



Surge, Wave, and Tide Hydrodynamic Network

***TechSurge
Technical Support for Coastal Resiliency***

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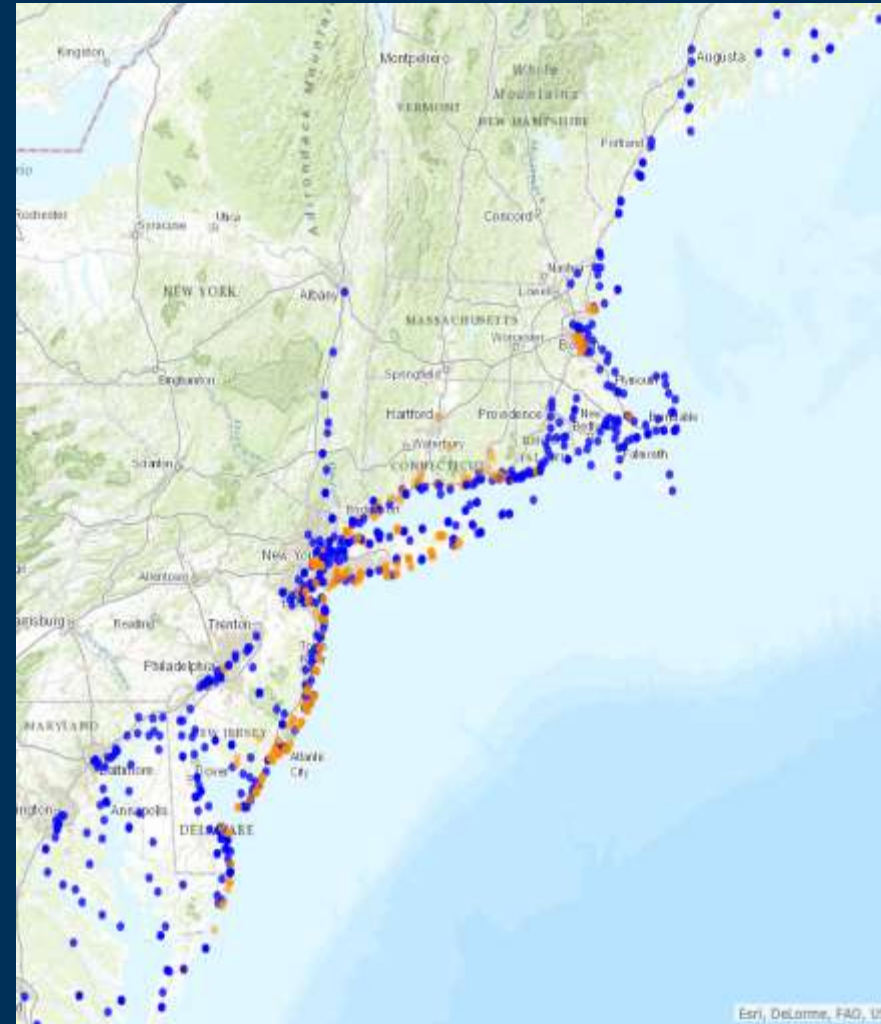
U.S. Department of the Interior
U.S. Geological Survey

Surge, Wave, and Tide Hydrodynamic (SWaTH) Network

- In response to Hurricane Sandy, supplemental appropriations were allocated to develop a Science Plan to support recovery, restoration and rebuilding
- The USGS Science Plan focuses on five broad science themes:
 1. Coastal topography and bathymetry
 2. Coastal beaches and barriers
 3. Storm tide, surge, and wave hydrology, both coastal and inland to the point of peak inundation
 4. Environmental quality and persisting contaminant exposures
 5. Coastal ecosystems, habitats, and fish and wildlife
- The SWaTH network was developed for Theme 3

SWaTH Network

- Pre-emptive network
- Collaborative effort with Federal, State and local partners, emergency managers, coastal researchers and modelers
- Long-term and temporary stations



Deployment and Data-Collection Goals

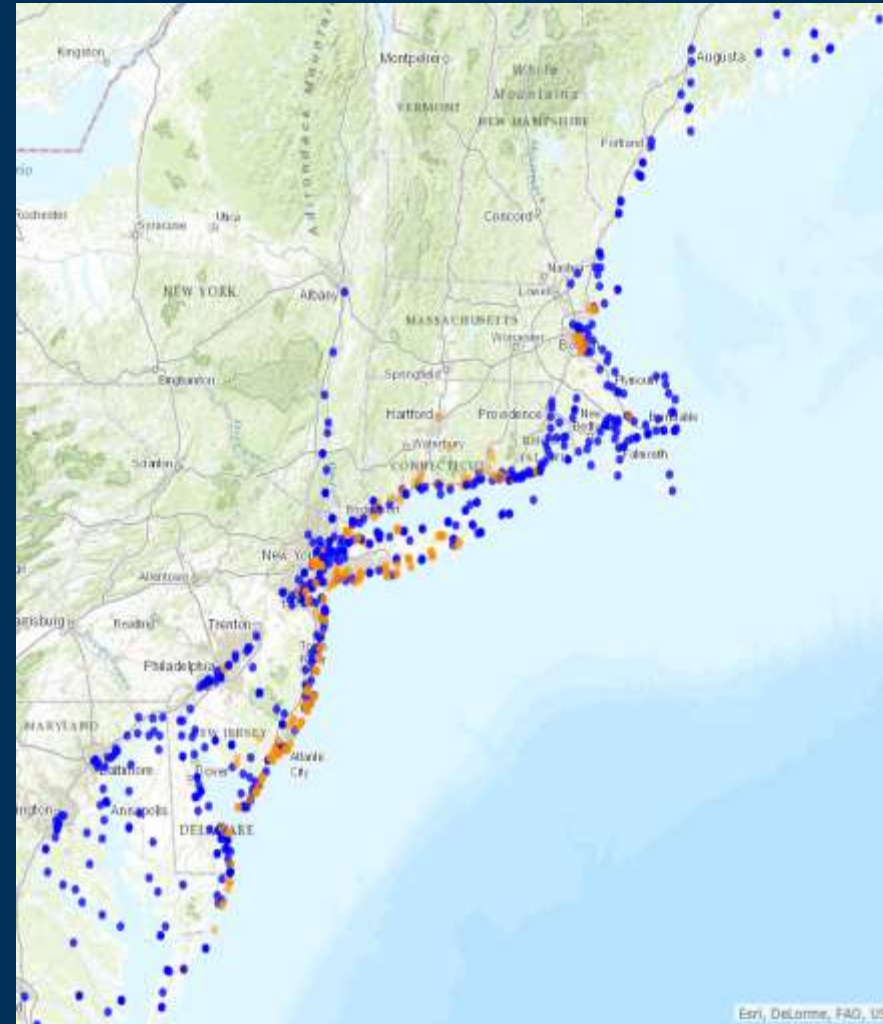
- Maximize the deployment of temporary tide and wave sensors within a network of pre-established locations
- Provide data to accurately define the scope and timing of storm tide, surge, waves, and inland flooding associated with Hurricanes and intense Nor'easters
- Establish wave-monitoring sensors along pre-selected transects that extend inland through various physical features from shore to built-up environments
- Increase our capability to provide real-time monitoring gages at locations critical to emergency managers
- Data distributed through an online mapper in near-real time or as data is collected

SWaTH Network

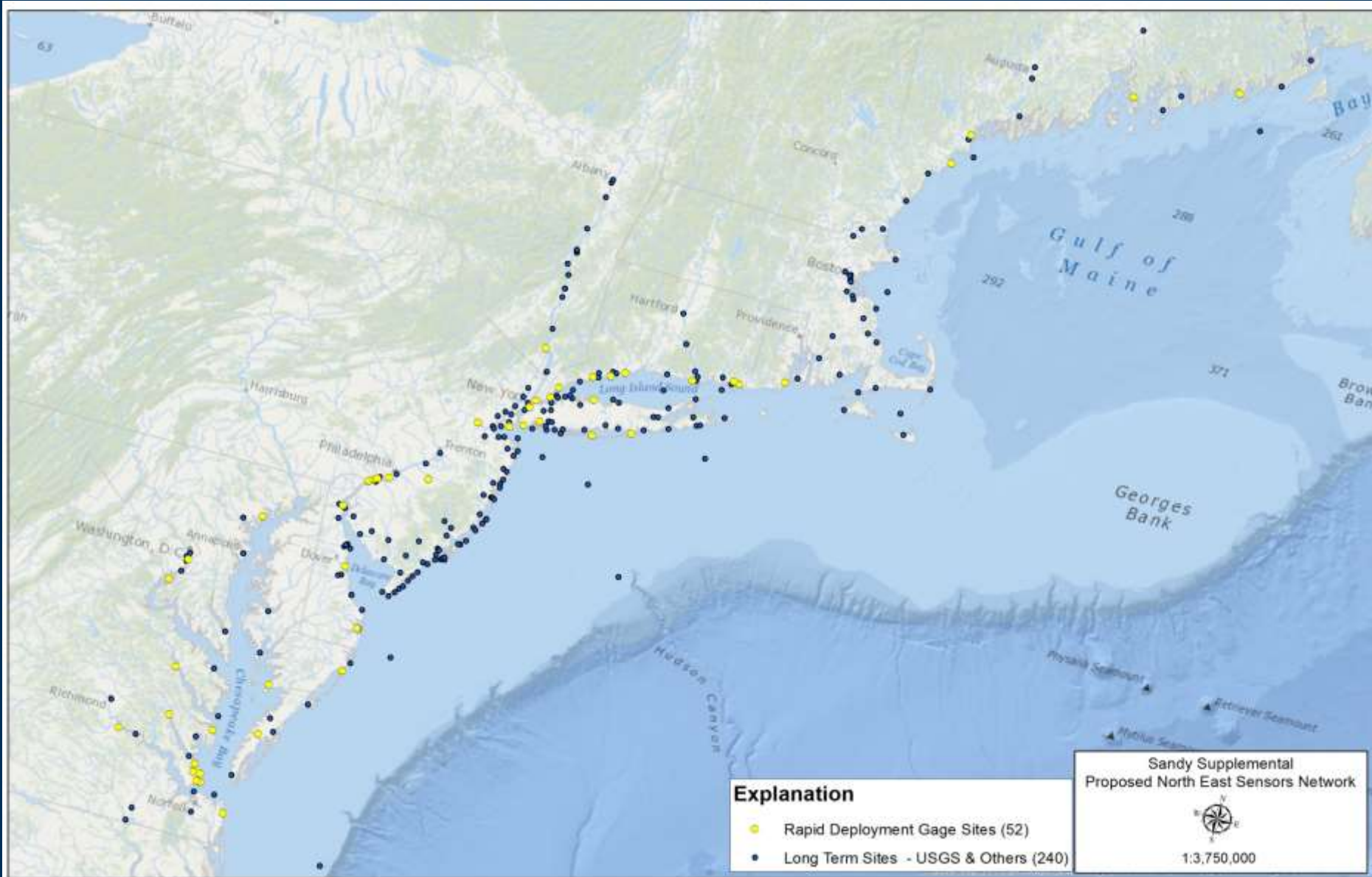
Entire proposed network consists of about 1,000 sites:

- 76 non-USGS stations
- 162 coastal stations/tidal streams
- 60 rapid-deployment gages
- 384 temporary storm-tide sensors
- 217 temporary wave sensors
- 102 temporary barometric-pressure sensors

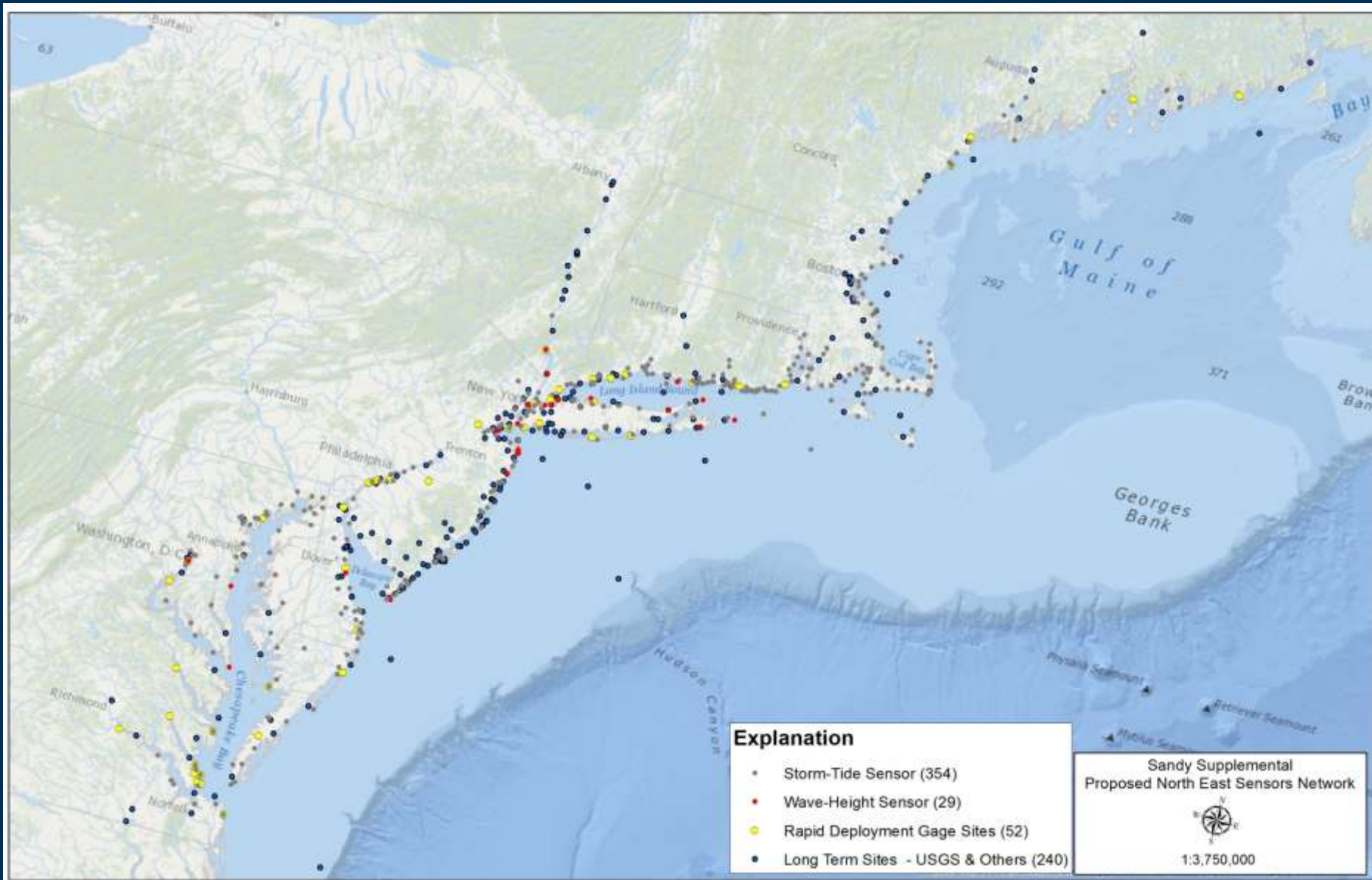
Not all stations will be fitted with sensors



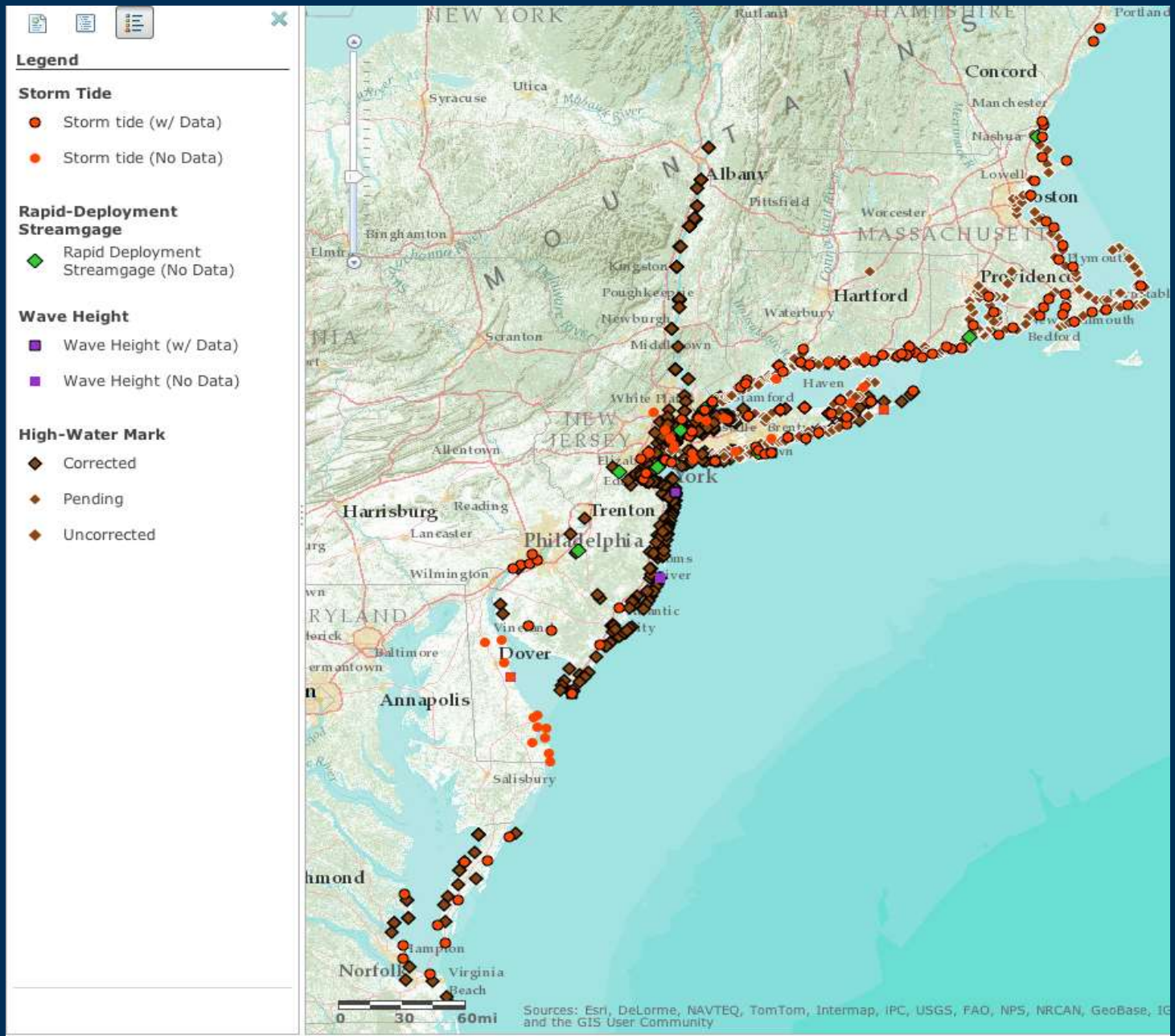
Network Design and Development



Network Design and Development



USGS storm-tide map viewer and data portal



Deployment and Data-Collection Goals - Virginia

- Focus on real-time monitoring; both at temporary and permanent locations
- Funding for construction of 6-8 permanent real-time tide stations
 - Looking for partners who would be able to fund operation of sites ~ 5k/yr
 - Cost of site operation can be cost-shared with state and local government entities through the USGS cooperative water program
- Additional funding may be available, but deadlines are quickly approaching for requesting those funds

Questions?

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