APPENDIX G

Engineering Documentation Report
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a navigation (and construction) reference datum in coastal waterways such as the Gulf Intracoastal Waterway (GIWW) and the coastal portion of the Mississippi River navigation channel (Reference 2). MLG was intended to represent the low water level of the Gulf of Mexico, and was defined by District memorandum in 1944 as being 0.78 feet below local mean sea level as it was understood at that time.

The origin of the 0.78 foot offset between MLG and LMSL is not known precisely; however, this value is half the tidal range at the Biloxi (Cadet Point) Tidegage (NOAA gage 8743735)[1]. Therefore, MLG as defined is equal to Mean Low Water (MLW) at Biloxi. Mean Low Water is the average of all low tides, whereas Mean Lower Low Water is the average of only the lower of the two daily low tides. The Gulf of Mexico has diurnal tides (one low tide per day), so the difference between MLW and MLLW is academic. At Biloxi, the two are approximately one-tenth of one foot apart, which is beyond the precision of either dredging or hydrographic surveying. Consequently, it seems very likely that MLG was intended to represent the average low tide condition in the Gulf of Mexico, so that a given draft in MLG would be, on average, navigable during low tide.

Mean Lower Low Water is presently 0.46 ft. below local mean sea level at Pilottown, LA, and 0.6 ft. below local mean sea level at Pilot's Station East (at the mouth of Southwest Pass).[2] Therefore, in theory, MLG and MLLW are essentially equal as they are within 0.2 - 0.4 ft, as related to MSL.

The intent and application of MLLW and MLG were and are, also in theory, defined to represent the same water condition; as a tidal datum of a lowest daily water level that will be typically observed for that location.

However, MLG was and is not currently maintained under the rigors to be viable as a current tidal datum. Its update is not under the auspices of any agency or authority. In practice, it has become a localized reference, or in this case, a series of local staff gages referenced with MLG, and in this report, the localized reference is referred to in this document as MLG^{SWP}. Alternatively, MLG^{SWP} represents the use of MLG, in practice. This report is not defining a new datum or new epoch to MLG via ^{SWP} superscript.

1.2 Gaging Network Usage along Southwest Pass

The Survey Section Stream Gaging Unit (SGU) has maintained a series of gages along Southwest Pass, which were set and maintained to NGVD29. For ease of use another series of gages were set to the MLG datum by applying the commonly used 0.78 ft. offset. Over the years the SGU gages were surveyed and moved as necessary to allow them to properly reference NGVD29. The MLG gages were not moved as necessary in order to maintain the 0.78 ft offsets.

[1] The published tidal datums can be found on NOAA's webpage for each gaging station.
Biloxi (Cadet Point): https://tidesandcurrents.noaa.gov/datums.html?id=8743735
[2] Pilottown: https://tidesandcurrents.noaa.gov/datums.html?id=8760922
Pilot's Station East: https://tidesandcurrents.noaa.gov/datums.html?id=8760721 .