

C. Vertical and Horizontal Control

Additional information discussing the vertical or horizontal control for this survey can be found in the accompanying HVCR.

C.1 Vertical Control

- The vertical datum for this project is Mean Lower Low Water.
- Standard Vertical Control Methods Used:
- Discrete Zoning

The following National Water Level Observation Network (NWLON) stations served as datum control for this survey:

Table 16. NWLON Tide Stations

Station Name	Station ID
Fort Point	8423898

Table 17. Water Level Files (.tid)

File Name	Status
8423898.tid	Observed

The entire survey area fell within one tide zone, NA169, provided by CO-OPS, NOS. This zone is based off the primary station of Fort Point, NH with no subordinate gauge. The time correction is -6mins and the range ratio is 1x. The tide file applied to the data is the observed data from Fort Point, NH with the -6 minute time correction applied.

C.2 Horizontal Control

- The horizontal datum for this project is WGS84.
- The projection used for this project is UTM zone 19N.

For precise positioning, two GNSS base stations were established in the survey area for broadcasting RTK corrections to the R/V Coastal Surveyor via Trimble Trimmark 3 radio Modems in CMR+ format. One base station was located on the roof of the Seacoast Science Center at Odiorne State Park, New Hampshire. This base station was used for one of the patch tests and some of the transit lines. The second base station was established at the Rye Harbor State Park to provide RTK corrections for the whole survey area. The reference point used was an orange stake hammered in the grass. The coordinates of the reference point (Lat 43° 00' 5.73129" N, Long 70° 44' 38.77763" W and Elevation Height of -22.887 m) were derived from 6 hours of observations on June 8, 2014 processed by the Online Positioning User Service (OPUS, <http://www.ngs.noaa.gov/OPUS/>).