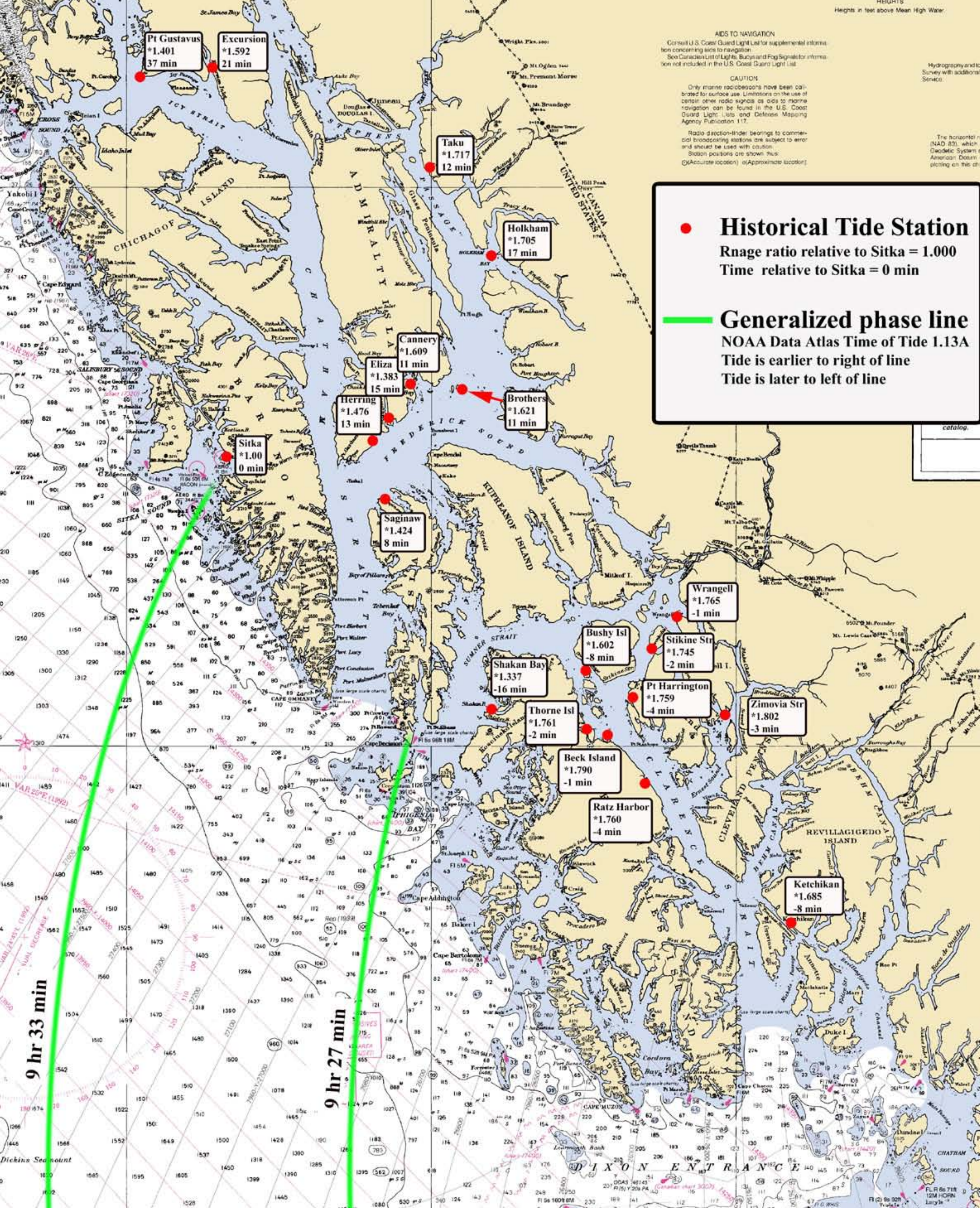

Historical Tide Station
Rnage ratio relative to Sitka = 1.000
Time relative to Sitka = 0 min
Generalized phase line
NOAA Data Atlas Time of Tide 1.13A
Tide is earlier to right of line
Tide is later to left of line
Pt Gustavus *1.401 37 min
Excursion *1.592 21 min
Taku *1.717 12 min
Holkham *1.705 17 min
Cannery *1.609 11 min
Eliza *1.383 15 min
Herring *1.476 13 min
Brothers *1.621 11 min
Sitka *1.00 0 min
Saginaw *1.424 8 min
Wrangell *1.765 -1 min
Bushy Isl *1.602 -8 min
Stikine Str *1.745 -2 min
Shakan Bay *1.337 -16 min
Pt Harrington *1.759 -4 min
Zimovia Str *1.802 -3 min
Thorne Isl *1.761 -2 min
Beck Island *1.790 -1 min
Ratz Harbor *1.760 -4 min
Ketchikan *1.685 -8 min
9 hr 33 min
9 hr 27 min

C. VERTICAL AND HORIZONTAL CONTROL

Refer to the Vertical and Horizontal Control Report for a detailed description of the vertical and horizontal control used during this survey. A summary of vertical and horizontal control for the survey follows.

C.1 VERTICAL CONTROL

Vertical control for the survey was based on the Mean Lower Low Water tidal datum (MLLW). The operating National Water Level Observation Network (NWLON) station at Sitka, AK (9451600) served as vertical control for the LADS depth benchmark areas and for the survey areas around Gulf of Esquibel and Maurelle Islands.

Station details are as follows:

		WGS84	
Gauge	**Location**	**Latitude**	**Longitude**
9451600	Sitka Sound Seafood Dock	57° 03.1' N	135° 20.5' W

Table 4 – Sitka Tide Gauge

C.2 ZONING

NOAA supplied tide zones that cover the extent of the survey area, with time and range correctors relative to the Sitka tide station. These are as follows:

Tide Zone	GS Identifier	Time Corrector	Range Corrector	Reference Station
SEA200	TA1	+0 minutes	*1.00	9451600
PAC296	TA2	-12 minutes	*1.04	9451600
SA227	TA3	-12 minutes	*1.06	9451600
SA216	TA4	-12 minutes	*1.09	9451600
SA226	TA5	-12 minutes	*1.09	9451600

Table 5 – Tide Zones

A tidal zoning analysis of the areas supplied by NOAA was conducted by surveying company 'John Oswald and Associates, LLC' in Anchorage, Alaska prior to the commencement of task order 2 in 2003 of the survey area. The result of this analysis concluded that the zoning provided by NOAA might not be adequate to meet the accuracy specifications for soundings. However, analysis of crosslines and overlaps of the mainlines of soundings concluded that preliminary tide zoning was adequate and therefore the preliminary tide zoning correctors have been considered to be the final zoning correctors for the survey.[6] A complete copy John Oswald and Associates analysis can be found in Appendix IV.

The verified tides supplied by NOAA were independently checked by John Oswald and Associates. Once the data was checked a fifth degree polynomial was applied to the tidal data and this data was then supplied to Tenix LADS Inc. for the application of tides.

For final processing, the time and amplitude correctors were applied to the tidal data delivered by John Oswald and Associates. Soundings were then reduced to MLLW using these corrected tides.