

Horizontal and Vertical Control Report

Project Metadata

Project Name:	Approaches to Savannah
Project Number:	OPR-G329-TJ-17
General Locality:	Approaches to Savannah
State or Territory:	Georgia, South Carolina
Field Unit:	NOAA Ship THOMAS JEFFERSON (S-222)
Chief of Party:	CDR Chris van Westendorp
Project Start Date:	2017-08-18
Project End Date:	2017-11-07
Field Year:	2017
DAPR Version:	1

Positional and Height Information Utilized for this Project

Horizontal Datum:	World Geodetic System of 1984 (WGS 84)
Realization:	G1762
Ellipsoid:	WGS 84 / GRS 80

Image of all Site Locations pertaining to the HVCR

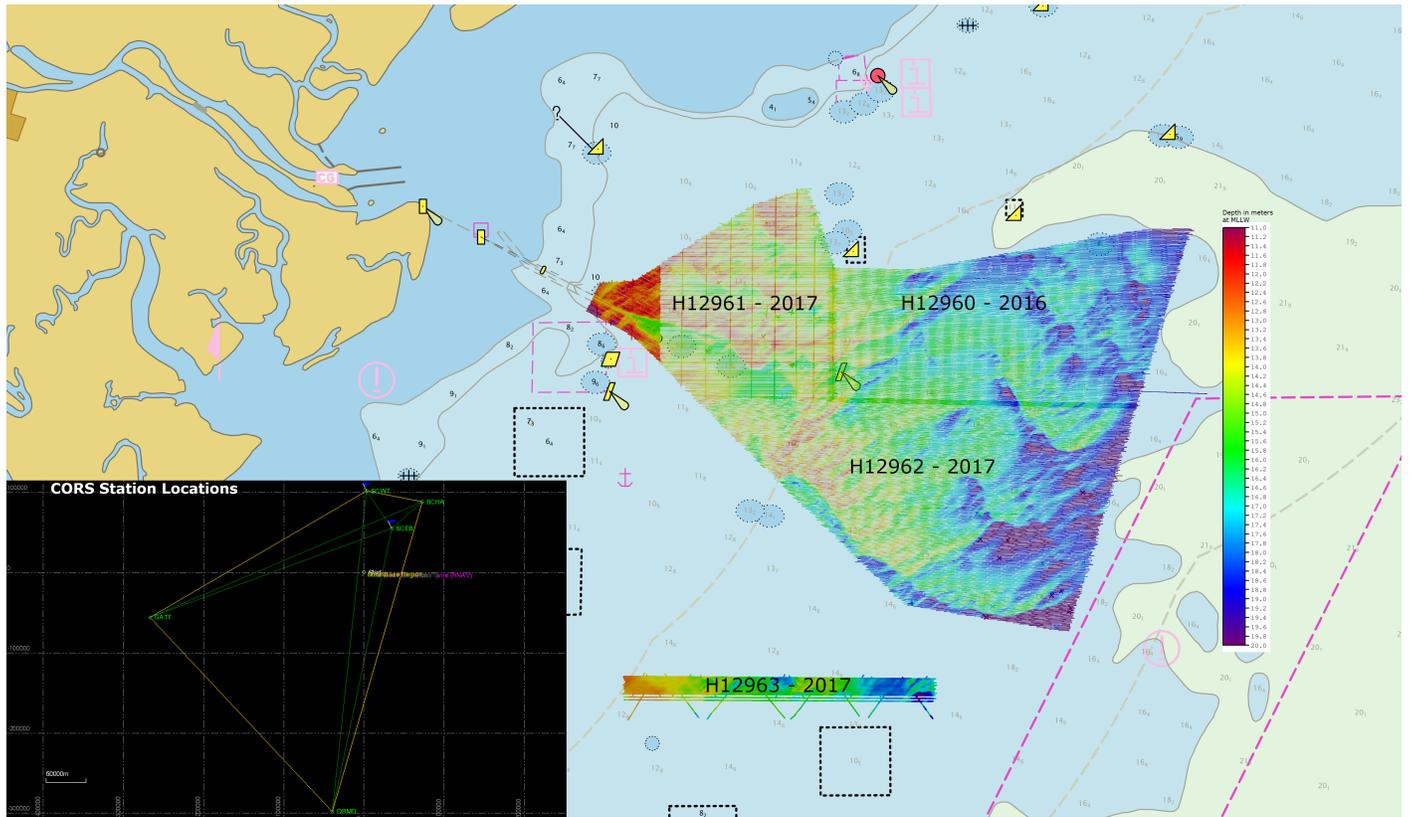


Figure: - Project area overview

Non- User Installed Gauges and Stations

There were no NWLON stations utilized for this project.

CORS Stations		
Station ID	Position	Ellipsoid Height
GATF	Latitude:31.4519070833 Longitude: -83.5091196111	97.588 meters
SCEB	Latitude:32.48298775 Longitude: -80.3321956667	-23.891 meters

CORS Stations		
Station ID	Position	Ellipsoid Height
SCHA	Latitude:32.7794701111 Longitude: -79.92536	-13.116 meters
ORMD	Latitude:29.2981859444 Longitude: -81.1088925556	-18.225 meters
SCWT	Latitude:32.9034314167 Longitude: -80.6684093889	-1.897 meters

User Installed Stations

Site Information	
Site ID	Site Name
9999	N/A

Vertical Control was not established at this site.

Horizontal Control was not established at this site.

Vertical Techniques

Overview: Soundings were collected as ellipsoidal heights using POS/MV GNSS positioning system with real-time Fugro Marinestar Precise Point Positioning (PPP) correctors. Ellipsoid-referenced depths were post-processed using PosPac MMS 8.1 for a post processed precise point positioning (5P) solution for S-222, and an inertially-aided post-processed kinematic (IAPPK) positioning solution for Hydrographic Survey Launch (HSL 2903). Soundings were then transformed using Vdatum to Mean Lower Low Water (MLLW) in Caris HIPS and SIPS 10.3.

Traditional water-level control using discrete zoning or TCARI were not used in this project, unless otherwise noted in the Descriptive Report.

VDATUM

Software Version	Geoid	Regiona lArea	Regional Area Version
3.4	2012	Georgia/South Carolina – Sapelo	N/A

Discussion: The field unit used a separation model created using Pydro Explorer v17.11 VDatum SEP from Shapefile tool to transform data acquired at WGS 84 to MLLW.

Horizontal Techniques

Overview: Horizontal control was established for S-222 using a Post-Processed Precise Point Positioning (5P) solution, and a Smart Base IAPPK solution for HSL 2903.

Post-Processing Kinematic (PPK)

Smart Base

Non-User Installed Sites
ORMD SCHA SCEB GATF SCWT
User Installed Sites

Discussion: A Smart Base IAPPK solution for HSL 2903 was calculated using PosPac MMS 8.1 for horizontal positioning and horizontal positioning uncertainty estimation, and applied to HSL 2903's navigation data in Caris HIPS and SIPS 10.3.

Precise Point Positioning (PPP)

Discussion: Horizontal positions were collected using POS/MV GNSS positioning system with real-time Fugro Marinestar Precise Point Positioning (PPP) correctors. Positions were post-processed using PosPac MMS 8.1 for a 5P solution, and applied to S-222's survey navigation data in Caris HIPS and SIPS 10.3.

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: This Horizontal and Vertical Control 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, 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
CDR Chris van Westendorp, NOAA	Chief of Party	2018-01-19
LT Anthony Klemm, NOAA	Field Operations Officer	2018-01-19