UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
Silver Spring, Maryland 20910

TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE: October 6, 1999

HYDROGRAPHIC BRANCH: Pacific
HYDROGRAPHIC PROJECT: OPR-0340-RA
HYDROGRAPHIC SHEET: H-10883

LOCALITY: Approach to Glacier Bay, AK
TIME PERIOD: May 10 - May 20, 1999

TIDE STATION USED: 945-2542 Point Gustavus, AK
Lat. 58° 22.9'N Lon. 135° 55.6'W
PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 4.056 meters

TIDE STATION USED: 945-2437 Excursion Inlet (South End), AK
Lat. 58° 25.0'N Lon. 135° 26.8'W
PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 4.248 meters

REMARKS: RECOMMENDED ZONING
Use zone(s) identified as: SEA23, SEA27, SEA28, SEA29, SEA30, SEA31, SEA32 & SEA50

Refer to attachments for zoning information.

Note 1: Provided time series data are tabulated in metric units (meters), relative to MLLW and on Greenwich Mean Time.

Note 2: Use tide data from the appropriate station with applicable zoning correctors for each zone according to the order in which they are listed in the Tidezone corrector files. For example, tide station one (TS1) would be the first choice for any zone followed by TS2, etc. when data are not available.

Note 3: Juneau, AK and Skagway, AK were used as datum control for subordinate tide stations and for tidal zoning in this hydrographic survey. Accepted datums for these two stations have been updated recently and have changed significantly from previous values.

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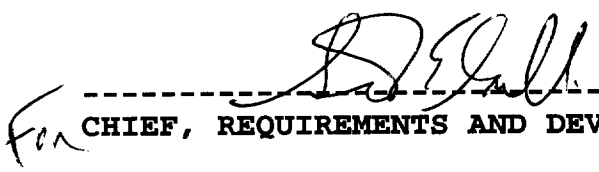
The current National Tidal Datum Epoch (NTDE) used to compute tidal datums at tide stations is the 1960-78 NTDE. Traditionally, NTDEs have been adjusted when significant changes in mean sea level (MSL) trends are found through analyses among the stations of the National Water Level Observation Network (NWLON). Epochs are updated to ensure that tidal datums are the most accurate and practical for navigation, surveying and engineering applications and reflect the existing local sea level conditions. For instance, analyses of sea level trends show that a new NTDE is necessary and efforts are underway to update the 1960-78 NTDE to a more recent 19-year time period.

However, analyses also show that there are several geographic areas which are strongly anomalous from the average sea level trends found across the NWLON and must be treated differently. One of these areas is in southeast Alaska covering the Lynn Canal, Icy Strait, and Glacier Bay region. Juneau and Skagway show relative sea level trends of -0.038 ft/yr and -0.052 ft/yr, respectively due to land emergence from the retreat of glaciers over recent geological time. NOS has adopted a procedure of computing accepted tidal datums for these anomalous regions by using a MSL value calculated from the last several years of data rather than the 19-year NTDE. The accepted range of tide is still based on the 19-year NTDE and, when applied to the updated MSL, will result in updated values for Mean High Water (MHW) and Mean Lower Low Water (MLLW) derived through standard datum calculation procedures. For both Juneau and Skagway, the MSL values were computed from the period of 1994-1998. This resulted in a lowering of the MLLW datums relative to land by -0.40 ft at Juneau and -0.53 ft at Skagway compared to the previous MLLW elevations used in last year's surveys. Subordinate tide stations in the area used for hydrographic surveys and controlled by Juneau or Skagway will be affected similarly. Accepted datums have been computed and may be accessed on the Internet through the URL specification http://www.co-ops.nos.noaa.gov.



For CHIEF, REQUIREMENTS AND DEVELOPMENT DIVISION

Final tide zone node point locations for OPR-O340-RA-99,
Sheet H-10883.

Format: Longitude in decimal degrees (negative value denotes Longitude West),
Latitude in decimal degrees
Tide Station (in recommended order of use)
Average Time Correction (in minutes)
Range Correction

	Tide Station Order	AVG Time Correction	Range Correction
Zone SEA23			
-136.052556 58.298553	9452542	-12	0.91
-136.041263 58.313204	9452437	0	0.86
-136.026252 58.314827			
-135.996122 58.281756			
-135.970612 58.251558			
-135.945709 58.215213			
-135.975332 58.193792			
-135.994019 58.187542			
-136.003984 58.186556			
-136.020179 58.188859			
-136.032636 58.186885			
-136.02001 58.202831			
-136.027256 58.240854			
-136.042592 58.276248			
-136.052556 58.298553			
Zone SEA27			
-136.052556 58.298553	9452542	-6	0.91
-136.041263 58.313204	9452437	+6	0.86
-136.026252 58.314827			
-136.091056 58.355499			
-136.110739 58.344236			
-136.052556 58.298553			
Zone SEA28			
-136.091056 58.355499	9452542	-6	0.93
-136.026252 58.314827	9452437	+6	0.88
-135.996122 58.281756			
-135.970612 58.251558			
-135.945709 58.215213			

-135.906924 58.241482
-135.9602 58.296707
-136.00826 58.329313
-136.079479 58.366454
-136.091056 58.355499

Zone SEA29

-135.906924 58.241482	9452542	-6	0.95
-135.859451 58.249114	9452437	+6	0.89
-135.898828 58.288779			
-135.937624 58.317127			
-135.991473 58.343626			
-136.060375 58.371322			
-136.076247 58.38438			
-136.088702 58.372927			
-136.079479 58.366454			
-136.00826 58.329313			
-135.9602 58.296707			
-135.906924 58.241482			

Zone SEA30

-135.859451 58.249114	9452542	-6	0.96
-135.825212 58.272635	9452437	+6	0.91
-135.867569 58.313775			
-135.913891 58.339362			
-135.976423 58.360976			
-136.042204 58.377842			
-136.046944 58.382079			
-136.060375 58.371322			
-135.991473 58.343626			
-135.937624 58.317127			
-135.898828 58.288779			
-135.859451 58.249114			

Zone SEA31

-135.825212 58.272635	9452542	-6	0.98
-135.782457 58.285423	9452437	+6	0.93
-135.80157 58.32261			
-135.835734 58.3488			
-135.894991 58.368016			
-135.917129 58.379846			
-135.96814 58.379015			
-136.047641 58.386834			
-136.046944 58.382079			
-136.042204 58.377842			

-135.976423 58.360976
-135.913891 58.339362
-135.867569 58.313775
-135.825212 58.272635

Zone SEA32

-135.96814 58.379015	9452542	0	1.00
-135.917129 58.379846	9452437	+12	0.94
-135.905219 58.400818			
-135.958485 58.405985			
-136.007118 58.409329			
-136.068306 58.409717			
-136.061063 58.39319			
-136.047641 58.386834			
-135.96814 58.379015			

Zone SEA50

-135.732743 58.235359	9452542	-6	1.00
-135.772266 58.256877	9452437	+6	0.94
-135.782457 58.285423			
-135.80157 58.32261			
-135.835734 58.3488			
-135.894991 58.368016			
-135.917129 58.379846			
-135.787244 58.408252			
-135.726819 58.369323			
-135.720936 58.319497			
-135.732743 58.235359			