

5.0. **TIDES**

5.1. **Purpose:** All tide requirements in these instructions are in direct support of hydrographic survey operations.

5.2 through 5.6. : Refer to SI

5.7. **Vertical Datums:** Refer to SI

5.7.1. The operating National Water Level Observation Network (NWLON) stations at Boston, MA (844-3970) and Fort Point, NH (842-3898) will serve as datum control for the survey area. Therefore, it is critical that these stations remain in operation during all periods of hydrography.

5.7.1.1. **Water level data acquisition monitoring:** Refer to SI.

5.7.1.2. **Water level station operation and maintenance:** Refer to SI.

5.7.1.3. No leveling is required at Boston, MA (844-3970) or Fort Point, NH (842-3898) by NOAA Ship Thomas Jefferson personnel.

5.8. **Water Level Station Requirements:** The operating water level stations at Boston, MA (844-3970) and Fort Point, NH (842-3898) will also provide water level reducers for this project, reiterating the importance of their operation during all periods of hydrography. See Sections 5.7.1.1. and 5.7.1.2. concerning responsibilities.

5.8.1. There are no subordinate water level stations required for this project.

5.8.1.2. **This section is not applicable for this project.**

5.8.1.3 **Tide Component Error Estimation:** The estimated tidal error contribution to the total survey error budget in the vicinity of Wildcat Knoll, MA can not be computed due to a lack of available water-level time-series data.

5.9. **Zoning:** For hydrography in the area of Wildcat Knoll, Boston, MA (844-3970) and Fort Point, NH (842-3898) are the reference stations for predicted tides. Predictions may be retrieved in one month increments over the Internet from the CO-OPS Home Page at <http://www.co-ops.nos.noaa.gov/> and then clicking on “Predictions.” Predictions are six-minute time series data relative to MLLW in metric units on Greenwich Mean Time. Apply the following time and height correctors to the predicted tides at Boston, MA (844-3970) and Fort Point, NH (842-3898) during the acquisition and preliminary processing phases of this project for correcting all sounding data.

<u>Zone Name</u>	<u>Time Corrector(mins)</u>	<u>Range Ratio</u>	<u>Predicted Reference</u>
NA155	-24	x0.99	842-3898

NA156	-12	x0.99	842-3898
NA169	0	x1.01	842-3898
NA169A	+6	x1.02	842-3898
NA169B	+12	x1.05	842-3898
NA169C	+18	x1.06	842-3898
NA169D	0	x0.93	844-3970
NA170	0	x0.94	844-3970
NA174	-6	x0.94	844-3970
NA175	-6	x0.92	844-3970
NA175A	0	x0.93	844-3970
NA176	-12	x0.90	844-3970
NA177	-12	x0.87	844-3970
NA178	-30	x0.87	844-3970
NA183	-30	x0.85	844-3970
NA184	-12	x0.85	844-3970
NA185	-6	x0.85	844-3970
NA186	-6	x0.87	844-3970
NA187	-6	x0.90	844-3970
NA188	-6	x0.92	844-3970
NA189	-6	x0.94	844-3970
NA190	+6	x0.96	844-3970
NA191	+6	x0.98	844-3970
NA192	+18	x1.04	844-3970
NA193	+12	x1.02	844-3970
NA194	+6	x1.00	844-3970
NA195	+12	x1.03	844-3970
NA196	+12,	x0.98	844-3970
NA196A	+12	x0.96	844-3970
NA197	+18	x0.99	844-3970
NA199	-6	x0.83	844-3970
NA200	-12	x0.83	844-3970
NA201	-30	x0.83	844-3970
NA207	-12	x0.81	844-3970
NA208	-6	x0.81	844-3970
NA209	0	x0.79	844-3970

NOTE: The tide corrector values referenced to Boston, MA (844-3970) and Fort Point, NH (842-3898) are provided in the zoning file “A902TJ2005CORP” for this project and are in the fourth set of correctors designated as TS4. Longitude and latitude coordinates are in decimal degrees. Negative (-) longitude is a MapInfo representation of west longitude.

NOTE: For time corrections, a negative (-) time correction indicates that the time of tide in that zone is earlier than (before) the predicted tides at the reference station, whereas, a positive (+) time correction indicates that the time of tide in that zone is later than (after) the predicted tides at the reference station. For height corrections, the water level heights

relative to MLLW at the reference station are multiplied by the range ratio to estimate the water level heights relative to MLLW in the applicable zone.

5.9.1. A zoning diagram, created in MapInfo, is to assist with the zoning provided in Section 5.9.

5.9.2. Preliminary six minute water level time series data may be retrieve from the CO-OPS database via TideBot. TideBot delivers timely preliminary tidal and Great Lakes six minute water level observations via email to users on a scheduled, recurring basis. To access TideBot through an email account, send an email to TideBot@noaa.gov with the word “help” as the subject. An email reply will be sent with instructions on how to subscribe to TideBot for time series data retrieval.

5.10. Tidal Records: Refer to Standing Instructions on what data records, reports and requests to submit to CO-OPS and the address where these documents should be submitted too.

Year_DOY	Min Time	Max Time
2005_214	17:26:38	23:54:22
2005_215	00:22:02	11:39:03
2005_219	12:02:51	23:59:57
2005_220	00:00:02	12:25:13