

## **TIDES AND WATER LEVELS**

NOAA tide station in Atlantic City (8534720), NJ was the source of final verified water level heights for the Mid-Atlantic Corridor, Coast of New Jersey surveys. Preliminary and verified tide data for this station were downloaded from the NOAA Tides and Currents website (<http://tidesandcurrents.noaa.gov/>). All tide data in meters were annotated with Coordinated Universal Time (UTC).

Final water level files for each tide zone were created from downloaded verified tide data using the **SABER Create Water Level Files** tool. Water level files contained water level heights that were algebraically subtracted from depths to correct the sounding for tides and water levels. These water level files were applied to the multibeam data using the **SABER Apply Tides** program within the **SABER** software.

When it was necessary to apply updated tide correctors such as verified water levels to the GSF files, the program removed the previous tide corrector and applied the new corrector. Each time a routine was run on the GSF multibeam data file, a history record was appended to the end of the GSF file. For quality assurance, the **Check Tides** program was run on all GSF files to confirm that the appropriate water level corrector had been applied to the GSF file.

After confirmation that verified water levels were applied to all multibeam data, grids were created and analyzed using various color change intervals. The color intervals provided a means to check for significant, unnatural changes in depth across zone boundaries due to water level correction errors, unusual currents, storm surges, etc.

The primary means for analyzing the adequacy of zoning was observing zone boundary crossings in the navigated swath editor, SAIC's **MVE**. In addition, cross line analysis using SAIC's **Analyze Crossings** software was used to identify possible depth discrepancies resulting from the applied water level corrector. Discrepancies were further analyzed to determine if they were the result of incorrect zoning parameters or weather (wind) conditions between the tide station and the survey area. The NOAA provided preliminary zone boundaries and zoning parameters are presented in Table C-5.

**Table C-5. Preliminary Tide Zone Parameters**

Zone	Time Corrector (mins)	Range Ratio	Reference Station
SA13	-12	1.02	8534720
SA14	-6	1.07	8534720
SA15	0	1.06	8534720