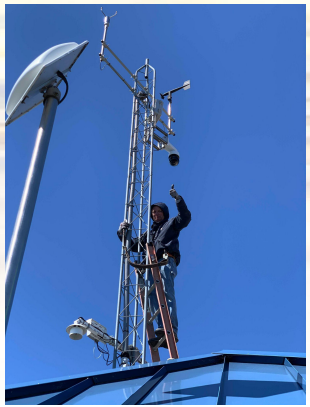


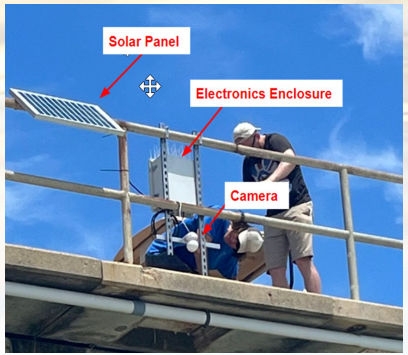
Types of WebCOOS - CO-OPS Collaborations

WebCOOS purchased - CO-OPS installed

Partner installed on CO-OPS infrastructure

CO-OPS purchased and installed





CO-OPS Recent Development and Test Efforts

Evaluating ‘standalone’ systems options for sites where solar power and wireless internet are the only option.

Top level requirements:

- WiFi or Bluetooth wireless connectivity.
- Solar rechargeable power system with components typical to NWLON power (40Ah battery, 40W solar panel, 5-12V DC power) source)
- Capability to automatically record and send out still shots and/or video clips at user configurable rate and duration, via cellular internet connection

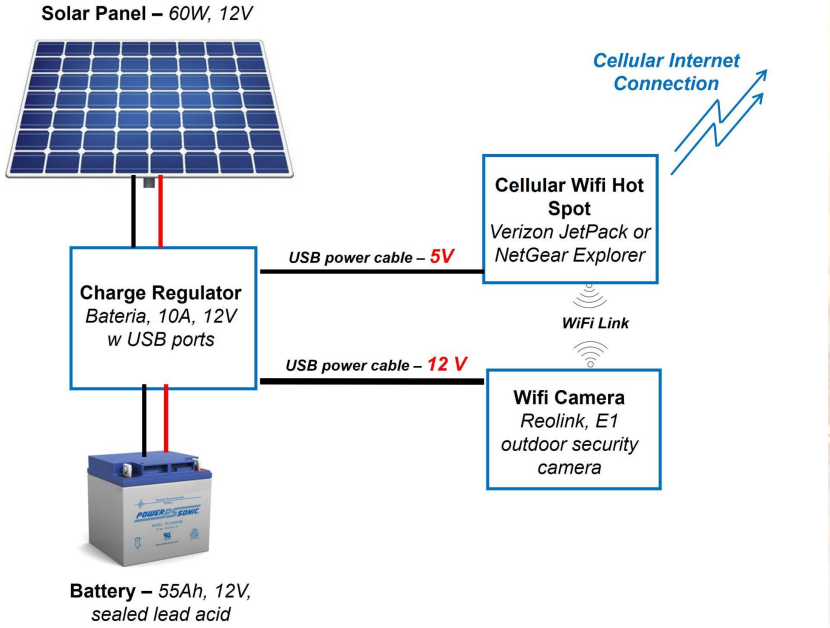
CO-OPS Recent Development and Test Efforts

Reolink, E1 outdoor security camera

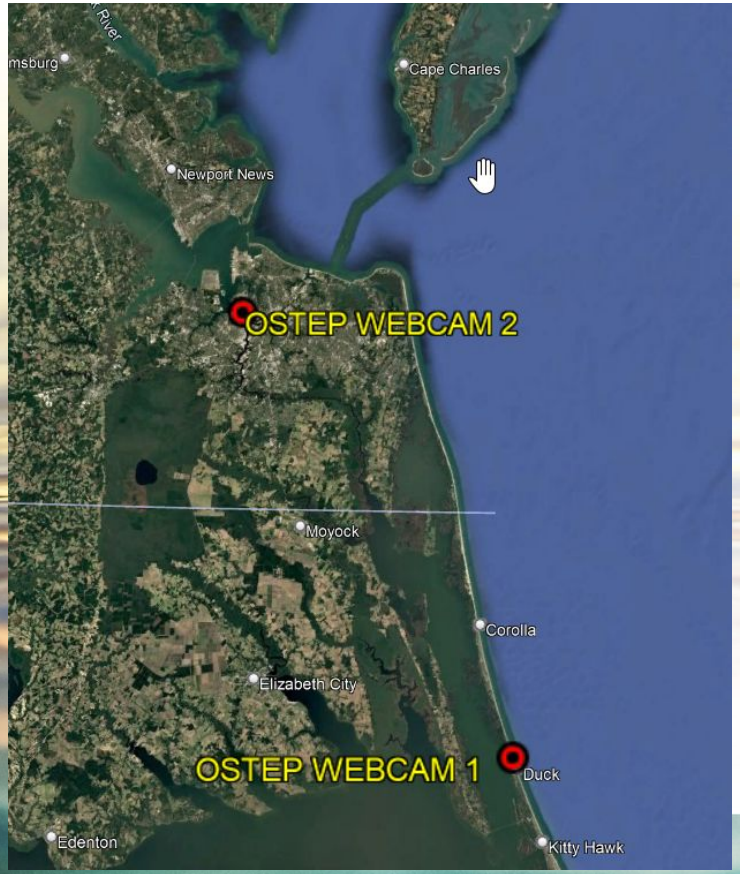
Bateria charge regulator, 10A, 12V w USB ports

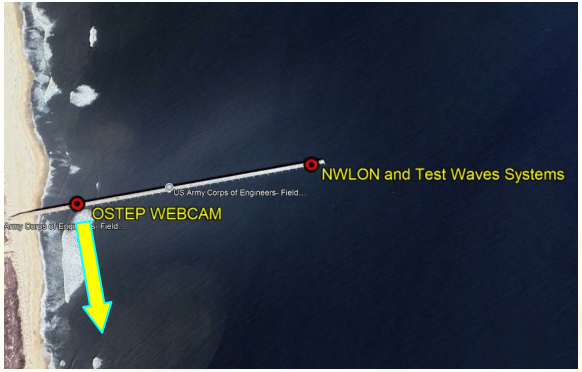
Jetpack 4G LTE Mobile Hotspot (with Verizon service)

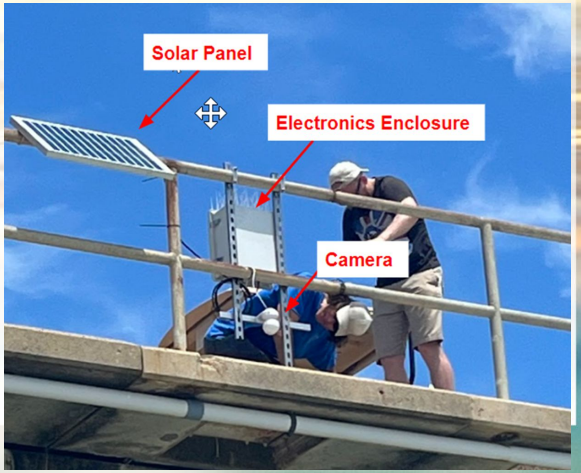
Netgear Unite Express Explorer 2 4G LTE Mobile WiFi Hotspot (with AT&T service)



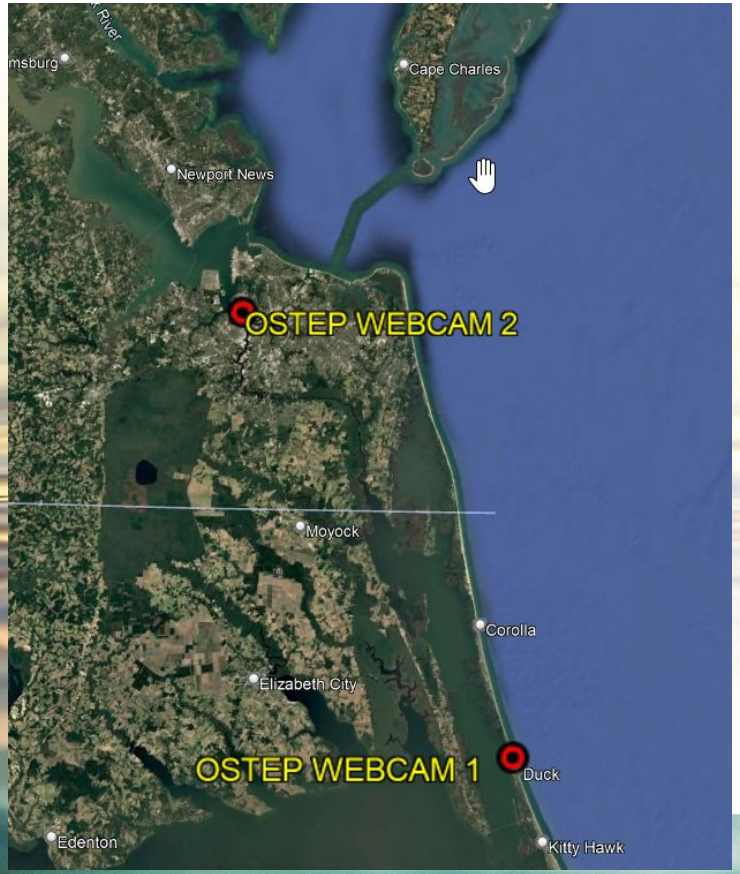
Field Testing - Duck, NC NWLON

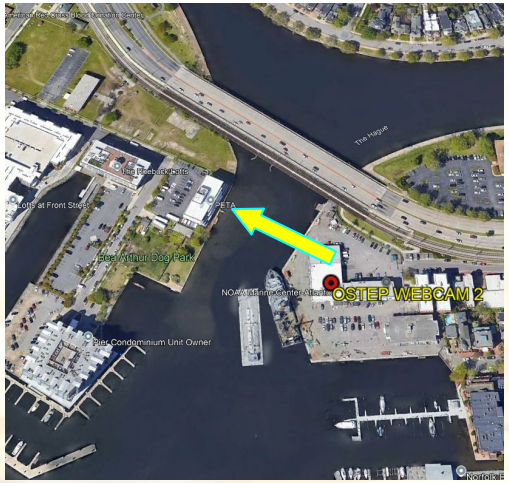


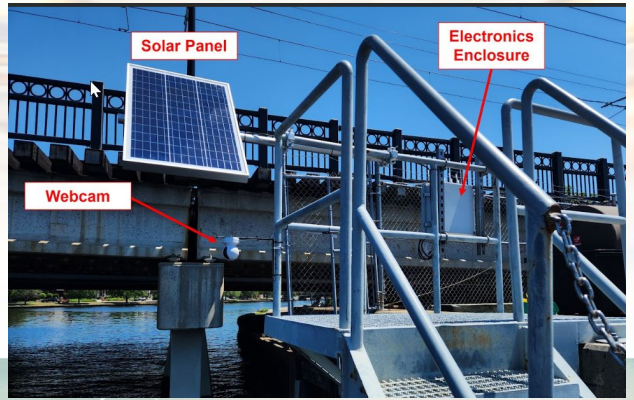




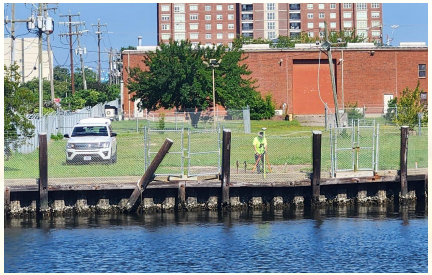
Field Testing - Norfolk, VA

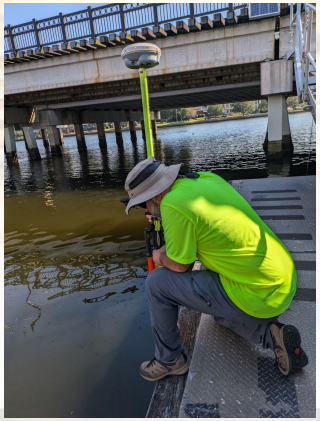


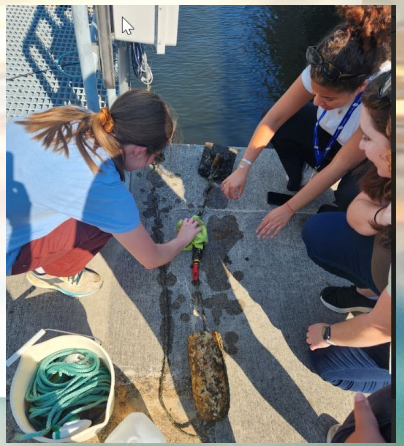


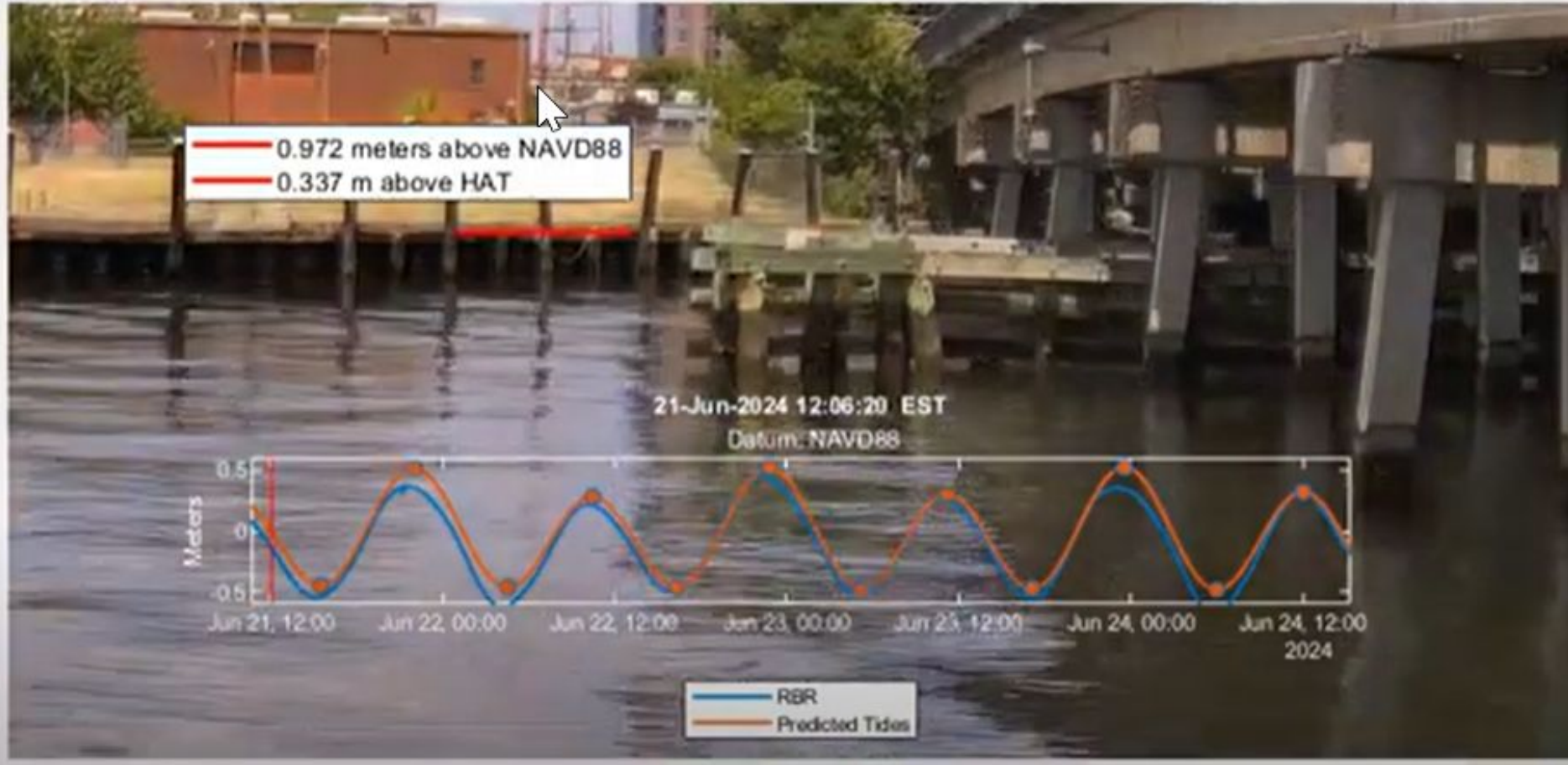


Field Testing - Vertical reference and tide gauge








0.972 meters above NAVD88
0.337 m above HAT
21-Jun-2024 12:06:20 EST
Datum: NAVD88
Meters
0.5
0
-0.5
Jun 21, 12:00
Jun 22, 00:00
Jun 22, 12:00
Jun 23, 00:00
Jun 23, 12:00
Jun 24, 00:00
Jun 24, 12:00
2024
RBR
Predicted Tides

Next Steps

- Figuring out the PII/privacy piece for displaying imagery on federal site
- Determine standard approach for broader CO-OPS - WebCOOS partnership
- Continue test/demo of standalone field systems at NWLON stations; explore alternative options
- Pursue addition of camera to CO-OPS nearshore, real-time currents buoy (CURBY)