



# Virginia Coastal Tide Gage Network

HRPDC Regional Environmental Committee  
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U.S. Geological Survey

# Outline

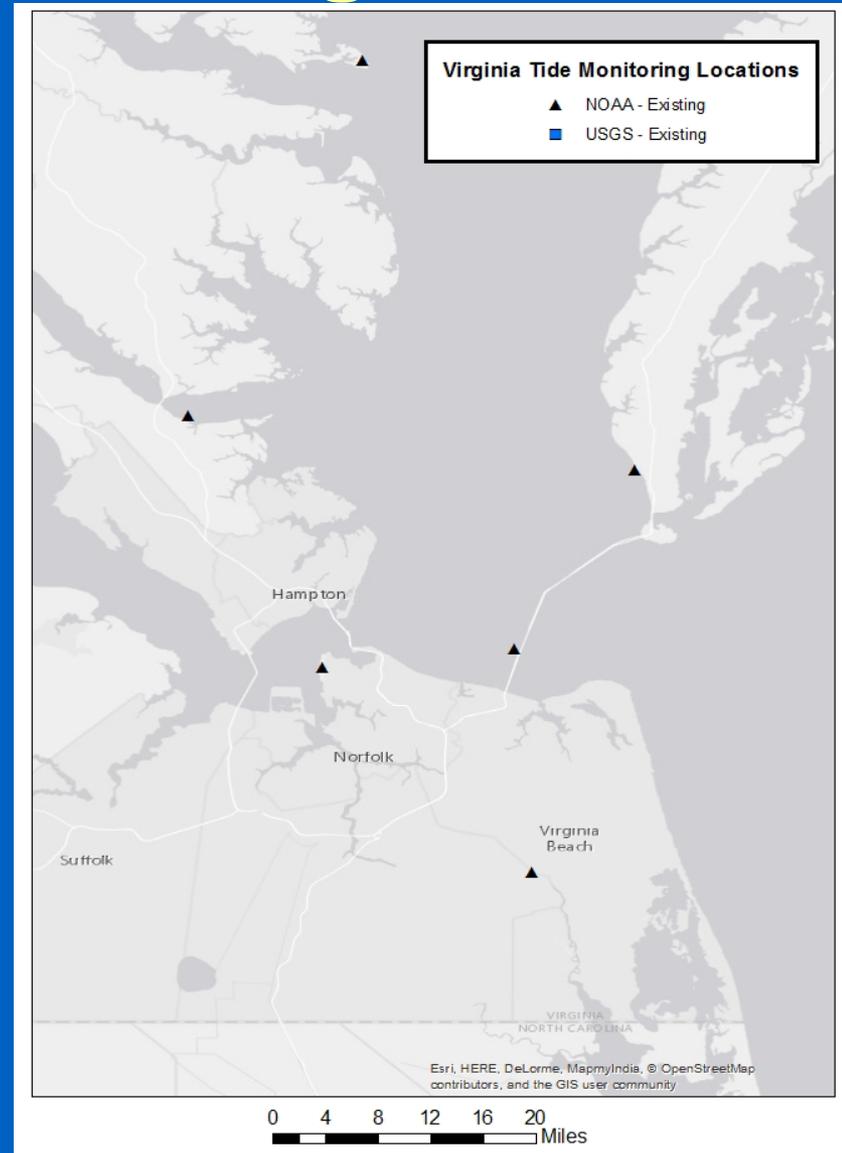
- “Superstorm Sandy” review
- Impact on Virginia coastal tide gage network
- New tidal data and availability
- What can we learn from the new gages?
- Questions

# “Superstorm Sandy”

- **Post-tropical cyclone with hurricane force winds**
  - **CAT 3 at its peak intensity**
  - **Largest Atlantic hurricane on record**
- **Impacted entire Northeast seaboard**
- **October 29-31, 2012**
- **285 Fatalities**
- **\$65 billion (estimated) in damages in U.S.**
  - **Second only to Katrina**

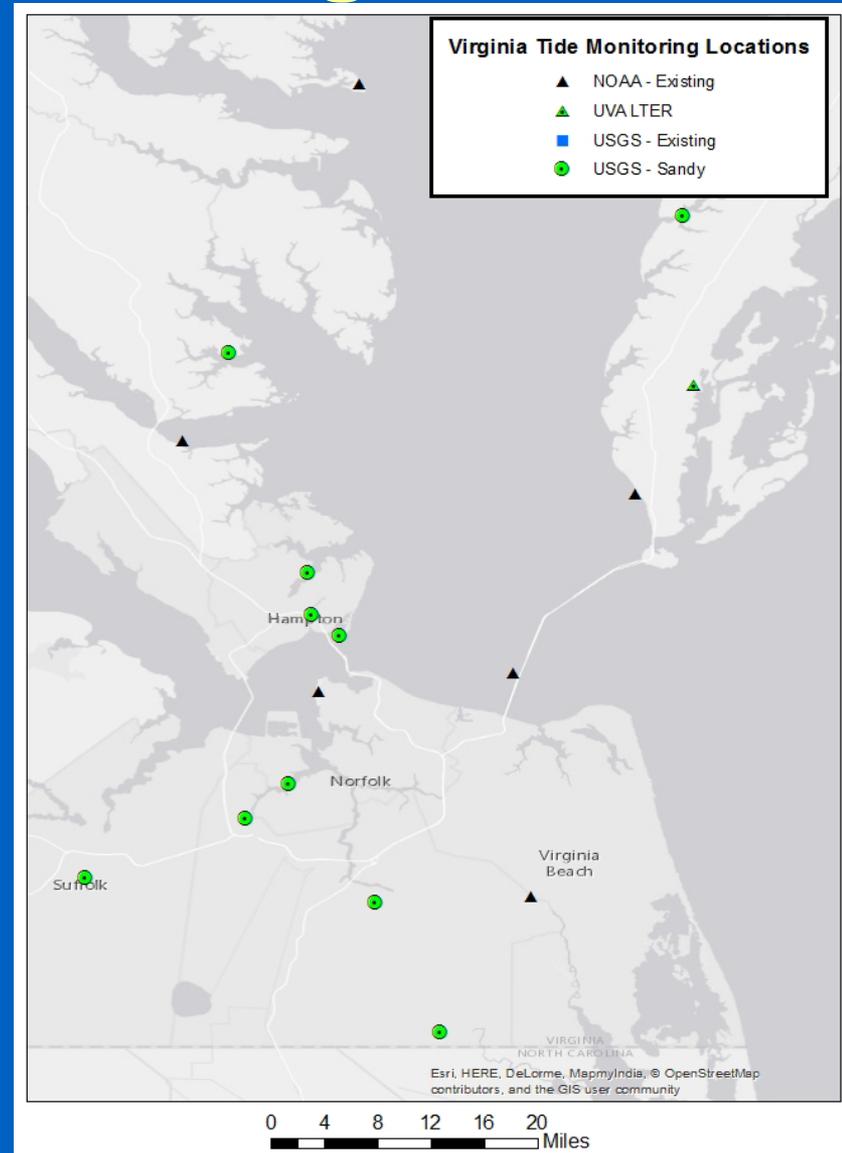
# Virginia Coastal Tide Gage Network

- Pre-Sandy:
  - 6 NOAA sites
  - 0 USGS sites



# Virginia Coastal Tide Gage Network

- **Post-Sandy:**
  - 6 NOAA sites
  - 10 USGS sites
  - 1 UVA site
- 2 additional USGS sites on Chincoteague and at Quantico



# How did that happen?!

- USGS was awarded funds from the Hurricane Sandy Supplemental Bill
- Funding allocated to Research “Themes”
  - 1 - Coastal Elevation Data and Mapping
  - 2 - Understanding Coastal Change
  - 3 - Coastal Hydrology and Storm Surge
  - 4 - Environmental Quality and Contaminants
  - 5 - Coastal Ecosystem Impacts

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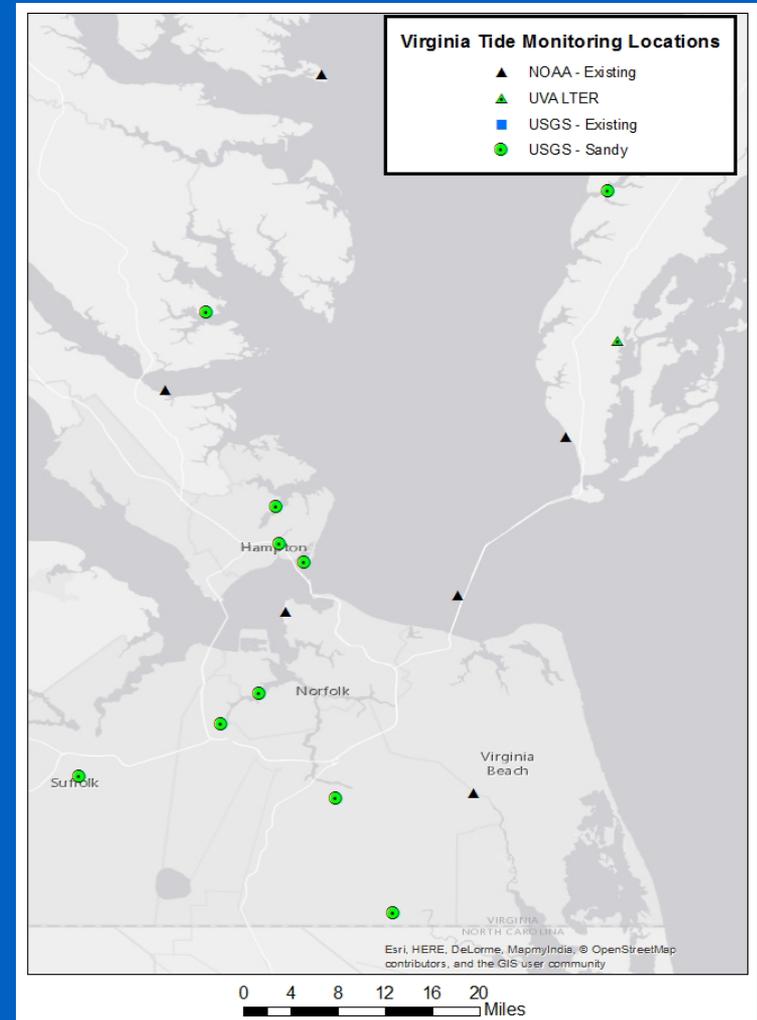
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# How did that happen?!

- “Theme 3” funds were intended to improve USGS tide monitoring network and understanding of coastal hydrodynamics
  - Temporary, rapid deployment gages
  - Hardening of existing tide gages
  - Installation of new tide gages
- For Sandy funds to be awarded for installation of new tide gages, 5-year commitment from cooperator to fund annual operation and maintenance (O&M) costs was required

# How did that happen?!

- 10 cooperators agreed to fund 12 gages
  - Gloucester County
  - Northampton County
  - Fairfax County
  - City of Portsmouth
  - City of Suffolk
  - City of Chesapeake
  - City of Hampton
  - Town of Chincoteague
  - Fort Monroe Authority
  - NASA Langley

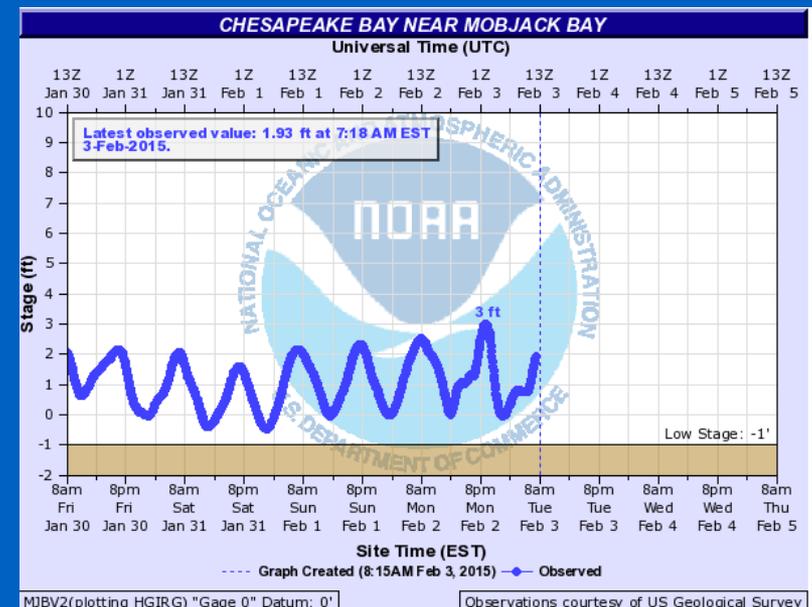
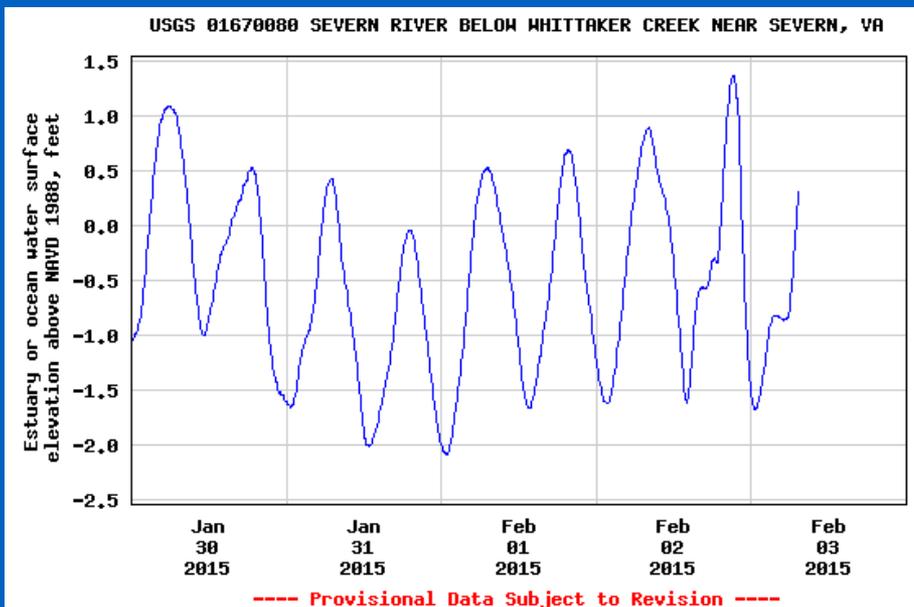


# Where's the Data?

- Data from any USGS monitoring location is available through the National Water Information System (NWIS)
  - <http://waterdata.usgs.gov/nwis/rt>
- Tide data also being served through the NWS Advanced Hydrologic Prediction Service (AHPS)
  - <http://water.weather.gov/ahps/>

# Available data

- All permanent tide gages will be reporting the following data
  - 6-minute water levels
  - Transmitted via GOES satellite hourly
  - Referenced to NAVD88 (NWIS)
  - Converted to MLLW (AHPS)



# What can we learn from the data?

## ■ Short-Term

- Local Emergency Managers will be able to make more informed decisions
- More property owners have access to information closer to their homes
- NWS can fine-tune forecast models with more data

## ■ Long-Term

- Sea-level rise
- Land-subsidence
- Trends and patterns

# Questions

