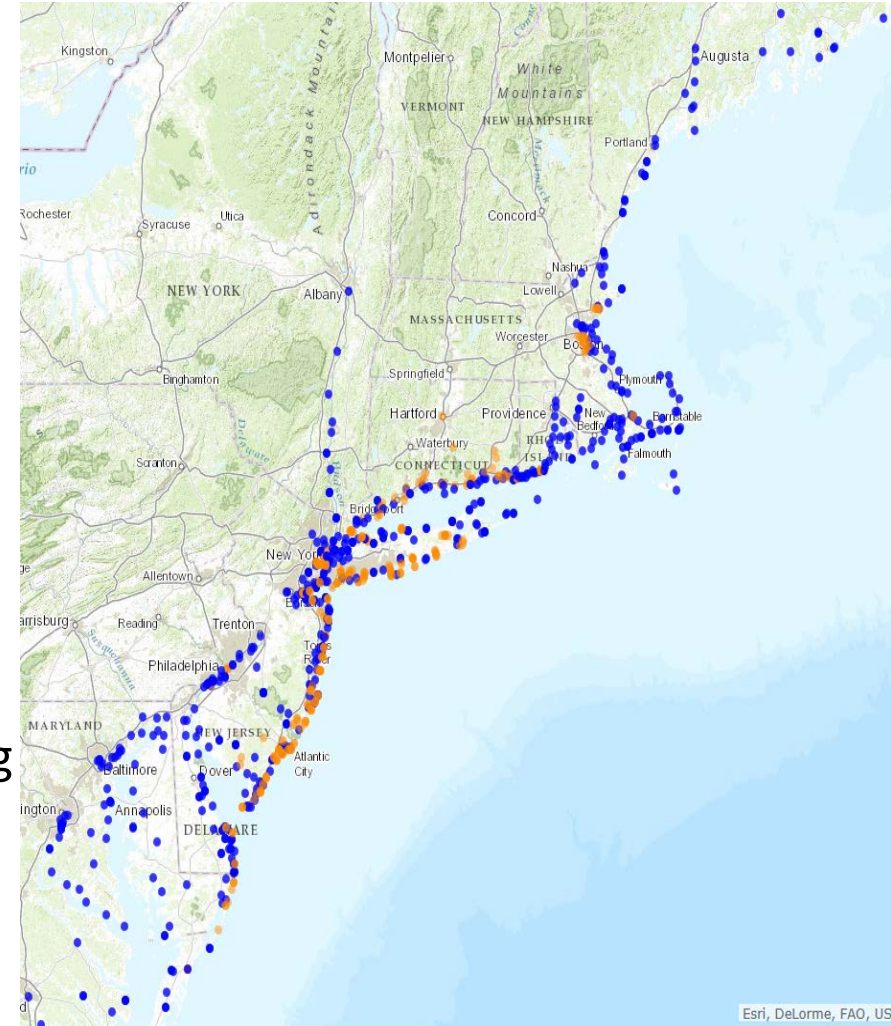


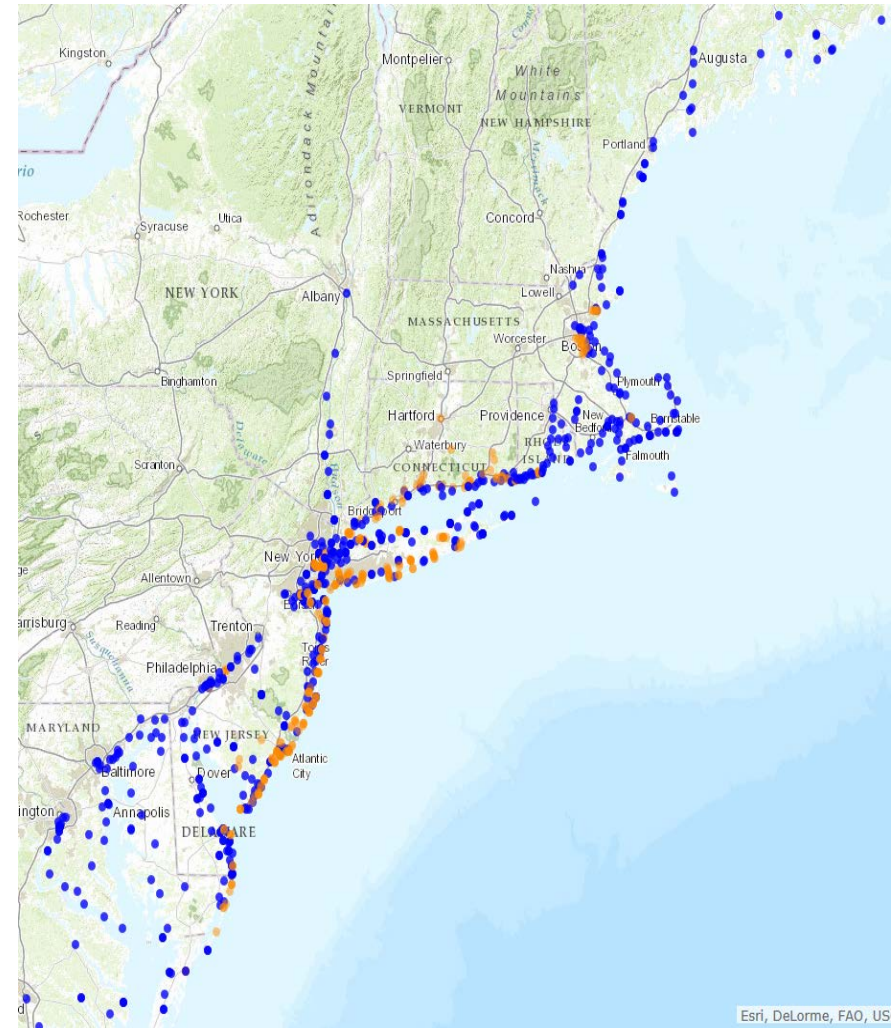
Surge, Wave, and Tide Hydrodynamic (SWaTH) Network

- 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
- Pre-emptive network
- Northeast Coast from Virginia to Maine
- Nor'easters and tropical storms of varying magnitude
- Data distributed through an online mapper termed Short-term Network

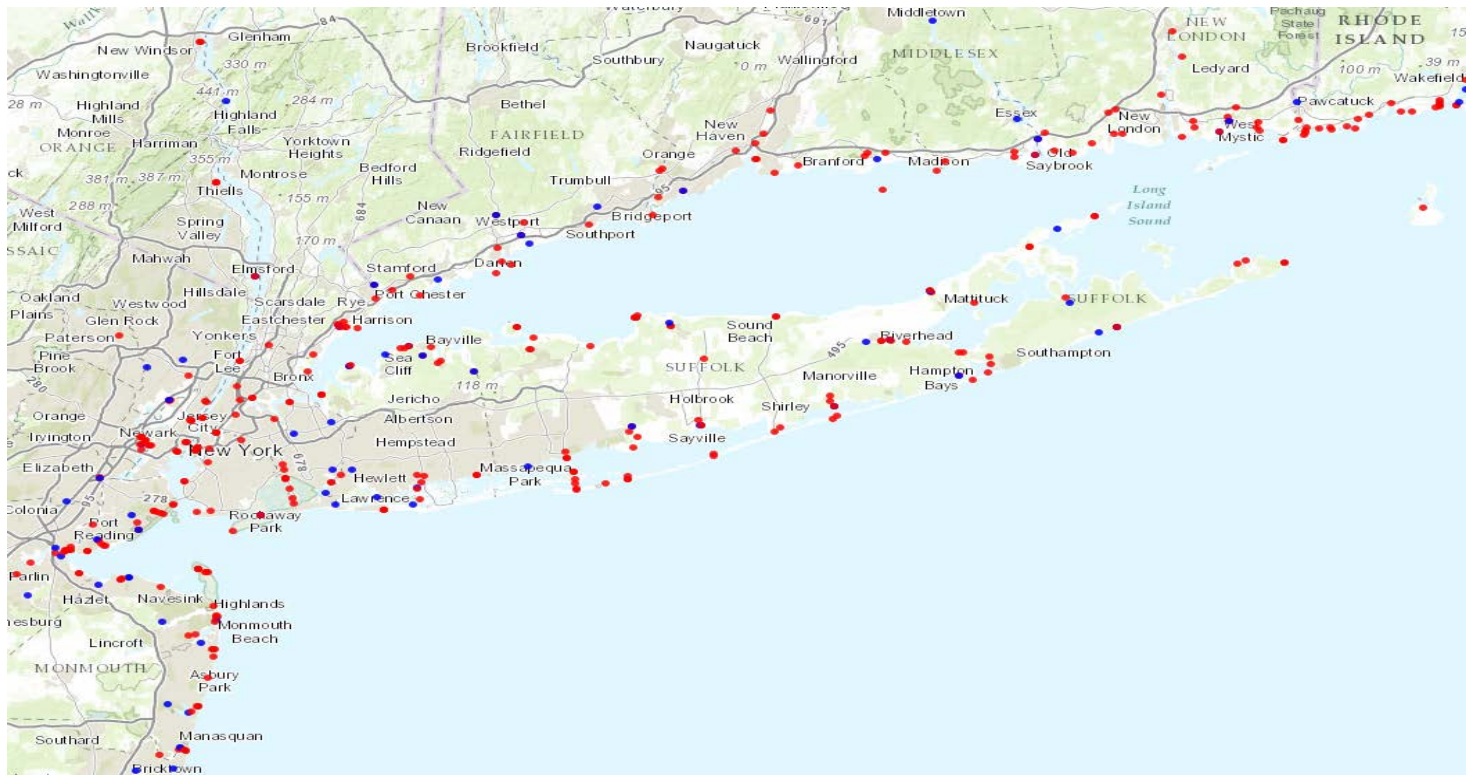


SWaTH Network

- Collaborative effort with Federal, State and local partners, emergency managers, coastal researchers and modelers
- Network design can be used in support of:
 - Coastal elevation data and mapping resiliency
 - Coastal change
 - Coastal hydrology and storm surge
 - Environmental quality and contaminants
 - Coast ecosystem impacts
- Coastal resiliency

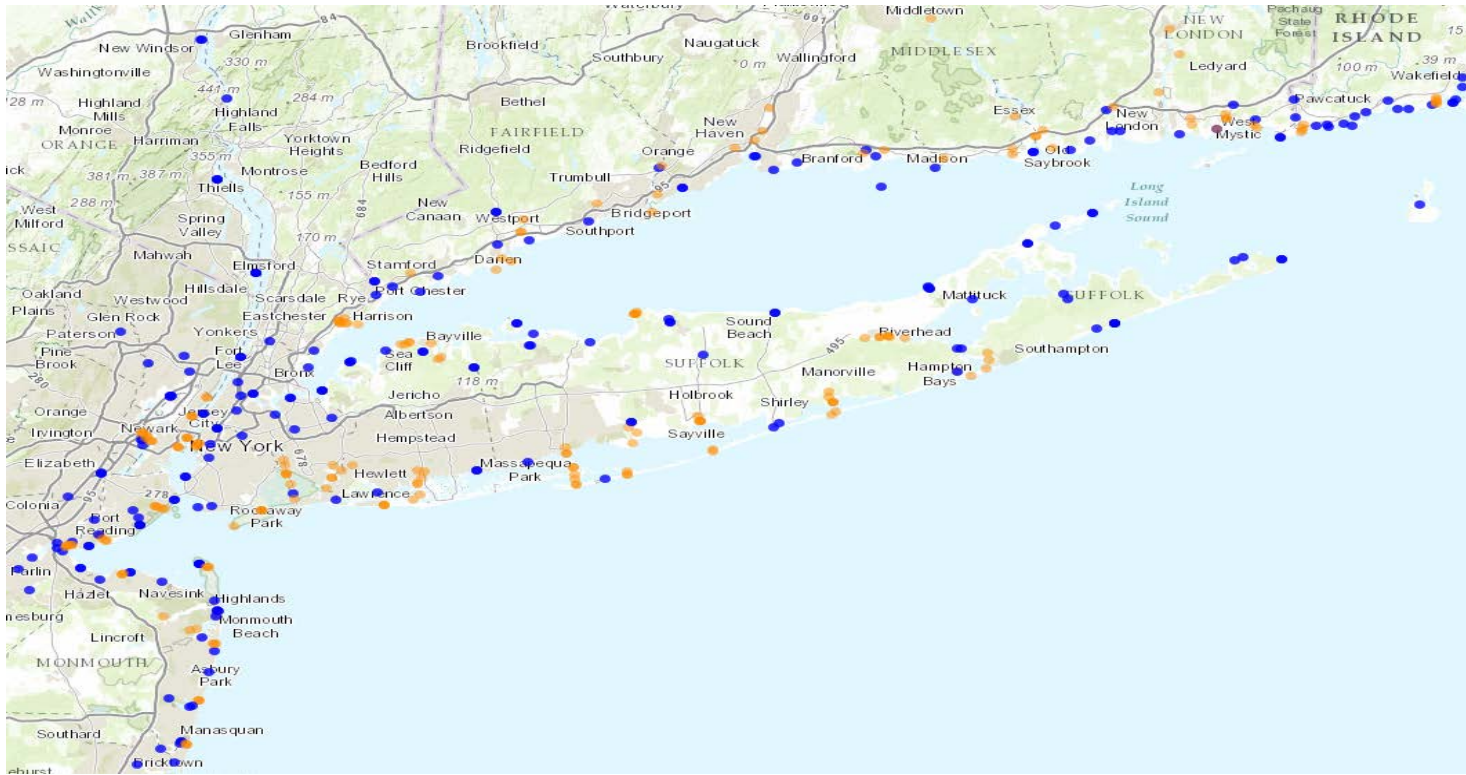


SWaTH Network



- Long Term (blue points): station such as a continuous-record coastal-monitoring station or tidal streamgage.
- Temporary (red points): storm-deployed gage such as an RDG, or storm-tide, wave-height, or barometric-pressure sensor.

SWaTH Network



- Distributed (**blue points**): stations spaced geographically to facilitate monitoring on a regional scale or for high-priority sites.
- Transect (**orange points**): stations included as part of a wetlands or urban transect (e.g. from open coast to back bays to inland).



Deployment and Data-Collection Goals

- Maximize the deployment of temporary tide and wave sensors within a network of pre-established locations
- 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 deploy real-time monitoring gages at locations critical to emergency managers, and
- Provide data to accurately define the scope and timing of storm tide, surge, waves, and inland flooding associated with Hurricanes and intense Nor'easters
- Provide a platform for collocated measurements
 - Water quality, meteorology, velocity, discharge



Deployment Schedule

The proposed timeline for deploying the temporary sensor brackets and RPs:

- Complete all existing locations (those deployed for Sandy and Irene) by July 31, 2014
- 80% complete by August 29, 2014
- 100% complete by September 30, 2014

Bracket Designs

- Sites are pre-determined and pre-surveyed, many with installed fixed-place brackets for easy storm deployment
- Data collected at 6-min. averages at coastal stations and RDGs; transmitted by GOES satellite every 15-min or more frequently as needed
- Temporary tide-sensor data collected at 1-Hz intervals (once per second) or greater, and wave sensors at 4-Hz intervals (4 times per second) and downloaded and processed



Rapid Deployment Gage

- RDGs secured to bridges or structures
- Welded aluminum box provides quick and secure deployment of real-time tide stage and meteorological data-collection
- Measures and delivers real-time:
 - Surface-water velocity
 - Discharge
 - Stage
 - Meteorological parameters



NOAA + USGS Cooperative Opportunities

- Validate riverine flood forecasts
- Overwash and storm-surge modeling
- Wave metrics
- Water velocity
- Water quality
- Coastal resiliency
- Timing and storm track
- Flood benchmarks, high water mark assessments and re-evaluations

