

Table 33(a) Summary of Pre- and Post-Project Hydraulic Conditions for Midnight Pass and the Adjacent Inlets

	Pre-Project						Post-Project						
	New Pass	Big Pass	ECE-04	ECE-06	ECE-03	Venice Inlet	New Pass	Big Pass	ECE-04	ECE-06	ECE-03	Midnight Pass	Venice Inlet
Gulf tidal range (ft)	3.17	3.17	3.17	3.17	3.17	3.17	3.17	3.17	3.17	3.17	3.17	3.18	3.17
Bay tidal range at the inlet (ft)	2.84	2.77	1.99	2.02	2.01	3.16	2.88	2.89	3.02	2.94	2.79	3.18	3.19
Average Duration of ebb (hrs)	6.63	6.96	7.40	7.49	7.47	6.60	6.54	6.98	6.97	6.87	7.09	6.23	6.54
Average Duration of flood(hrs)	9.03	8.87	8.29	8.18	8.21	8.10	9.11	8.68	7.69	7.79	7.56	8.4	8.12
M2 Phase (degrees)	2.18	3.33	55.01	80.84	73.36	352.38	2.95	0.83	15.94	14.16	27.88	354.8	352.50
M2 Phase Lag (minutes) (ocean vs site)	23.43	25.81	132.79	186.26	170.78	3.15	25.03	20.64	51.92	48.23	76.63	8.1	3.39
Phase lag of ebb(min) (ocean minus site)	44.40	34.80	140.40	195.60	181.80	3.40	47.40	25.80	39.40	38.30	63.00	21.4	3.90
Phase lag of flood(min) (ocean minus site)	27.00	37.20	167.40	229.20	213.60	1.70	25.20	29.40	62.40	55.10	93.90	1.7	1.10
Lag of slack after low tide (water level peak vs 0 current)	109.00	102.00	52.00	-5.00	46.00	32.00	34.20	74.40	123.00	4.50	212.63	46.2	37.13
Lag of slack after high tide (water level peak vs 0 current)	73.13	87.19	36.56	-4.69	46.88	70.00	43.87	94.80	102.37	-2.12	159.35	85.8	43.88
Ratio of tide ranges	1.12	1.15	1.60	1.57	1.58	1.00	1.10	1.10	1.05	1.08	1.14	1.00	0.99
Max. flood current velocity (ft/s)	2.9	1.8	1.3	0.5	1.1	1.7	2.7	1.7	0.6	1.1	0.8	2.9	1.6
Max. ebb current velocity (ft/s)	-3.0	-1.8	-1.2	-0.4	-1.2	-1.4	-3.2	-1.9	-0.5	-0.7	-0.6	-3.6	-1.1
Avg. max. flood velocity (ft/s)	1.2	0.7	0.5	0.2	0.4	0.6	1.2	0.7	0.2	0.3	0.2	1.2	0.5
Avg. max. ebb velocity (ft/s)	-1.1	-0.6	-0.5	-0.1	-0.5	-0.5	-1.2	-0.7	-0.2	-0.3	-0.1	-1.2	-0.4
Keulegan's coefficient of repletion, K	0.63	0.75				1.93	0.63	0.85				1.34	3.25
Coefficient of impedance, F	2.54	3.93				1.43	2.54	3.93				1.26	1.43
Model simulated tidal prism (ft3x10^8, Flood)	7.46	10.30				1.59	7.70	10.30				2.29	1.53
Model simulated tidal prism (ft3x10^8, Ebb)	7.65	10.30				1.61	7.52	9.82				2.18	1.48
Hydraulic tidal prism, Ph (ft3x10^8)	4.37	4.94				0.84	4.72	5.18				1.85	0.66
Volumetric tidal prism, Pv (ft3x10^8)	11.31	13.90				2.60	11.45	12.80				2.96	1.56
Inlet's Effective surface Area of Bay (ft ²)	4.0E+08	5.0E+08				8.2E+07	4.0E+08	4.4E+08				9.3E+07	4.9E+07
Throat Cross-Sectional Area (ft ²)	8800	16500				4200.00	8800	16500				3100	4200
Additional inputs to Keulegan calculations:													
Darcy-Weisbach friction term, f	0.0194	0.0217				0.0184	0.0194	0.0217				0.0219	0.0184
Inlet length, L (ft)	4167	5184				1148	4167	5184				361	1148
Hydraulic Radius, (ft)	13.62	9.76				15.91	13.62	9.76				9.45	15.91
Entrance energy loss coefficient, ken	0.05	0.05				0.10	0.05	0.05				0.05	0.10
Exit energy loss coefficient, kex	1.00	1.00				1.00	1.00	1.00				1.00	1.00
Manning's n	0.02	0.02				0.02	0.02	0.02				0.02	0.02