

HORIZONTAL AND VERTICAL CONTROLS REPORT

Summer Hydro 2016

Project Metadata

| | |
|---------------------------|--|
| <i>Project Name</i> | Summer Hydro 2016 |
| <i>Project Number</i> | |
| <i>General Locality</i> | Salisbury Beach, MA |
| <i>State</i> | New Hampshire/Massachusetts |
| <i>Field Unit</i> | CCOM/JHC |
| <i>Chief of Party</i> | Capt Andrew Armstrong, Ret. NOAA; Semme Dijkstra |
| <i>Project Start Date</i> | 2016-06-06 |
| <i>Project End Date</i> | 2016-07-01 |
| <i>Field Year</i> | 2016 |
| <i>DAPR Version</i> | SH2016_DAPR |

Positional and Height Information Utilized for this Project

| | |
|-------------------------|--------------------------------------|
| <i>Horizontal Datum</i> | North American Datum of 1983 (NAD83) |
| <i>Realization</i> | CORS96 |
| <i>Ellipsoid</i> | WGS84(G1150) |

Non-User Installed Gauges and Stations

No non-user installed gauges or sensors were utilized during survey operations.

User Installed Stations

| | | |
|---------------------------|-------------------------|-------------------------|
| <i>CORS Station</i> | | |
| <i>Station ID</i> | <i>Station Name</i> | |
| UNH_SCIC | SeaCoast Science Center | |
| <i>Position</i> | | <i>Ellipsoid Height</i> |
| Latitude:43.0453851 | Longitude: 70.71381611 | -14.690 meters |
| <i>OPUS solution date</i> | 6/1/2015 | |



Figure 1. Seacoast Science Center Station.

Vertical Control

Final surfaces were referenced to the ellipsoid (NAD83). VDATUM was used by creating an offset grid for CARIS to apply a vertical offset. (Pydro script was modified and used.) The result is very similar to a single value offset being used for converting NAD83 to MLLW.

Final products are in MLLW.

Horizontal Control

Site ID: Fort Point

| <i>Primary Benchmark</i> | | | |
|--------------------------|--|-------------------------|---------------------|
| <i>Name</i> | <i>Position</i> | <i>Ellipsoid Height</i> | <i>Owner Agency</i> |
| Fort Point | Latitude:42.8627461667 Longitude: 70.8902628333 | -10.292 meters | CORS |

Horizontal Techniques

Overview: The primary source of RTK corrections came from the base station located at the Seacoast Science Center in Rye, NH. Format of the correction was CMR+ at 19200 baud rate.

Real-Time Kinematic (RTK)

| <i>Non-User Installed</i> | <i>User Installed</i> |
|---------------------------|-------------------------|
| N/A | Seacoast Science Center |

Discussion: The RTK corrections broadcast from the Odiorne base station was used for all of the survey work. The station was outfitted with a new more powerful modem that could broadcast corrections as far south as the Salisbury survey area. This eliminated the need for a daily or short term station to be established.

Post Processing of .000 files created SBETs for the survey.

There was some issue with signal strength of the RTK system on board the ship during the Salisbury Survey. See the DR and DAPR for a fuller description of errors and uncertainty associated with this issue.