

Topographic & Bathymetric Monitoring and Feature Mapping Surveys (Norfolk, VA)



Project Highlights

- Semi-annual surveys completed since 2008 as a subcontractor to City of Norfolk
- Post-storm emergency surveys completed in 2009 to measure storm impact
- Digital Elevation Model of beach surface to monitor morphology of the shoreline
- Feature mapping surveys provided precise GPS location of storm water drainage pipes and timber groins

Project Location

Ocean View Beach

Client

Moffatt & Nichol, for City of

Client Contact

Brian Joyner, PE

Moffatt & Nichol

Project Description

Geodynamics is a subcontractor to the City of Norfolk (with Moffatt & Nichol engineers) to perform seamless beach and hydrographic surveys of the Ocean View Beach area as part of a long-term monitoring / shoreline management project. These surveys are performed bi-annually to monitor the morphology of the shoreline out to -21 ft NAVD 88. A Digital Elevation Model (DEM) for each survey is also generated from the profile and XYZ scatter data. The raster surfaces are then used to calculate changes in elevation across the survey area and integrated into a GIS database.

In addition to the topo-bathy profiles and longshore scatter data, Geodynamics has been contracted to perform a series of feature mapping surveys along the western end of Ocean View Beach. Precise location and elevation of storm water drainage pipes and timber groins was collected along with the detailed terrain data of select rock revetment / breakwater structures. This data proved instrumental in assisting town engineers with a removal plan for breakwaters and timber groins.

In 2009, Geodynamics conducted an emergency survey of all beach profiles to immediately document erosion caused by the combination of Hurricane Ida and a significant nor'easter storm event. This rapid response survey data provided City of Norfolk managers with precise measurements and volume calculations of storm-induced erosion.

Right: Hydrographic survey vessel and ATV topographic survey; Below: Ocean View stationed profile lines.

