

# Horizontal and Vertical Control Report

## Project Metadata

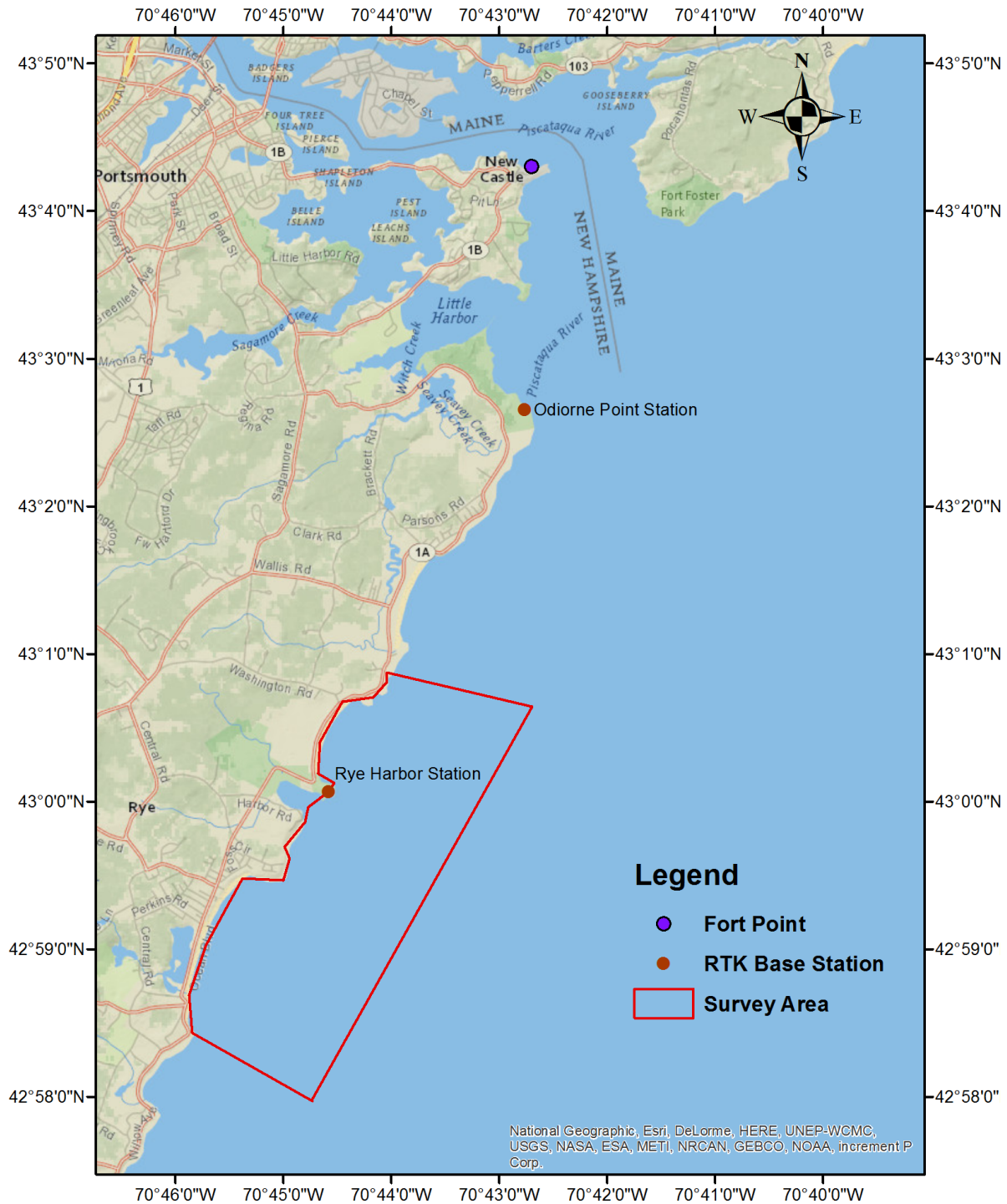
<b>Project Name:</b>	2014 Summer Hydro
<b>Project Number:</b>	2014 Summer Hydro
<b>General Locality:</b>	Concord Point to Rye Beach
<b>State or Territory:</b>	New Hampshire
<b>Field Unit:</b>	CCOM/JHC
<b>Chief of Party:</b>	Dr. Semme Dijkstra, University of New Hampshire
<b>Project Start Date:</b>	2014-06-12
<b>Project End Date:</b>	2014-07-01
<b>Field Year:</b>	2014
<b>DAPR Version:</b>	1

## Positional and Height Information Utilized for this Project

<b>Horizontal Datum:</b>	North American Datum of 1983 (NAD83)
<b>Realization:</b>	CORS96
<b>Ellipsoid:</b>	GRS 80

# Image of all Site Locations pertaining to the HVCR

## LOCATION OF SURVEY AREA



**Figure:** - Site locations

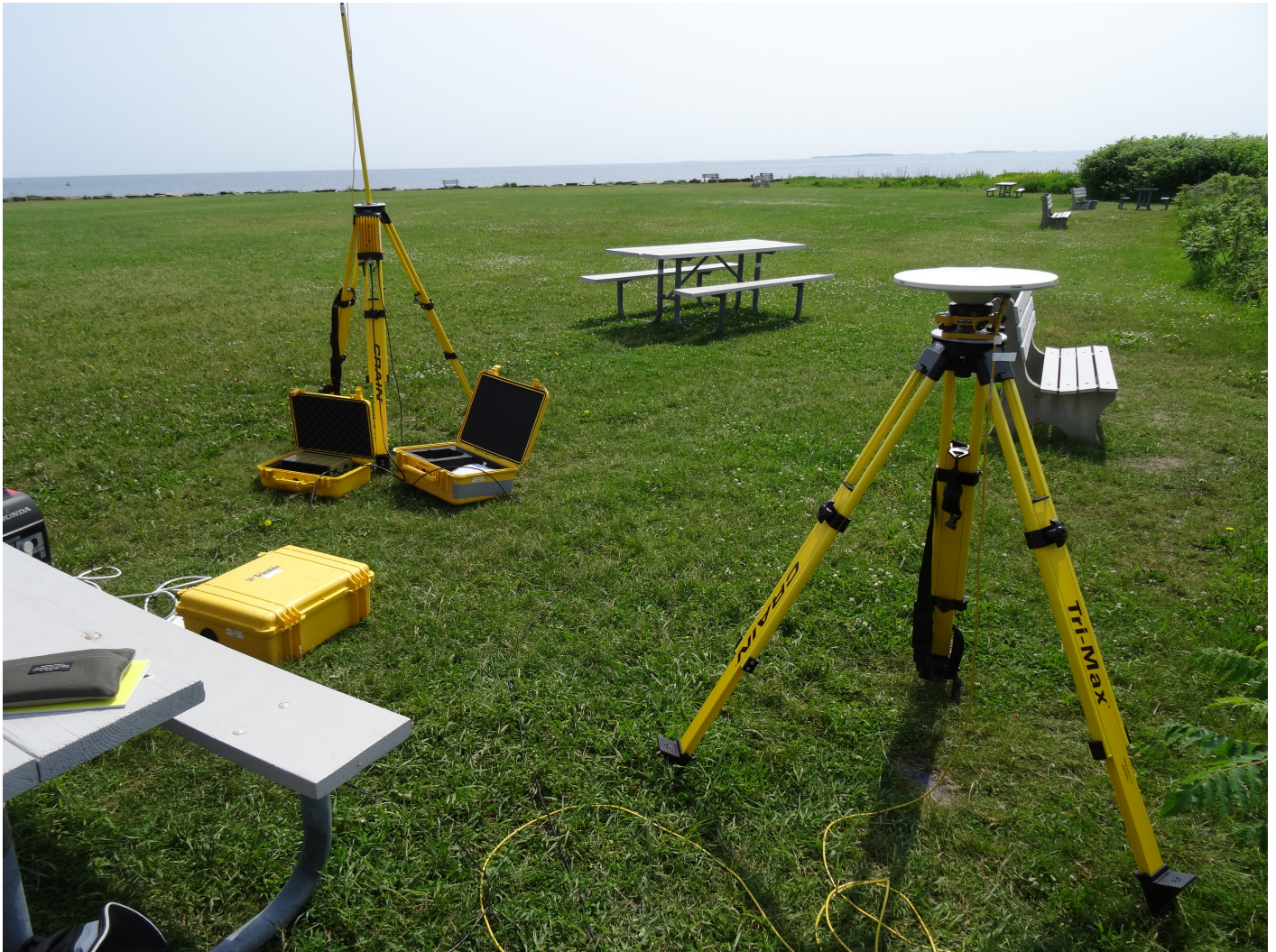
### **Non- User Installed Gauges and Stations**

<b>NWLON Gauges</b>	
<b>Station Name</b>	<b>Station ID</b>
Fort Point	8423898

There were no CORS stations utilized for this project.

### **User Installed Stations**

<b>Site Information</b>	
<b>Site ID</b>	<b>Site Name</b>
1	Rye Harbor State Park



**Figure:** - RTK Base Station

Vertical Control was not established at this site.

**Horizontal Control**

**Site ID:** Rye Harbor State Park

<b>Primary Benchmark</b>			
<b>Name</b>	<b>Position</b>	<b>Ellipsoid Height</b>	<b>Owner/ Agency</b>
Rye	Latitude: 43.0012474167	-22.511	CCOM/JHC

Primary Benchmark			
Name	Position	Ellipsoid Height	Owner/ Agency
	Longitude: 70.7442003889	meters	

Photos or rubbings of the benchmark utilized:



Figure: - Reference Point

Opus Report	J:\SH2014\HVCR_images\Rye Harbor\OPUS_20140612.pdf
Quality Control Report	
Field Observation Logs	

## Vertical Techniques

**Overview:** Mean Lower Low Water is used as vertical datum in the survey, the National Water Level Observation Network (NWLON) primary water level station at Fort Point (8423898), New Hampshire, provided water level with respect to MLLW that used to corrects the sounding value. The observed water level data was downloaded from a website of NOAA/NOS, Center for Operational Oceanographic Products and Services (<http://tidesandcurrents.noaa.gov/waterlevels.html?id=8423898>).

### Discrete Zoning

<b>Non-User Installed Sites</b>
---------------------------------

Fort Point, NH
----------------

<b>User Installed Sites</b>
-----------------------------

**Discussion:** Since survey area are 4 nautical mile from existing station, tidal zoning for survey area has been applied with respect to Fort Point as reference station. The information of tidal zoning provided by NOAA, where the survey area is located in zone of NA169 and the time corrector should be applied to the six minute data from Fort Point station. Thus, every each water level data has been subtract with 6 minutes before applied into bathymetric data.

## Horizontal Techniques

**Overview:** The North American Datum of 1983 (NAD-83) is used as the horizontal datum for this survey and projects to Universal Transverse Mercator (UTM) Zone 19N. RTK method was used during acquisition of multimedia data. Position was then supplied to the POS/MV via serial cable, and coupled with attitude via IMU, horizontal control was established. Throughout the entirety of survey operations, radio reception was continuously monitored to ensure fixed RTK was achieved.

### Real-Time Kinematic (RTK)

<b>Non-User Installed</b>
---------------------------

<b>User Installed</b>
-----------------------

Rye Harbor State Park
-----------------------

**Discussion:** The RTK based station was established at two location, Odiorne Point and Rye Harbor. Odiorne Point station is a fixed which is located on the roof of Seacoast Science Center with powered A/C supply from the building directly. Another station was established at Rye Harbor Park. The GNSS antenna was set up with respect to a mark on a bedrock at open spaces in the park. The coordinates of reference point 43° 00' 04.49071"N 070° 44' 39.12139"W, -22.511 meters wrt NGS83 ellipsoid that are provided by OPUS based on the submission of six hours observation on June 12, 2014 (DN163) with 1 second data logging rate and 5 minutes of positioning logging rate.

## Approval Sheet

**Supervision Statement:** As Chief of Party, Field operations for this hydrographic survey were conducted under my direct supervision, with frequent personal checks of progress and adequacy. I have reviewed the attached survey data and reports.

**Approval Statement:** All field sheets, this Descriptive Report, and all accompanying records and data are approved. All records are forwarded for final review and processing to the Processing Branch.

**Adequacy Statement:** The survey data meets or exceeds requirements as set forth in the NOS Hydrographic Surveys and Specifications Deliverables Manual, Field Procedures Manual, Standing and Letter Instructions, and all HSD Technical Directives. These data are adequate to supersede charted data in their common areas. This survey is complete and no additional work is required with the exception of deficiencies noted in the Descriptive Report.

**Any Additional Statements:**

Signing Personnel		
Approver Name	Approver Title	Approval Date
Dr. Semme Dijkstra	Chief of Party	2014-06-20