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FINAL REPORT

ENVIRONMENTAL SURVEYS OF POTENTIAL BORROW AREAS OFFSHORE NORTHERN NEW JERSEY AND SOUTHERN NEW YORK AND THE ENVIRONMENTAL IMPLICATIONS OF SAND REMOVAL FOR COASTAL AND BEACH RESTORATION

Volume II: Appendices

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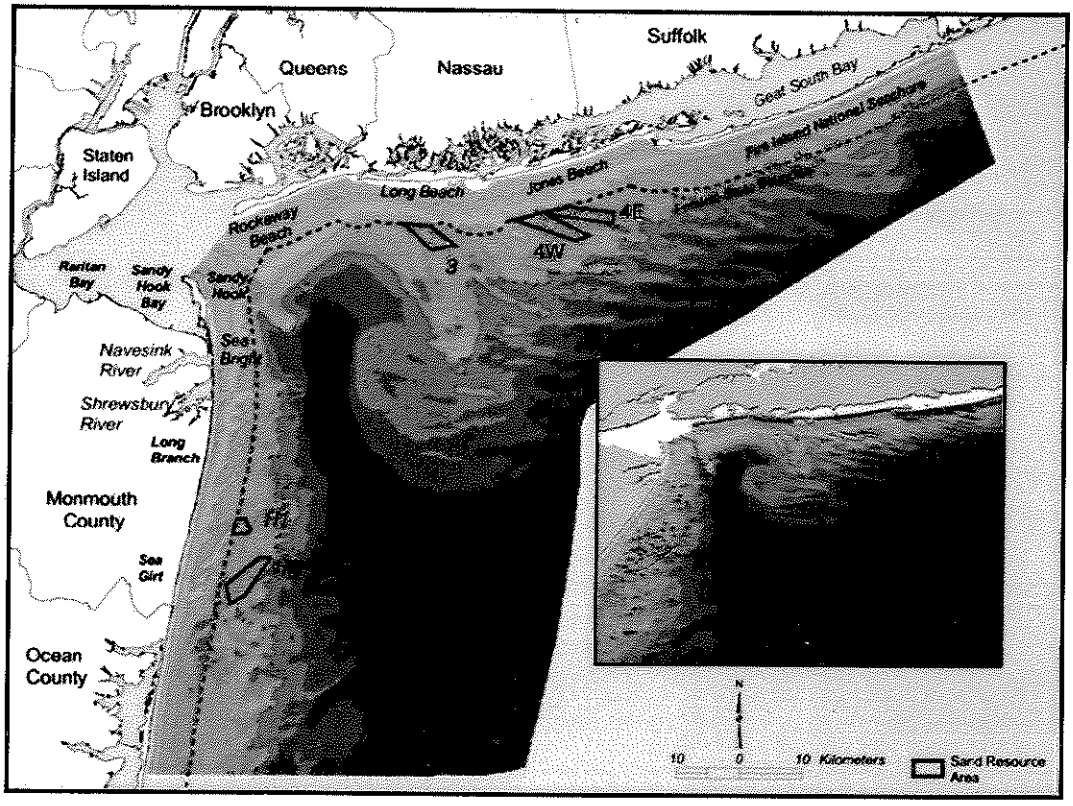

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APPENDIX A. HIGH-WATER SHORELINE POSITION CHANGE FOR NEW YORK

The following data tables provide shoreline position (UTM-x, UTM-y) and change statistics for the coast of Long Island, NY from Rockaway Inlet to Moriches Inlet at a 30-m longshore spacing. Transect 1 is located just east of Rockaway Inlet. Cumulative and incremental change rates are provided on the left half of the table, and shoreline position for each transect is listed on the right side of the table. All length measurements are recorded in meters.

Table A-1. High-Water Shoreline Position Change – Rockaway Inlet to Moriches Inlet, New York

High-Water Shoreline Position Change Rate (m/yr)						High-Water Shoreline Position (UTM Zone 18, NAD 1983)									
1873/88 to			1933/34 to		1983 to	1873/88		1933/34		1983		1991/97			
Transect #	1933/34	1983	1991/97	1983	1991/97	Transect #	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	
1					5.0	1					589701.7	4488534.7	589728.6	4488469.7	
2					5.3	2					589724.8	4488557.4	589753.4	4488488.4	
3					5.4	3					589748.6	4488578.2	589777.7	4488508.1	
4					5.7	4					589771.4	4488601.6	589802.0	4488527.9	
5					6.0	5					589794.3	4488624.8	589826.2	4488547.8	
6					6.0	6					589817.7	4488646.6	589850.1	4488568.5	
7					6.0	7					589842.1	4488666.2	589874.0	4488589.2	
8					5.8	8					589866.9	4488684.7	589898.1	4488609.4	
9					6.0	9					589890.2	4488706.8	589922.2	4488629.5	
10					6.1	10					589914.1	4488727.4	589946.6	4488649.1	
11					6.0	11					589938.8	4488746.4	589971.0	4488668.5	
12					5.9	12					589964.1	4488763.5	589995.5	4488687.8	
13					5.9	13					589989.2	4488781.3	590020.8	4488705.0	
14					6.0	14					590014.2	4488799.3	590046.2	4488722.1	
15					5.9	15					590040.0	4488815.6	590071.6	4488739.1	
16					5.9	16					590066.2	4488830.7	590097.7	4488754.7	
17					5.8	17					590092.6	4488845.2	590123.7	4488770.3	
18					5.7	18					590119.0	4488860.1	590149.7	4488785.8	
19					5.7	19					590145.5	4488874.5	590176.1	4488800.4	
20					5.7	20					590172.5	4488887.5	590203.1	4488813.8	
21					5.7	21					590199.6	4488900.5	590230.0	4488827.2	
22					5.5	22					590227.2	4488912.3	590256.7	4488841.1	
23					5.4	23					590254.5	4488924.7	590283.3	4488855.3	
24					5.2	24					590282.0	4488936.7	590309.9	4488869.4	
25					5.0	25					590309.7	4488948.3	590336.5	4488883.5	
26			20.5	17.0	5.0	26			589953.0	4489887.8	590336.6	4488961.9	590363.1	4488897.8	
27			20.4	17.0	4.9	27			589980.4	4489900.0	590363.6	4488975.1	590389.7	4488912.1	
28			20.4	16.9	4.9	28			590008.7	4489910.3	590390.2	4488989.3	590416.2	4488926.4	
29			20.3	16.9	4.8	29			590036.4	4489921.7	590416.8	4489003.4	590442.6	4488941.1	
30			20.3	16.8	4.7	30			590064.0	4489933.5	590443.9	4489016.3	590468.8	4488956.1	
31			20.3	16.8	4.5	31			590090.8	4489947.2	590471.0	4489029.3	590495.1	4488971.2	
32			20.1	16.7	4.6	32			590119.2	4489957.0	590496.6	4489045.9	590521.2	4488986.4	
33			19.9	16.5	4.7	33			590148.7	4489964.1	590522.2	4489062.4	590547.4	4489001.7	
34			19.7	16.4	4.8	34			590178.2	4489971.3	590547.8	4489079.0	590573.5	4489017.0	
35			19.5	16.2	4.8	35			590208.0	4489977.8	590573.9	4489094.4	590599.5	4489032.6	
36			19.3	16.1	4.8	36			590238.4	4489982.9	590599.9	4489110.1	590625.5	4489048.3	
37			19.0	15.8	4.8	37			590270.2	4489984.3	590625.6	4489126.5	590651.4	4489064.0	
38			18.7	15.6	4.9	38			590301.4	4489987.4	590651.4	4489142.5	590677.4	4489079.7	
39			18.4	15.4	4.9	39			590332.1	4489991.7	590677.0	4489159.1	590703.4	4489095.4	
40			18.2	15.2	5.0	40			590362.2	4489997.5	590702.6	4489175.8	590729.5	4489110.8	
41			17.9	15.1	5.2	41			590393.1	4490001.4	590728.2	4489192.3	590755.8	4489125.6	
42			17.6	14.8	5.3	42			590424.5	4490003.9	590753.5	4489209.5	590782.1	4489140.5	
43			17.2	14.6	5.5	43			590457.1	4490003.5	590779.3	4489225.8	590808.4	4489155.3	
44			16.9	14.3	5.5	44			590489.1	4490004.8	590805.0	4489242.0	590834.7	4489170.3	
45			16.5	14.1	5.6	45			590521.5	4490004.8	590830.8	4489258.1	590861.0	4489185.3	
46			16.2	13.9	5.7	46			590552.8	4490007.6	590856.8	4489273.7	590887.2	4489200.4	
47			15.9	13.6	5.7	47			590584.8	4490008.8	590882.9	4489289.1	590913.4	4489215.5	
48			15.6	13.4	5.7	48			590617.4	4490008.4	590909.2	4489304.1	590939.6	4489230.6	
49			15.3	13.2	5.7	49			590648.1	4490012.8	590935.5	4489318.9	590965.8	4489245.7	
50			15.2	13.1	5.7	50			590677.3	4490020.7	590961.8	4489334.0	590992.2	4489260.5	
51			14.9	12.9	5.7	51			590707.9	4490025.2	590988.0	4489349.0	591018.5	4489275.3	
52			14.7	12.7	5.7	52			590738.6	4490029.5	591014.5	4489363.4	591044.9	4489290.1	
53			14.4	12.5	5.6	53			590771.1	4490029.5	591041.2	4489377.4	591071.2	4489304.9	

Table A-1. High-Water Shoreline Position Change – Rockaway Inlet to Moriches Inlet, New York

	High-Water Shoreline Position Change Rate (m/yr)						High-Water Shoreline Position (UTM Zone 18, NAD 1983)								
	1873/88 to			1933/34 to		1983 to		1873/88		1933/34		1983		1991/97	
Transect #	1933/34	1983	1991/97	1983	1991/97	1991/97	Transect #	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)
54				14.2	12.3	5.5	54			590802.1	4490032.9	591068.3	4489390.4	591097.6	4489319.7
55				14.0	12.1	5.4	55			590831.8	4490039.7	591094.9	4489404.4	591123.9	4489334.5
56				13.8	12.0	5.4	56			590862.0	4490045.1	591121.6	4489418.5	591150.3	4489349.3
57				13.6	11.8	5.4	57			590893.6	4490047.1	591148.4	4489432.2	591177.5	4489362.0
58				13.1	11.4	5.6	58			590929.5	4490039.0	591175.0	4489446.2	591204.8	4489374.3
59				12.8	11.2	5.6	59			590962.4	4490038.1	591202.2	4489459.1	591232.2	4489386.7
60				12.6	11.0	5.7	60			590993.6	4490041.0	591228.9	4489472.9	591259.5	4489399.1
61				12.3	10.8	5.7	61			591026.5	4490040.1	591256.2	4489485.5	591286.9	4489411.4
62				11.9	10.6	5.8	62			591059.8	4490037.9	591283.1	4489498.9	591314.2	4489423.8
63				11.6	10.3	5.9	63			591092.5	4490037.4	591310.0	4489512.4	591341.3	4489436.8
64				11.4	10.1	5.8	64			591124.2	4490039.4	591337.0	4489525.5	591367.9	4489451.0
65						5.7	65					591364.2	4489538.3	591394.5	4489465.1
66				10.8	9.6	5.6	66			591189.6	4490038.1	591391.3	4489551.3	591421.1	4489479.3
67				10.5	9.3	5.5	67			591222.4	4490037.3	591418.5	4489564.0	591447.7	4489493.5
68				10.2	9.2	5.4	68			591253.7	4490040.3	591445.6	4489577.0	591474.4	4489507.4
69				9.9	8.9	5.3	69			591287.7	4490036.6	591472.5	4489590.5	591501.1	4489521.4
70				9.7	8.7	5.3	70			591318.3	4490041.1	591499.5	4489603.6	591527.8	4489535.4
71				9.4	8.5	5.2	71			591349.9	4490043.2	591526.9	4489616.0	591554.5	4489549.3
72				9.1	8.2	5.1	72			591383.1	4490041.3	591554.0	4489628.8	591581.1	4489563.3
73				8.9	8.0	5.0	73			591414.4	4490044.2	591580.7	4489642.8	591607.2	4489578.8
74				8.6	7.8	4.8	74			591446.3	4490045.7	591607.7	4489656.0	591633.2	4489594.5
75				8.4	7.5	4.5	75			591477.9	4490047.8	591634.8	4489668.9	591659.0	4489610.6
76				8.1	7.3	4.3	76			591509.7	4490049.4	591661.7	4489682.4	591684.4	4489627.5
77				7.7	7.0	4.3	77			591543.2	4490046.9	591688.3	4489696.6	591711.1	4489641.5
78				7.4	6.7	4.5	78			591576.2	4490045.6	591714.7	4489711.2	591738.5	4489653.7
79				7.1	6.6	4.6	79			591607.5	4490048.4	591741.1	4489725.9	591765.8	4489666.2
80				6.9	6.4	4.7	80			591639.1	4490050.6	591767.8	4489739.9	591793.1	4489678.6
81				6.6	6.2	4.9	81			591671.4	4490050.9	591794.3	4489754.2	591820.4	4489691.2
82				6.3	6.0	5.0	82			591703.3	4490052.4	591820.9	4489768.4	591847.6	4489703.9
83				6.0	5.8	5.1	83			591735.7	4490052.4	591847.5	4489782.5	591874.8	4489716.7
84				5.7	5.6	5.1	84			591767.3	4490054.7	591874.3	4489796.4	591901.6	4489730.3
85				5.6	5.5	5.1	85			591797.0	4490061.4	591901.1	4489810.0	591928.2	4489744.5
86				5.3	5.2	4.8	86			591828.8	4490063.0	591928.2	4489823.0	591953.8	4489761.0
87				5.0	4.9	4.5	87			591861.2	4490063.2	591954.9	4489836.8	591979.2	4489778.2
88				4.7	4.6	4.3	88			591893.9	4490062.5	591982.1	4489849.7	592005.1	4489794.1
89				4.5	4.5	4.2	89			591924.8	4490066.3	592009.8	4489861.2	592032.2	4489807.1
90				4.3	4.3	4.3	90			591956.9	4490067.2	592037.4	4489873.0	592060.4	4489817.4
91				4.0	4.1	4.4	91			591988.9	4490068.3	592064.6	4489885.5	592088.1	4489828.9
92				3.8	3.8	4.0	92			592020.9	4490069.6	592091.7	4489898.6	592113.1	4489847.0
93				3.6	3.6	3.8	93			592052.3	4490072.1	592118.8	4489911.6	592139.2	4489862.2
94				3.3	3.4	3.8	94			592083.3	4490075.6	592145.9	4489924.6	592166.2	4489875.6
95				3.2	3.3	3.8	95			592113.6	4490081.0	592172.8	4489938.1	592193.1	4489889.0
96				3.0	3.2	3.8	96			592143.5	4490087.1	592199.7	4489951.5	592220.0	4489902.4
97				2.8	3.0	3.9	97			592174.4	4490091.0	592226.6	4489964.9	592247.3	4489914.9
98				2.5	2.8	3.9	98			592206.9	4490090.8	592253.5	4489978.3	592274.6	4489927.5
99				2.4	2.7	4.0	99			592236.0	4490098.9	592280.3	4489992.0	592301.6	4489940.6
100				2.2	2.7	4.2	100			592265.0	4490107.3	592306.6	4490007.0	592329.2	4489952.5
101				2.0	2.5	4.3	101			592296.3	4490110.2	592333.8	4490019.7	592356.9	4489963.8
102				1.8	2.4	4.3	102			592326.6	4490115.3	592361.0	4490032.3	592384.1	4489976.6
103				1.7	2.3	4.3	103			592356.3	4490122.1	592388.3	4490045.0	592411.0	4489990.1
104				1.6	2.2	4.2	104			592386.3	4490128.2	592415.4	4490057.7	592438.1	4490003.0
105				1.4	2.0	4.2	105			592417.0	4490132.3	592442.8	4490070.0	592465.4	4490015.4
106				1.3	1.9	4.2	106			592447.1	4490138.0	592470.8	4490080.8	592493.1	4490027.1

Table A-1. High-Water Shoreline Position Change – Rockaway Inlet to Moriches Inlet, New York

High-Water Shoreline Position Change Rate (m/yr)							High-Water Shoreline Position (UTM Zone 18, NAD 1983)							
1873/88 to			1933/34 to		1983 to		1873/88		1933/34		1983		1991/97	
Transect #	1933/34	1983	1991/97	1983	1991/97	1991/97	Transect #	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)
107				1.2	1.9	4.2	107			592476.1	4490146.5	592498.4	4490092.7	592520.8	4490038.5
108				1.0	1.7	4.2	108			592506.5	4490151.4	592525.8	4490104.8	592548.6	4490049.9
109				0.9	1.7	4.3	109			592536.2	4490158.3	592553.3	4490116.9	592576.3	4490061.3
110				0.7	1.5	4.4	110			592567.3	4490161.6	592580.5	4490129.7	592604.2	4490072.5
111				0.5	1.4	4.7	111			592597.9	4490165.9	592607.7	4490142.3	592632.7	4490082.1
112				0.1	1.2	4.9	112			592632.7	4490160.5	592635.2	4490154.3	592661.5	4490090.8
113				-0.1	1.0	4.5	113			592665.4	4490159.8	592664.4	4490162.2	592688.4	4490104.3
114				-0.2	0.7	3.6	114			592697.9	4490159.6	592694.8	4490167.2	592713.9	4490121.1
115				-0.3	0.3	2.1	115			592732.1	4490155.5	592727.4	4490167.0	592738.7	4490139.5
116				-0.2	-0.0	0.7	116			592766.8	4490150.1	592762.3	4490161.0	592766.3	4490151.4
117				-0.4			117			592806.1	4490133.7	592798.9	4490151.0		
118							118			592842.1	4490125.3				
119				-0.4			119			592877.7	4490117.6	592869.5	4490137.5		
120				-0.6			120			592912.7	4490111.5	592901.4	4490138.8		
121				-0.6			121			592943.2	4490116.2	592932.2	4490142.8		
122				-0.4			122			592975.8	4490116.0	592967.7	4490135.5		
123				-0.3			123			593005.9	4490121.7	593000.7	4490134.3		
124							124			593037.9	4490122.9				
125				-0.1			125			593068.8	4490126.6	593067.2	4490130.4		
126							126			593101.9	4490125.1				
127				-0.1			127			593130.1	4490135.4	593128.3	4490139.8		
128					0.1		128			593162.1	4490136.6			593164.2	4490131.5
129				-0.3	-0.1	0.7	129			593192.3	4490142.1	593186.3	4490156.5	593190.2	4490147.2
130					-0.2		130			593223.1	4490146.1			593217.6	4490159.3
131				-0.5	-0.3	0.5	131			593252.9	4490152.6	593243.2	4490176.0	593246.0	4490169.3
132				-0.5	-0.3	0.4	132			593284.4	4490164.9	593274.4	4490179.0	593276.6	4490173.7
133				-0.3	-0.1	0.6	133			593313.2	4490163.8	593308.5	4490175.2	593311.6	4490167.6
134				-0.0	0.3	1.4	134			593344.4	4490166.7	593343.7	4490168.5	593351.2	4490150.5
135					0.2		135			593373.2	4490175.6			593377.1	4490166.3
136						0.9	136					593398.1	4490193.9	593402.9	4490182.4
137				-0.5	-0.2	0.9	137			593433.2	4490187.6	593424.8	4490207.9	593429.7	4490196.1
138				-0.5	-0.2	0.9	138			593463.3	4490193.5	593453.2	4490217.7	593458.2	4490205.6
139				-0.3	-0.0	1.1	139			593490.5	4490206.0	593484.2	4490221.4	593489.8	4490207.8
140					0.2		140			593521.4	4490210.0			593526.8	4490196.8
141				-0.3	0.1	1.6	141			593549.5	4490220.5	593543.8	4490234.1	593552.3	4490213.8
142				-0.4	-0.0	1.2	142			593578.6	4490228.6	593571.8	4490245.1	593578.1	4490229.7
143					-0.0		143			593604.6	4490244.2			593604.1	4490245.4
144			10.6		-0.1		144	593147.2	4491426.8	593632.8	4490254.6			593630.3	4490260.5
145	21.5	11.3	10.1	-0.4	-0.1	0.8	145	593198.6	4491381.2	593659.8	4490267.7	593653.2	4490283.7	593657.6	4490272.9
146	20.7	10.9	9.7	-0.3	-0.1	0.8	146	593244.3	4491349.3	593687.6	4490279.1	593682.0	4490292.5	593686.1	4490282.7
147	20.2	10.7	9.5	-0.2	0.0	0.8	147	593282.8	4491334.7	593715.6	4490289.8	593711.3	4490300.2	593715.6	4490289.8
148	19.7		9.4		0.3		148	593322.0	4491318.3	593744.3	4490298.8			593750.2	4490284.6
149	19.1	10.2	9.1	-0.0	0.2	1.1	149	593363.1	4491297.7	593771.6	4490311.4	593771.1	4490312.7	593776.8	4490298.8
150	18.5		8.8		0.2		150	593403.6	4491278.3	593799.1	4490323.3			593804.0	4490311.5
151	18.0	9.5	8.5	-0.2	0.2	1.4	151	593442.0	4491263.8	593827.3	4490333.8	593823.8	4490342.2	593831.0	4490324.7
152	17.6		8.3		0.1		152	593478.2	4491254.9	593855.4	4490344.2			593857.1	4490340.2
153	17.2	9.0	8.1	-0.3	-0.0	1.0	153	593514.0	4491246.8	593883.3	4490355.3	593877.2	4490370.0	593882.6	4490356.9
154	16.8	8.8	7.9	-0.3	-0.1	0.7	154	593551.1	4491235.6	593911.1	4490366.7	593905.9	4490379.0	593909.6	4490370.2
155	16.3	8.6		-0.2			155	593589.1	4491222.3	593938.6	4490378.6	593935.5	4490386.1		
156	15.9	8.5	7.6	0.1	0.3	0.9	156	593625.8	4491212.3	593966.7	4490389.0	593968.4	4490385.0	593973.2	4490373.6
157	15.5	8.3	7.4	0.0	0.1	0.5	157	593661.6	4491204.1	593994.4	4490400.5	593994.4	4490400.7	593996.8	4490394.7
158	15.2		7.1		-0.0		158	593697.0	4491197.1	594022.1	4490412.2			594021.8	4490413.0
159	14.9	7.8	7.0	-0.2	-0.1	0.5	159	593732.2	4491190.4	594050.8	4490421.3	594046.5	4490431.6	594049.0	4490425.5

Table A-1. High-Water Shoreline Position Change – Rockaway Inlet to Moriches Inlet, New York

High-Water Shoreline Position Change Rate (m/yr)							High-Water Shoreline Position (UTM Zone 18, NAD 1983)									
1873/88 to			1933/34 to			1983 to	1873/88			1933/34			1983		1991/97	
Transect #	1933/34	1983	1991/97	1983	1991/97	1991/97	Transect #	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	
160	14.5		6.8		-0.1		160	593767.2	4491184.3	594078.4	4490432.9			594076.0	4490438.8	
161	14.1		6.6		-0.1		161	593803.0	4491176.4	594105.5	4490446.0			594102.3	4490453.8	
162	13.8	7.3	6.4	-0.2	-0.1	0.3	162	593839.4	4491166.9	594134.1	4490455.4	594130.5	4490464.0	594131.8	4490460.8	
163	13.3	7.1	6.3	0.0	0.0	0.1	163	593876.3	4491156.2	594160.4	4490470.3	594160.6	4490469.8	594161.3	4490468.1	
164	12.8	6.9	6.1	0.2	0.2	-0.1	164	593913.9	4491143.8	594188.0	4490481.9	594192.5	4490471.1	594192.2	4490472.0	
165	12.4	6.7	5.9	0.2	0.1	0.0	165	593951.3	4491131.9	594215.9	4490493.0	594218.7	4490486.4	594218.9	4490485.8	
166	11.9	6.4	5.7	0.2	0.1	-0.1	166	593988.2	4491121.1	594243.8	4490504.0	594246.6	4490497.2	594245.9	4490499.0	
167	11.6	6.2	5.5	0.1	0.0	-0.1	167	594024.7	4491111.5	594272.5	4490513.2	594273.6	4490510.5	594273.2	4490511.4	
168	11.1	6.0	5.3	0.1	0.1	-0.1	168	594061.1	4491101.9	594299.2	4490527.2	594300.8	4490523.2	594300.5	4490524.1	
169	10.7		5.1		0.1		169	594098.0	4491091.3	594327.5	4490537.2			594329.4	4490532.7	
170	10.0		4.8		0.3		170	594140.5	4491067.0	594354.4	4490550.7			594360.3	4490536.4	
171	9.4	5.1	4.5	0.3	0.1	-0.2	171	594180.6	4491048.6	594382.4	4490561.5	594387.0	4490550.4	594385.7	4490553.5	
172	8.7		4.2		0.1		172	594222.8	4491025.1	594410.1	4490572.9			594413.4	4490565.1	
173	8.1	4.4	3.9	0.1	0.1	-0.1	173	594264.4	4491003.2	594438.5	4490582.9	594440.2	4490578.8	594439.6	4490580.1	
174	7.3		3.5		0.2		174	594306.4	4490980.2	594463.1	4490601.8			594467.2	4490591.9	
175	6.6	3.6	3.2	0.3	0.2	0.1	175	594348.4	4490957.0	594489.5	4490616.4	594494.1	4490605.3	594494.5	4490604.4	
176	6.0	3.3	2.9	0.2	0.2	0.3	176	594389.1	4490937.3	594518.0	4490626.0	594521.3	4490618.0	594523.0	4490614.0	
177	5.5	3.1	2.8	0.3	0.3	0.2	177	594427.6	4490922.8	594546.1	4490636.6	594551.8	4490622.8	594553.0	4490620.0	
178	5.1	2.9	2.6	0.4	0.4	0.2	178	594464.5	4490912.0	594574.0	4490647.8	594581.4	4490629.8	594582.3	4490627.6	
179	4.7	2.7	2.4	0.4	0.3	-0.1	179	594500.2	4490904.2	594601.2	4490660.3	594608.9	4490641.8	594608.6	4490642.6	
180	4.3	2.5	2.2	0.4	0.3	-0.0	180	594536.7	4490894.4	594628.3	4490673.4	594635.1	4490656.9	594635.0	4490657.1	
181	3.9		2.0		0.2		181	594572.7	4490886.0	594656.4	4490684.0			594662.2	4490669.9	
182	3.5	2.0	1.8	0.3	0.3	0.2	182	594608.1	4490879.0	594683.4	4490697.2	594689.0	4490683.5	594689.9	4490681.5	
183	3.2	1.9	1.7	0.4	0.4	0.3	183	594642.2	4490875.0	594711.6	4490707.5	594718.7	4490690.2	594720.2	4490686.7	
184	2.9	1.9	1.6	0.7	0.5	-0.2	184	594675.3	4490873.4	594738.1	4490721.8	594750.5	4490691.9	594749.4	4490694.5	
185	2.7	1.7	1.5	0.5	0.4	0.2	185	594708.1	4490872.8	594765.5	4490734.1	594775.1	4490710.8	594776.0	4490708.6	
186	2.5		1.4		0.4		186	594740.1	4490873.8	594792.5	4490747.2			594802.8	4490722.5	
187	2.4		1.2		0.3		187	594771.4	4490876.7	594821.7	4490755.1			594828.0	4490740.0	
188	2.2	1.3	1.2	0.3	0.2	0.1	188	594801.8	4490881.7	594849.5	4490766.5	594854.4	4490754.6	594855.0	4490753.2	
189	2.1						189	594831.8	4490887.6	594876.9	4490778.7					
190	2.0	1.1	1.0	0.2	0.2	0.2	190	594861.2	4490894.9	594903.8	4490792.2	594907.2	4490784.0	594908.3	4490781.3	
191	1.9		1.0		0.2		191	594891.2	4490900.9	594930.8	4490805.4			594935.3	4490794.4	
192	1.7	1.0	0.9	0.2	0.2	0.2	192	594922.2	4490904.4	594958.6	4490816.6	594961.6	4490809.3	594962.6	4490806.9	
193	1.5		0.8		0.2		193	594953.2	4490908.0	594985.6	4490828.9			594990.2	4490818.6	
194	1.4	0.8	0.7	0.1	0.1	0.1	194	594982.7	4490915.4	595013.3	4490841.3	595015.7	4490835.6	595016.4	4490833.9	
195	1.3		0.7		0.2		195	595012.5	4490921.6	595040.4	4490854.3			595044.7	4490843.9	
196	1.3		0.6		0.1		196	595041.7	4490929.7	595068.4	4490865.0			595070.3	4490860.6	
197	1.2		0.6		0.1		197	595070.1	4490939.4	595096.4	4490876.0			595097.6	4490873.0	
198	1.2	0.7	0.6	0.1	0.1	-0.1	198	595098.4	4490949.4	595123.1	4490890.0	595125.3	4490884.5	595124.6	4490886.2	
199	1.1	0.7	0.6	0.1	0.0	-0.3	199	595126.9	4490959.1	595151.2	4490900.5	595153.3	4490895.3	595151.9	4490898.8	
200	1.1		0.5		0.0		200	595155.1	4490969.3	595178.9	4490912.1			595179.3	4490911.1	
201	0.8	0.5	0.4	0.1	0.0	-0.2	201	595190.1	4490963.2	595206.3	4490924.3	595208.1	4490919.7	595207.0	4490922.6	
202	0.5		0.3		0.1		202	595223.9	4490960.1	595234.1	4490935.4			595235.8	4490931.3	
203	0.4	0.3	0.2	0.1	0.1	0.1	203	595252.9	4490968.6	595261.1	4490948.7	595263.4	4490943.2	595263.7	4490942.4	
204	0.4	0.2	0.2	0.1	0.1	0.2	204	595281.1	4490978.9	595289.0	4490959.7	595290.0	4490957.3	595291.2	4490964.3	
205	0.2	0.3	0.2	0.3	0.2	-0.3	205	595309.8	4490987.9	595314.8	4490975.8	595319.7	4490963.9	595318.4	4490967.2	
206	0.2	0.2	0.1	0.2	0.1	-0.4	206	595338.0	4490998.2	595342.3	4490987.9	595346.5	4490977.8	595344.4	4490982.7	
207	0.1	0.2	0.2	0.3	0.2	-0.2	207	595365.8	4491009.4	595368.8	4491002.2	595374.8	4490987.8	595373.5	4490991.0	
208	0.1	0.3	0.2	0.5	0.4	-0.2	208	595394.6	4491018.4	595395.6	4491016.0	595405.8	4490991.4	595404.8	4490993.6	
209	0.1	0.2	0.2	0.5	0.3	-0.2	209	595421.9	4491030.8	595422.9	4491028.3	595431.7	4491007.3	595430.7	4491009.7	
210	0.1	0.3	0.2	0.5	0.3	-0.3	210	595447.4	4491047.6	595449.3	4491043.2	595458.9	4491020.0	595457.1	4491024.3	
211	0.1	0.3	0.2	0.5	0.3	-0.6	211	595475.7	4491057.8	595477.0	4491054.6	595486.2	4491032.5	595483.0	4491040.1	
212		0.3	0.1			-0.9	212	595503.6	4491068.7			595514.3	4491043.0	595509.7	4491054.0	

Table A-1. High-Water Shoreline Position Change – Rockaway Inlet to Moriches Inlet, New York

High-Water Shoreline Position Change Rate (m/yr)							High-Water Shoreline Position (UTM Zone 18, NAD 1983)									
1873/88 to			1933/34 to		1983 to		1873/88		1933/34		1983		1991/97			
Transect #	1933/34	1983	1991/97	1983	1991/97	1991/97	Transect #	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	
213	0.0	0.3	0.2	0.5	0.3	-0.7	213	595531.2	4491080.6	595531.7	4491079.5	595541.8	4491054.9	595537.9	4491064.5	
214	0.1		0.2		0.4		214	595557.5	4491095.5	595559.3	4491091.0			595567.7	4491070.8	
215	0.1	0.4	0.2	0.7	0.3	-0.9	215	595583.8	4491110.3	595585.8	4491105.4	595598.1	4491075.8	595593.5	4491086.9	
216	0.1	0.3	0.2	0.6	0.2	-1.1	216	595611.5	4491121.8	595612.9	4491118.6	595624.6	4491090.2	595618.5	4491104.9	
217	0.0	0.3	0.1	0.6	0.2	-1.3	217	595639.1	4491133.7	595639.6	4491132.3	595651.6	4491103.4	595644.8	4491119.9	
218	0.1	0.4	0.1	0.7	0.2	-1.4	218	595664.9	4491149.6	595666.5	4491145.8	595679.0	4491115.8	595671.3	4491134.3	
219	0.1	0.4	0.2	0.7	0.3	-1.1	219	595692.0	4491162.6	595693.8	4491158.3	595706.3	4491128.3	595700.2	4491142.8	
220	0.2		0.2		0.3		220	595718.7	4491176.6	595722.0	4491168.6			595728.7	4491152.6	
221	0.2	0.5	0.3	0.8	0.5	-0.6	221	595746.0	4491189.1	595749.5	4491180.8	595764.2	4491145.1	595761.2	4491152.4	
222	0.2	0.4	0.3	0.7	0.4	-0.9	222	595773.6	4491200.9	595776.8	4491193.3	595790.5	4491160.1	595785.7	4491171.6	
223	0.1	0.4	0.2	0.7	0.3	-0.9	223	595801.0	4491213.2	595803.1	4491208.0	595815.5	4491178.1	595810.5	4491190.3	
224	0.1	0.4	0.2	0.7	0.3	-1.2	224	595828.4	4491225.4	595830.8	4491219.5	595844.4	4491186.8	595837.7	4491202.9	
225	0.2		0.2		0.2		225	595855.8	4491237.7	595859.2	4491229.5			595864.1	4491217.7	
226	0.2						226	595882.9	4491250.5	595886.4	4491242.2					
227	0.1	0.4	0.4	0.7	0.6	0.1	227	595909.7	4491264.2	595912.4	4491257.7	595926.2	4491224.5	595926.6	4491223.4	
228	0.2	0.4	0.3	0.7	0.4	-0.4	228	595936.9	4491277.1	595940.7	4491267.8	595953.0	4491238.2	595950.9	4491243.3	
229	0.2	0.4	0.3	0.7	0.3	-0.9	229	595964.8	4491288.1	595968.1	4491280.0	595981.0	4491248.9	595976.1	4491260.7	
230	0.2	0.4	0.2	0.7	0.3	-1.0	230	595992.5	4491299.5	595995.6	4491292.0	596007.9	4491262.4	596002.8	4491274.8	
231	0.2	0.4	0.3	0.6	0.4	-0.1	231	596019.4	4491312.9	596024.1	4491301.6	596034.8	4491275.9	596034.5	4491276.7	
232	0.3	0.5	0.5	0.7	0.6	0.3	232	596046.0	4491327.2	596051.4	4491314.2	596064.7	4491282.1	596066.3	4491278.2	
233	0.2	0.5	0.5	0.8	0.7	0.2	233	596073.0	4491340.5	596077.7	4491329.0	596092.3	4491293.8	596093.5	4491291.0	
234	0.3	0.5	0.5	0.7	0.6	0.2	234	596099.8	4491354.0	596106.5	4491338.0	596119.2	4491307.3	596120.1	4491305.0	
235	0.5	0.5	0.5	0.6	0.5	0.3	235	596127.1	4491366.5	596137.0	4491342.6	596147.2	4491318.0	596148.7	4491314.4	
236		0.6	0.5			0.2	236	596154.7	4491378.3			596178.2	4491321.5	596179.4	4491318.7	
237	1.1						237	596182.4	4491390.0	596206.0	4491332.8					
238	1.1	1.0	0.9	0.9	0.7	0.1	238	596210.1	4491401.5	596233.4	4491345.0	596249.6	4491306.1	596249.8	4491305.5	
239	1.1		0.8		0.6		239	596237.5	4491413.6	596261.8	4491354.9			596275.0	4491323.1	
240	1.1	0.9	0.8	0.6	0.5	0.0	240	596264.6	4491426.5	596288.6	4491368.7	596300.5	4491339.9	596300.5	4491339.9	
241	1.2	0.9	0.8	0.6	0.4	-0.1	241	596291.4	4491440.3	596316.2	4491380.4	596327.1	4491354.1	596326.3	4491356.0	
242	1.2		0.7		0.4		242	596318.1	4491454.2	596343.1	4491393.8			596351.7	4491373.0	
243	1.3	0.9	0.7	0.4	0.3	-0.4	243	596344.8	4491468.1	596371.7	4491403.2	596380.0	4491383.1	596377.8	4491388.5	
244	1.4	0.9	0.8	0.4	0.3	-0.0	244	596370.8	4491483.7	596399.8	4491413.8	596406.3	4491398.1	596406.2	4491398.4	
245	1.3	0.9	0.8	0.5	0.3	-0.4	245	596396.8	4491499.4	596423.5	4491434.9	596432.9	4491412.3	596430.8	4491417.4	
246	1.2	0.9	0.7	0.5	0.3	-0.4	246	596423.1	4491514.2	596449.7	4491450.2	596459.0	4491427.7	596456.7	4491433.2	
247	1.3		0.8		0.3		247	596449.1	4491529.9	596477.5	4491461.4			596483.8	4491446.1	
248	1.3		0.8		0.3		248	596475.7	4491544.0	596503.8	4491476.3			596511.2	4491458.5	
249	1.3	0.9	0.8	0.4	0.2	-0.3	249	596502.4	4491558.1	596531.0	4491489.0	596538.4	4491471.1	596536.6	4491475.4	
250	1.4	0.9	0.7	0.4	0.1	-0.7	250	596529.2	4491571.7	596558.6	4491500.7	596565.3	4491484.6	596561.8	4491493.0	
251	1.4		0.8		0.3		251	596556.0	4491585.5	596586.1	4491512.8			596593.3	4491495.4	
252	1.4		0.8		0.2		252	596582.1	4491600.7	596612.8	4491526.6			596618.5	4491512.8	
253	1.5		0.8		0.2		253	596607.9	4491616.8	596640.2	4491538.9			596644.2	4491529.3	
254	1.6	1.0	0.8	0.2	0.1	-0.2	254	596633.2	4491634.2	596668.3	4491549.5	596672.5	4491539.3	596671.2	4491542.4	
255	1.7	1.1	0.9	0.3	0.2	-0.4	255	596657.6	4491653.7	596694.5	4491564.7	596700.5	4491550.2	596698.4	4491555.2	
256	1.9	1.1	0.9	0.3	0.1	-0.6	256	596680.8	4491676.1	596722.0	4491576.5	596726.7	4491565.2	596723.8	4491572.4	
257	2.1	1.2	1.0	0.2	0.1	-0.3	257	596704.0	4491698.6	596749.1	4491589.7	596752.2	4491582.2	596750.4	4491586.4	
258	2.4		1.1		-0.0		258	596728.4	4491718.0	596778.7	4491596.4			596778.2	4491597.7	
259	2.3		1.2		0.2		259	596754.3	4491733.8	596803.7	4491614.7			596807.2	4491606.1	
260	2.3	1.3	1.2	0.2	0.2	0.5	260	596780.3	4491749.6	596829.9	4491629.8	596832.9	4491622.4	596835.5	4491616.1	
261	2.3	1.3	1.2	0.2	0.2	0.3	261	596806.5	4491764.7	596856.1	4491644.8	596860.3	4491634.8	596861.6	4491631.5	
262	2.4		1.3		0.2		262	596832.7	4491779.7	596884.8	4491653.9			596889.7	4491642.0	
263	2.3	1.4	1.3	0.3	0.3	0.4	263	596859.1	4491794.4	596909.1	4491673.8	596913.9	4491662.0	596915.8	4491657.5	
264	2.4	1.4	1.3	0.2	0.3	0.4	264	596885.6	4491808.8	596936.6	4491685.7	596940.6	4491676.1	596942.7	4491671.0	
265	2.4		1.3		0.3		265	596912.4	4491822.6	596964.2	4491697.4			596971.3	4491680.2	

Table A-1. High-Water Shoreline Position Change – Rockaway Inlet to Moriches Inlet, New York

	High-Water Shoreline Position Change Rate (m/yr)						High-Water Shoreline Position (UTM Zone 18, NAD 1983)									
	1873/88 to			1933/34 to		1983 to	1873/88			1933/34			1983			1991/97
Transect #	1933/34	1983	1991/97	1983	1991/97	1991/97	Transect #	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)		UTM-x (m)	UTM-y (m)		UTM-x (m)	UTM-y (m)
266	2.3	1.4	1.1	0.3	0.1	-0.8	266	596939.2	4491836.1	596989.3	4491715.3		596994.7	4491702.3		596990.5	4491712.3
267	2.3	1.4	1.1	0.3	0.0	-0.7	267	596966.2	4491849.3	597015.7	4491729.8		597020.4	4491718.5		597016.7	4491727.6
268	2.3	1.4	1.1	0.2	0.0	-0.8	268	596993.3	4491862.3	597043.0	4491742.3		597047.6	4491731.3		597043.5	4491741.2
269	2.3	1.3	1.1	0.2	0.1	-0.4	269	597020.5	4491875.2	597069.7	4491756.4		597074.1	4491745.7		597071.8	4491751.3
270	2.2	1.3	1.1	0.3	0.1	-0.3	270	597047.6	4491888.1	597095.3	4491772.8		597100.1	4491761.3		597098.5	4491765.2
271	2.2	1.3	1.1	0.3	0.1	-0.4	271	597074.7	4491901.1	597122.5	4491785.6		597127.4	4491773.9		597125.2	4491779.2
272	2.3	1.3	1.1	0.2	0.1	-0.3	272	597101.2	4491915.3	597150.3	4491796.9		597154.1	4491787.6		597152.3	4491792.0
273	2.4	1.4	1.1	0.2	0.1	-0.5	273	597127.4	4491930.7	597178.0	4491808.3		597182.1	4491798.6		597179.4	4491805.1
274	2.4	1.4	1.2	0.2	0.0	-0.5	274	597153.6	4491945.8	597205.6	4491820.3		597208.4	4491813.5		597206.0	4491819.3
275	2.5	1.4	1.1	0.2	-0.0	-0.7	275	597180.7	4491958.8	597233.3	4491831.8		597236.2	4491824.6		597232.4	4491834.0
276	2.4	1.4		0.3			276	597207.8	4491971.7	597258.7	4491848.7		597263.4	4491837.4			
277	2.4	1.4	1.1	0.2	-0.0	-0.8	277	597235.0	4491984.3	597266.6	4491859.9		597289.8	4491852.0		597285.6	4491862.2
278	2.4	1.3	1.1	0.2	-0.1	-0.8	278	597262.4	4491996.5	597313.2	4491874.1		597316.3	4491866.5		597311.8	4491877.3
279	2.3	1.3	1.1	0.2	-0.0	-0.7	279	597289.8	4492008.8	597338.9	4491890.4		597342.3	4491882.2		597338.4	4491891.6
280	2.2	1.3	1.1	0.2	0.1	-0.6	280	597317.4	4492020.7	597365.1	4491905.6		597369.4	4491895.0		597366.3	4491902.6
281	2.2	1.2	1.1	0.2	0.1	-0.3	281	597345.0	4492032.4	597391.5	4491920.2		597394.8	4491912.2		597393.1	4491916.3
282	2.2	1.3	1.1	0.2	0.0	-0.5	282	597372.0	4492045.5	597419.4	4491931.2		597422.4	4491924.0		597419.8	4491930.1
283	2.2	1.3	1.1	0.1	-0.0	-0.5	283	597398.8	4492059.3	597446.9	4491943.2		597449.4	4491937.1		597446.7	4491943.7
284	2.1	1.2	1.0	0.2	0.0	-0.7	284	597427.0	4492069.6	597472.4	4491959.9		597476.8	4491949.4		597473.0	4491958.7
285	2.1	1.2	1.0	0.3	-0.0	-1.0	285	597455.8	4492078.5	597499.9	4491972.1		597504.6	4491960.7		597499.1	4491974.0
286	2.0	1.2	0.9	0.3	-0.0	-1.0	286	597485.1	4492086.2	597527.4	4491984.1		597532.3	4491972.3		597526.9	4491985.1
287	1.9	1.1	0.9	0.3	0.1	-0.8	287	597513.7	4492095.4	597553.3	4491999.8		597558.6	4491987.2		597554.6	4491996.9
288	1.7	1.1	0.9	0.3	0.1	-0.5	288	597542.2	4492105.1	597578.7	4492016.9		597584.3	4492003.3		597581.8	4492009.5
289	1.6	1.0	0.8	0.4	0.1	-0.8	289	597572.2	4492111.0	597605.5	4492030.7		597613.0	4492012.6		597608.9	4492022.4
290	1.5	1.0		0.4			290	597603.0	4492115.1	597634.7	4492038.5		597642.7	4492019.3			
291	1.4	0.9	0.7	0.4	0.1	-1.2	291	597631.8	4492124.0	597660.8	4492053.8		597668.8	4492034.7		597662.6	4492049.7
292	1.2	0.9	0.6	0.4	0.1	-1.0	292	597661.3	4492131.0	597687.8	4492067.1		597695.4	4492048.9		597699.9	4492062.0
293	1.1	0.8	0.6	0.5	0.1	-1.3	293	597690.4	4492139.2	597714.1	4492082.1		597723.9	4492058.5		597716.9	4492075.2
294	1.0	0.8	0.5	0.5	0.1	-1.3	294	597719.4	4492147.6	597741.3	4492094.8		597750.7	4492072.0		597744.0	4492088.2
295	0.9	0.8	0.5	0.6	0.2	-1.3	295	597748.0	4492157.1	597767.2	4492110.7		597778.1	4492084.3		597771.1	4492101.2
296	0.8	0.7	0.5	0.7	0.2	-1.4	296	597776.2	4492167.3	597793.0	4492126.9		597805.9	4492095.6		597798.4	4492113.6
297	0.8	0.7	0.5	0.6	0.2	-1.1	297	597804.5	4492177.5	597820.7	4492138.3		597832.0	4492110.9		597825.9	4492125.7
298	0.7	0.7	0.5	0.8	0.3	-1.4	298	597832.3	4492188.6	597846.3	4492155.0		597861.0	4492119.5		597853.4	4492137.8
299	0.5	0.7	0.5	0.9	0.4	-1.1	299	597859.7	4492200.9	597871.0	4492173.7		597886.9	4492135.2		597881.0	4492149.5
300	0.6	0.7	0.5	0.8	0.4	-1.0	300	597886.5	4492214.5	597898.5	4492185.6		597913.5	4492149.4		597908.4	4492161.7
301	0.5	0.6	0.5	0.8	0.4	-0.9	301	597914.7	4492224.9	597926.1	4492197.5		597940.4	4492162.9		597935.9	4492173.8
302	0.5	0.7	0.5	0.9	0.4	-1.1	302	597942.0	4492237.5	597952.6	4492211.8		597969.0	4492172.3		597962.9	4492186.8
303	0.5	0.7	0.5	0.9	0.4	-1.1	303	597969.2	4492250.2	597979.1	4492226.1		597995.8	4492186.0		597989.8	4492200.4
304	0.5		0.5		0.4		304	597996.2	4492263.3	598006.8	4492237.7					598016.7	4492213.7
305	0.5	0.7	0.5	0.9	0.4	-1.4	305	598023.3	4492276.3	598034.5	4492249.2		598051.8	4492207.4		598044.5	4492225.1
306	0.5	0.7	0.5	1.0	0.5	-1.6	306	598050.6	4492288.8	598060.3	4492265.3		598079.5	4492218.9		598071.2	4492239.1
307	0.4	0.7	0.4	1.1	0.5	-1.7	307	598078.2	4492300.5	598086.7	4492280.1		598107.6	4492229.6		598098.4	4492251.9
308	0.5	0.7	0.4	1.1	0.4	-1.8	308	598105.9	4492312.2	598115.4	4492289.1		598135.3	4492241.0		598125.8	4492264.0
309	0.4	0.7	0.4	1.2	0.5	-1.8	309	598133.2	4492324.5	598141.2	4492305.3		598162.7	4492253.4		598153.2	4492276.3
310	0.3	0.8	0.5	1.3	0.6	-2.1	310	598160.6	4492336.9	598167.4	4492320.3		598192.1	4492260.7		598181.0	4492287.6
311	0.4	0.8	0.5	1.3	0.5	-2.3	311	598187.8	4492349.4	598196.4	4492328.7		598221.0	4492269.4		598208.4	4492299.7
312	0.3	0.9	0.5	1.5	0.6	-2.5	312	598215.0	4492362.2	598222.0	4492345.4		598249.1	4492279.9		598235.9	4492311.8
313	0.3	0.8	0.5	1.4	0.6	-2.3	313	598242.2	4492374.9	598248.4	4492360.1		598274.9	4492295.9		598262.6	4492325.6
314	0.3	0.8	0.4	1.3	0.5	-2.0	314	598269.4	4492387.8	598276.0	4492371.8		598299.6	4492314.9		598289.1	4492340.2
315	0.4	0.7	0.4	1.2	0.5	-2.0	315	598296.5	4492400.7	598303.9	4492382.9		598326.2	4492328.9		598315.5	4492354.7
316	0.3	0.8	0.4	1.4	0.6	-2.5	316	598323.7	4492413.3	598329.1	4492400.4		598356.0	4492335.4		598342.8	4492367.3
317	0.3	0.8	0.4	1.3	0.5	-2.4	317	598351.0	4492425.8	598357.2	4492410.9		598382.1	4492350.8		598369.1	4492382.1
318	0.4	0.8	0.4	1.2	0.4	-2.3	318	598378.5	4492438.0	598386.1	4492419.7		598408.6	4492365.1		598396.3	4492394.9

Table A-1. High-Water Shoreline Position Change -- Rockaway Inlet to Moriches Inlet, New York

High-Water Shoreline Position Change Rate (m/yr)							High-Water Shoreline Position (UTM Zone 18, NAD 1983)									
1873/88 to			1933/34 to		1983 to		1873/88		1933/34		1983		1991/97			
Transect #	1933/34	1983	1991/97	1983	1991/97	1991/97	Transect #	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)
319	0.3	0.8	0.4	1.2	0.4	-2.5	319	598406.0	4492449.8	598413.0	4492433.0	598436.0	4492377.4	598422.7	4492409.5
320	0.2	0.7	0.3	1.3	0.5	-2.4	320	598433.5	4492461.9	598438.3	4492450.3	598461.8	4492393.7	598449.1	4492424.2
321	0.2	0.7	0.3	1.3	0.4	-2.5	321	598460.9	4492474.1	598465.2	4492463.7	598488.8	4492406.9	598475.4	4492439.0
322	0.4		0.3		0.3		322	598488.0	4492487.0	598496.1	4492467.6			598502.4	4492452.3
323	0.4	0.7	0.3	1.1	0.2	-2.7	323	598514.4	4492501.8	598523.5	4492479.9	598543.6	4492431.2	598529.1	4492466.4
324	0.5	0.7	0.3	0.9	0.2	-2.4	324	598540.2	4492517.9	598551.2	4492491.4	598568.6	4492449.3	598555.7	4492480.5
325	0.6	0.7	0.4	0.8	0.1	-2.4	325	598565.9	4492534.3	598579.4	4492501.7	598594.9	4492464.1	598582.0	4492495.4
326	0.7	0.7	0.4	0.7	0.1	-2.0	326	598592.4	4492548.6	598606.6	4492514.2	598619.7	4492482.8	598608.8	4492509.0
327	0.7	0.7	0.3	0.6	-0.0	-2.2	327	598619.2	4492562.4	598634.3	4492525.8	598645.5	4492498.9	598633.8	4492527.1
328	0.8	0.7	0.3	0.6	-0.1	-2.3	328	598646.5	4492574.9	598663.0	4492535.0	598673.8	4492508.9	598661.6	4492538.3
329	0.8	0.7	0.4	0.6	-0.1	-2.2	329	598672.3	4492591.0	598689.8	4492548.8	598700.4	4492523.1	598688.6	4492551.6
330	0.8	0.7	0.4	0.6	0.0	-2.1	330	598699.3	4492604.2	598715.8	4492564.4	598727.7	4492535.6	598716.6	4492562.3
331	0.7	0.7	0.4	0.7	0.1	-1.8	331	598725.9	4492618.3	598741.6	4492580.3	598753.7	4492551.1	598743.9	4492574.8
332	0.7	0.7	0.4	0.6	0.2	-1.5	332	598752.5	4492632.4	598768.2	4492594.6	598780.1	4492565.8	598772.1	4492585.1
333		0.8	0.5			-1.8	333	598779.9	4492644.7			598810.1	4492571.7	598800.6	4492594.8
334	0.9	0.8	0.5	0.6	0.0	-2.0	334	598807.5	4492656.6	598827.2	4492609.0	598838.9	4492580.8	598828.2	4492606.4
335	0.9	0.8	0.4	0.6	0.0	-2.1	335	598835.2	4492668.1	598855.0	4492620.3	598866.3	4492592.9	598855.1	4492619.9
336	0.9	0.8	0.4	0.7	0.1	-2.1	336	598864.4	4492675.9	598883.1	4492630.8	598895.5	4492600.8	598884.5	4492627.3
337	1.0		0.4		-0.1		337	598893.5	4492684.0	598915.0	4492632.2			598912.4	4492638.5
338	0.9		0.4		-0.1		338	598922.6	4492692.3	598942.5	4492644.1			598940.7	4492648.5
339	0.9	0.7	0.4	0.5	-0.1	-2.2	339	598950.8	4492702.6	598970.5	4492654.9	598980.1	4492631.7	598968.6	4492659.4
340	1.1	0.8		0.4			340	598978.7	4492713.5	599002.0	4492657.3	599008.6	4492641.3		
341	1.1	0.8	0.5	0.3	-0.1	-1.4	341	599006.1	4492725.7	599030.5	4492667.0	599036.2	4492653.2	599028.8	4492671.0
342	1.1	0.8	0.5	0.4	0.0	-1.5	342	599033.7	4492737.6	599056.2	4492683.2	599064.1	4492664.1	599056.3	4492683.1
343	1.0	0.8	0.5	0.5	0.0	-1.5	343	599061.3	4492749.2	599083.6	4492695.4	599092.1	4492674.9	599084.3	4492693.8
344	1.2	0.8	0.5	0.3	-0.0	-1.2	344	599088.6	4492761.8	599113.2	4492702.4	599118.8	4492688.9	599112.4	4492704.4
345	1.1	0.8	0.5	0.4	0.0	-1.4	345	599115.9	4492774.4	599140.3	4492715.5	599147.6	4492697.7	599140.2	4492715.5
346	1.1	0.8	0.6	0.4	0.1	-1.2	346	599143.1	4492786.9	599167.1	4492729.0	599175.0	4492710.1	599168.6	4492725.5
347	1.3	0.8		0.3			347	599170.4	4492799.4	599197.3	4492734.6	599202.7	4492721.5		
348	1.3	0.8	0.6	0.2	-0.1	-1.1	348	599198.5	4492809.9	599226.0	4492743.6	599230.3	4492733.3	599224.5	4492747.2
349	1.2		0.5		-0.1		349	599226.8	4492820.2	599253.0	4492757.0			599251.1	4492761.5
350	1.2	0.8		0.4			350	599255.5	4492829.3	599280.9	4492768.0	599287.6	4492751.6		
351	1.2	0.8	0.5	0.4	-0.1	-1.9	351	599284.5	4492837.7	599309.8	4492776.5	599316.8	4492759.7	599306.8	4492783.9
352	1.2	0.8	0.5	0.3	-0.1	-1.7	352	599312.5	4492848.5	599337.2	4492788.7	599343.5	4492773.7	599334.4	4492795.6
353	1.1	0.8	0.5	0.4	-0.1	-1.7	353	599340.4	4492859.4	599364.0	4492802.6	599371.3	4492784.9	599362.0	4492807.3
354		0.8	0.5			-1.3	354	599368.1	4492871.0			599398.7	4492797.2	599391.9	4492813.4
355	1.3	0.8	0.6	0.2	-0.1	-1.1	355	599395.4	4492883.5	599422.5	4492818.0	599426.4	4492808.6	599420.5	4492822.9
356	1.2	0.8	0.5	0.2	-0.1	-1.3	356	599422.7	4492895.9	599449.0	4492832.4	599453.5	4492821.5	599446.6	4492838.2
357	1.3	0.8	0.5	0.2	-0.1	-1.2	357	599450.4	4492907.4	599477.8	4492841.3	599481.5	4492832.3	599474.9	4492848.4
358	1.3	0.8	0.6	0.2	-0.1	-1.2	358	599478.1	4492918.9	599505.6	4492852.7	599509.7	4492842.8	599503.2	4492858.4
359	1.2	0.8	0.5	0.3	-0.1	-1.2	359	599505.9	4492930.3	599531.5	4492868.4	599536.8	4492855.7	599530.5	4492871.0
360	1.3	0.8	0.5	0.2	-0.1	-1.3	360	599533.6	4492941.9	599560.5	4492876.8	599564.7	4492866.8	599557.9	4492883.0
361	1.3		0.6		-0.1		361	599561.1	4492953.8	599588.2	4492888.3			599586.3	4492892.9
362	1.4	0.8	0.6	0.0	-0.2	-1.0	362	599588.7	4492965.6	599619.5	4492891.1	599619.6	4492891.0	599614.0	4492904.4
363	1.4	0.8	0.6	0.2	-0.2	-1.2	363	599616.3	4492977.2	599645.3	4492907.2	599648.1	4492900.5	599641.8	4492915.8
364	1.3	0.8	0.6	0.2	-0.1	-1.3	364	599644.1	4492988.7	599672.7	4492919.5	599677.2	4492908.7	599670.2	4492925.5
365		0.8					365	599672.2	4492999.2			599705.2	4492919.4		
366	1.4	0.8	0.6	0.2	-0.1	-1.2	366	599700.3	4493009.7	599730.5	4492936.8	599733.7	4492929.0	599727.5	4492944.0
367	1.4	0.8	0.6	0.2	-0.1	-1.1	367	599728.3	4493020.4	599757.8	4492949.3	599761.1	4492941.3	599755.5	4492954.9
368	1.4	0.9	0.6	0.2	-0.1	-1.3	368	599756.4	4493031.1	599786.8	4492957.5	599791.1	4492947.3	599783.9	4492964.6
369	1.5	0.9	0.6	0.1	-0.1	-1.1	369	599784.3	4493042.1	599816.6	4492964.2	599818.9	4492958.5	599813.2	4492972.3
370	1.5	0.9	0.6	0.2	-0.2	-1.3	370	599812.0	4493053.6	599843.4	4492977.9	599846.6	4492970.0	599839.9	4492986.3
371	1.5	0.9	0.6	0.1	-0.1	-1.0	371	599839.0	4493066.7	599871.5	4492988.4	599873.5	4492983.5	599868.2	4492996.2

Table A-1. High-Water Shoreline Position Change – Rockaway Inlet to Moriches Inlet, New York

	High-Water Shoreline Position Change Rate (m/yr)						High-Water Shoreline Position (UTM Zone 18, NAD 1983)								
	1873/88 to			1933/34 to		1983 to	1873/88		1933/34		1983		1991/97		
Transect #	1933/34	1983	1991/97	1983	1991/97	1991/97	Transect #	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)
372		0.9					372	599866.2	4493079.5			599903.9	4492988.5		
373	1.6	0.9	0.7	0.1	-0.1	-1.1	373	599893.8	4493091.2	599928.5	4493007.6	599931.0	4493001.5	599925.1	4493015.7
374	1.6	0.9	0.7	0.2	-0.1	-1.0	374	599921.4	4493103.1	599955.6	4493020.4	599958.5	4493013.4	599953.1	4493026.5
375	1.6		0.7		-0.1		375	599948.9	4493115.1	599983.6	4493031.2			599981.3	4493036.9
376	1.6	1.0	0.7	0.2	-0.1	-1.4	376	599976.6	4493126.7	600011.7	4493041.9	600015.8	4493032.0	600008.3	4493050.0
377	1.7	1.0	0.7	0.1	-0.2	-1.4	377	600004.4	4493137.9	600039.8	4493052.4	600042.4	4493046.1	600034.9	4493064.3
378	1.6	0.9	0.7	0.2	-0.1	-1.3	378	600033.1	4493146.9	600066.8	4493065.7	600070.7	4493056.2	600063.6	4493073.4
379	1.6	0.9	0.7	0.1	-0.2	-1.1	379	600061.9	4493155.8	600096.3	4493072.8	600097.8	4493069.3	600092.0	4493083.2
380	1.6	0.9	0.7	0.1	-0.1	-0.8	380	600089.6	4493167.4	600123.5	4493085.5	600124.9	4493082.1	600120.4	4493093.0
381	1.6	0.9	0.6	0.1	-0.3	-1.4	381	600116.9	4493179.8	600152.1	4493094.9	600153.5	4493091.6	600145.8	4493110.0
382	1.6	1.0	0.7	0.2	-0.2	-1.5	382	600143.8	4493193.2	600179.0	4493108.4	600182.2	4493100.5	600174.0	4493120.3
383	1.8	0.9	0.7	-0.1	-0.3	-1.0	383	600170.7	4493206.7	600209.5	4493113.1	600208.2	4493116.2	600202.7	4493129.5
384	1.8	0.9	0.7	-0.1	-0.3	-0.9	384	600198.4	4493218.2	600236.4	4493126.5	600234.9	4493130.2	600230.2	4493141.6
385	1.8	0.9	0.7	-0.1	-0.3	-0.8	385	600226.2	4493229.4	600264.5	4493137.1	600262.3	4493142.4	600258.0	4493152.8
386	1.8		0.7		-0.4		386	600254.1	4493240.6	600293.5	4493145.3			600284.6	4493167.0
387	1.8		0.7		-0.3		387	600282.0	4493251.5	600321.5	4493156.1			600313.9	4493174.5
388	1.8		0.7		-0.2		388	600310.0	4493262.5	600348.8	4493168.9			600343.1	4493182.4
389	1.8		0.8		-0.2		389	600337.8	4493273.7	600376.8	4493179.5			600371.8	4493191.5
390	1.9		0.7		-0.3		390	600365.9	4493284.2	600406.3	4493186.6			600399.4	4493203.3
391	1.9		0.8		-0.1		391	600394.5	4493293.6	600434.2	4493197.8			600430.7	4493206.1
392	1.9		0.8		-0.1		392	600422.2	4493305.0	600461.8	4493209.5			600460.3	4493213.2
393			0.9				393	600449.9	4493316.6					600492.0	4493215.0
394	2.0		1.0		0.1		394	600477.3	4493328.8	600520.0	4493225.8			600521.7	4493221.7
395	2.0		1.0		0.1		395	600504.8	4493340.9	600548.5	4493235.4			600551.4	4493228.4
396	2.1		1.1		0.1		396	600532.2	4493353.1	600577.8	4493243.0			600580.9	4493235.7
397			1.5				397	600559.8	4493364.9					600628.3	4493199.4
398	2.2		1.5		0.8		398	600587.5	4493376.5	600634.2	4493263.6			600654.6	4493214.4
399	2.2		1.5		0.9		399	600615.2	4493387.8	600661.5	4493276.0			600682.6	4493225.1
400	2.2		1.5		0.8		400	600643.1	4493399.0	600689.5	4493287.0			600709.3	4493239.2
401	2.2		1.5		0.8		401	600671.0	4493410.1	600718.8	4493294.7			600737.7	4493249.0
402	2.2		1.5		0.8		402	600699.0	4493420.8	600746.6	4493305.8			600766.1	4493258.7
403	2.2		1.6		1.1		403	600727.1	4493431.4	600773.8	4493318.5			600799.0	4493257.7
404	2.1		1.7		1.3		404	600754.8	4493442.9	600800.0	4493333.8			600831.2	4493258.4
405	2.1		1.7		1.3		405	600782.9	4493453.5	600826.9	4493347.2			600858.2	4493271.6
406	2.0		1.7		1.4		406	600811.5	4493462.8	600855.1	4493357.5			600887.7	4493278.7
407	2.0		1.7		1.4		407	600840.1	4493472.1	600882.3	4493370.2			600915.1	4493291.1
408	1.9		1.6		1.3		408	600868.8	4493481.3	600909.8	4493382.2			600941.4	4493306.0
409	1.8		1.6		1.4		409	600897.4	4493490.5	600936.4	4493396.3			600969.6	4493316.3
410	1.8		1.6		1.5		410	600925.9	4493500.2	600963.4	4493409.5			601000.1	4493321.0
411	1.8		1.8		1.8		411	600952.3	4493514.8	600991.4	4493420.3			601034.4	4493316.7
412	2.0		1.8		1.6		412	600978.4	4493530.3	601021.6	4493425.8			601061.1	4493330.6
413	2.1		1.9		1.6		413	601005.3	4493543.8	601049.8	4493436.1			601089.3	4493340.7
414	2.2		1.9		1.6		414	601032.7	4493555.9	601079.4	4493443.3			601116.8	4493352.8
415			1.8				415	601061.1	4493565.8					601143.5	4493366.9
416	2.4		1.8		1.3		416	601090.2	4493573.9	601140.7	4493451.9			601172.9	4493374.1
417	2.4		1.9		1.4		417	601120.0	4493580.3	601171.8	4493455.3			601205.9	4493372.9
418	2.6		2.0		1.4		418	601148.6	4493589.8	601204.5	4493454.8			601239.3	4493370.8
419	2.8		2.0		1.3		419	601175.8	4493602.4	601235.4	4493458.5			601266.8	4493382.6
420	2.7		2.0		1.3		420	601206.3	4493607.1	601264.8	4493465.8			601297.1	4493387.9
421	2.7		1.9		1.1		421	601237.9	4493609.2	601296.0	4493468.9			601323.1	4493403.5
422	2.8		1.8		0.9		422	601269.7	4493610.8	601329.1	4493467.4			601350.7	4493415.4
423	2.8		1.8		0.9		423	601298.8	4493619.0	601358.9	4493474.0			601380.2	4493422.5
424	3.0		1.9		0.9		424	601327.3	4493628.5	601391.3	4493474.1			601414.0	4493419.2

Table A-1. High-Water Shoreline Position Change – Rockaway Inlet to Moriches Inlet, New York

	High-Water Shoreline Position Change Rate (m/yr)					
	1873/88 to			1933/34 to		1983 to
Transect #	1933/34	1983	1991/97	1983	1991/97	1991/97
425			1.9			
426	3.4		1.9		0.6	
427	3.4		2.0		0.7	
428	3.4		1.9		0.6	
429	3.4		1.9		0.5	
430	3.4		1.8		0.5	
431	3.3		1.9		0.7	
432	3.3		2.0		0.9	
433	3.3		1.9		0.7	
434	3.3		1.9		0.7	
435	3.2		1.9		0.7	
436	3.2		1.8		0.6	
437	3.2		1.8		0.6	
438	3.1		1.9		0.8	
439	3.1					
440	3.1		1.9		0.7	
441	3.1		1.9		0.8	
442	3.2		1.9		0.7	
443	3.4		1.8		0.5	
444	3.3		1.8		0.5	
445	3.2		1.8		0.7	
446	3.3					
447	3.3		1.9		0.6	
448	3.4		1.9		0.5	
449	3.3		1.8		0.5	
450	3.3		1.8		0.4	
451	3.3		1.8		0.4	
452	3.2		1.8		0.5	
453						
454	3.0		1.8		0.7	
455	2.8		1.7		0.7	
456			1.6			
457	2.6		1.6		0.7	
458	2.4		1.6		0.8	
459	2.2		1.6		1.0	
460	2.2		1.6		1.2	
461	2.0		1.5		1.1	
462	1.9		1.4		1.0	
463	1.8		1.4		1.0	
464	1.6		1.3		1.0	
465	1.4		1.2		1.0	
466	1.2		1.2		1.1	
467	1.1		1.1		1.2	
468	0.9		1.1		1.2	
469	0.8		1.0		1.3	
470	0.7		1.0		1.3	
471	0.5		1.0		1.4	
472	0.4		1.0		1.5	
473	0.3		0.9		1.5	
474	0.2		0.9		1.5	
475	0.1		0.9		1.5	
476	0.0		0.8		1.5	
477	-0.2		0.7		1.5	

	High-Water Shoreline Position (UTM Zone 18, NAD 1983)							
	1873/88		1933/34		1983		1991/97	
Transect #	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)
425	601355.3	4493639.4					601443.6	4493426.2
426	601382.6	4493651.9	601455.5	4493476.0			601470.9	4493438.7
427	601410.7	4493662.4	601483.6	4493486.4			601499.8	4493447.3
428	601440.3	4493669.4	601512.0	4493496.2			601526.5	4493461.4
429	601470.1	4493675.8	601542.5	4493501.0			601555.3	4493470.2
430	601499.9	4493682.3	601572.3	4493507.5			601583.1	4493481.5
431	601529.3	4493689.7	601599.6	4493519.9			601615.4	4493481.9
432	601558.3	4493698.2	601627.8	4493530.2			601648.3	4493480.9
433	601586.6	4493708.0	601658.2	4493535.3			601674.7	4493495.5
434	601615.3	4493717.3	601685.5	4493547.7			601702.8	4493506.0
435	601644.2	4493725.9	601712.7	4493560.4			601729.0	4493521.1
436	601672.9	4493734.9	601741.9	4493568.5			601756.6	4493532.9
437	601702.8	4493741.3	601771.7	4493574.9			601785.6	4493541.4
438	601734.1	4493744.1	601800.1	4493584.7			601819.4	4493538.1
439	601764.8	4493748.4	601830.7	4493589.2				
440	601792.9	4493758.7	601859.6	4493597.8			601877.3	4493555.1
441	601820.8	4493769.9	601887.7	4493608.4			601906.0	4493564.2
442	601848.7	4493780.9	601917.5	4493614.8			601934.7	4493573.3
443	601877.5	4493789.9	601950.6	4493613.4			601961.3	4493587.5
444	601908.7	4493792.7	601979.8	4493621.1			601990.9	4493594.5
445	601940.0	4493795.7	602008.1	4493631.2			602023.9	4493593.0
446	601968.9	4493804.3	602038.5	4493636.3				
447	601997.3	4493814.0	602068.9	4493641.3			602082.1	4493609.4
448	602026.2	4493822.8	602098.3	4493648.8			602110.8	4493618.6
449	602055.9	4493829.4	602127.3	4493657.1			602138.9	4493629.0
450	602085.6	4493836.2	602157.0	4493663.8			602166.8	4493640.1
451	602115.6	4493842.1	602186.0	4493672.2			602196.7	4493646.4
452	602146.2	4493846.7	602215.4	4493679.6			602228.4	4493648.1
453	602177.1	4493850.4						
454	602208.0	4493854.1	602271.9	4493699.9			602288.2	4493660.6
455	602239.5	4493856.6	602298.8	4493713.4			602316.6	4493670.4
456	602270.9	4493859.2					602345.4	4493679.3
457	602302.0	4493862.4	602358.0	4493727.3			602374.5	4493687.5
458	602333.8	4493864.1	602385.3	4493739.7			602404.4	4493693.7
459	602365.6	4493865.8	602413.1	4493751.0			602437.2	4493692.9
460	602397.2	4493867.8	602443.4	4493756.4			602471.4	4493688.7
461	602428.8	4493869.9	602471.8	4493766.2			602497.8	4493703.3
462	602460.4	4493872.0	602500.9	4493774.3			602525.8	4493714.0
463	602492.4	4493873.1	602530.9	4493780.2			602554.4	4493723.4
464	602524.5	4493874.2	602559.5	4493789.6			602583.0	4493732.8
465	602556.5	4493875.2	602587.1	4493801.3			602611.4	4493742.6
466	602588.1	4493877.4	602613.7	4493815.5			602640.3	4493751.2
467	602619.3	4493880.3	602642.0	4493825.6			602669.7	4493758.7
468	602650.6	4493883.2	602670.6	4493835.0			602699.1	4493766.2
469	602682.0	4493885.8	602698.1	4493847.0			602728.1	4493774.4
470	602712.4	4493891.3	602712.4	4493854.1			602712.6	4493770.0
471	602742.4	4493894.8	602742.4	4493865.6			602742.6	4493778.5
472	602772.4	4493898.3	602772.4	4493876.7			602772.5	4493785.9
473	602802.3	4493901.5	602802.4	4493885.4			602802.5	4493792.6
474	602832.3	4493904.9	602832.4	4493892.6			602832.5	4493798.5
475	602862.3	4493908.4	602862.3	4493901.6			602862.5	4493807.8
476	602892.3	4493911.4	602892.3	4493911.3			602892.5	4493817.9
477	602922.3	4493913.7	602922.3	4493922.0			602922.5	4493829.0

Table A-1. High-Water Shoreline Position Change – Rockaway Inlet to Moriches Inlet, New York

	High-Water Shoreline Position Change Rate (m/yr)						High-Water Shoreline Position (UTM Zone 18, NAD 1983)									
	1873/88 to			1933/34 to		1983 to	1873/88		1933/34		1983		1991/97			
Transect #	1933/34	1983	1991/97	1983	1991/97	1991/97	Transect #	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	
478	-0.4		0.6		1.5		478	602952.3	4493914.8	602952.3	4493934.8			602952.5	4493840.1	
479	-0.6		0.6		1.5		479	602982.3	4493916.2	602982.3	4493947.4			602982.4	4493851.0	
480	-0.7		0.5		1.5		480	603012.3	4493917.8	603012.2	4493957.9			603012.4	4493861.9	
481	-0.9		0.4		1.5		481	603042.3	4493919.8	603042.2	4493969.8			603042.4	4493873.0	
482	-1.0		0.3		1.5		482	603072.3	4493922.1	603072.2	4493976.9			603072.4	4493881.5	
483	-1.2		0.3		1.6		483	603102.3	4493923.4	603102.2	4493989.4			603102.4	4493889.1	
484	-1.3		0.2		1.5		484	603132.3	4493924.3	603132.2	4493998.3			603132.3	4493902.3	
485	-1.4		0.1		1.5		485	603162.3	4493925.1	603162.2	4494004.4			603162.3	4493912.9	
486	-1.6		0.0		1.5		486	603192.3	4493926.1	603192.2	4494014.3			603192.3	4493920.9	
487	-1.7		0.0		1.6		487	603222.3	4493927.8	603222.1	4494022.9			603222.3	4493925.5	
488	-1.7						488	603252.3	4493929.4	603252.1	4494022.1					
489	-1.7		0.1		1.6		489	603282.3	4493929.8	603282.1	4494023.0			603282.3	4493923.8	
490	-1.9		-0.1		1.6		490	603312.3	4493929.4	603312.1	4494033.6			603312.3	4493934.8	
491	-2.0		-0.1		1.5		491	603342.3	4493930.1	603342.1	4494039.9			603342.3	4493945.9	
492	-2.0		-0.2		1.4		492	603372.3	4493931.2	603372.1	4494044.2			603372.3	4493955.3	
493	-2.1		-0.3		1.4		493	603402.3	4493932.6	603402.1	4494049.0			603402.2	4493964.0	
494	-2.2		-0.3		1.4		494	603432.3	4493934.2	603432.1	4494059.0			603432.2	4493974.3	
495	-2.3		-0.4		1.4		495	603462.3	4493936.0	603462.1	4494064.8			603462.2	4493980.0	
496	-2.3		-0.3		1.5		496	603492.3	4493937.8	603492.1	4494068.7			603492.2	4493976.0	
497	-2.3		-0.4		1.3		497	603522.3	4493939.8	603522.1	4494067.1			603522.2	4493986.3	
498	-2.3		-0.5		1.2		498	603552.3	4493941.6	603552.0	4494072.8			603552.2	4494000.1	
499	-2.4		-0.6		1.1		499	603582.3	4493943.4	603582.0	4494079.5			603582.2	4494012.0	
500	-2.4		-0.6		0.9		500	603612.3	4493944.9	603612.0	4494078.6			603612.1	4494021.3	
501	-2.5		-0.7		0.9		501	603642.3	4493946.4	603642.0	4494084.5			603642.1	4494027.6	
502	-2.6		-0.7		1.0		502	603672.3	4493948.4	603672.0	4494091.5			603672.1	4494030.1	
503	-2.5		-0.7		1.0		503	603702.3	4493950.5	603702.0	4494091.6			603702.1	4494030.4	
504	-2.6						504	603732.3	4493952.1	603732.0	4494097.0					
505	-2.7		-0.6		1.3		505	603762.3	4493954.1	603762.0	4494102.8			603762.1	4494023.3	
506	-2.6		-0.7		1.1		506	603792.3	4493956.2	603792.0	4494101.1			603792.1	4494033.0	
507	-2.6		-0.7		1.0		507	603822.3	4493957.9	603822.0	4494101.5			603822.1	4494040.9	
508	-2.6		-0.7		0.9		508	603852.2	4493959.4	603852.0	4494105.6			603852.1	4494047.6	
509	-2.6		-0.8		0.9		509	603882.2	4493960.8	603882.0	4494107.1			603882.1	4494052.8	
510	-2.6		-0.8		0.8		510	603912.2	4493962.1	603912.0	4494106.2			603912.1	4494057.5	
511	-2.6		-0.8		0.8		511	603942.2	4493963.1	603942.0	4494108.4			603942.1	4494060.3	
512	-2.5						512	603972.2	4493963.7	603972.0	4494105.0					
513	-2.5		-0.7		0.9		513	604002.2	4493963.2	604002.0	4494105.3			604002.1	4494047.6	
514	-2.5		-0.8		0.7		514	604032.2	4493962.8	604032.0	4494100.0			604032.1	4494056.8	
515	-2.4		-0.9		0.5		515	604062.2	4493962.6	604062.0	4494095.5			604062.1	4494067.0	
516	-2.4		-1.0		0.3		516	604092.2	4493962.2	604092.0	4494095.7			604092.0	4494077.2	
517	-2.4		-1.0		0.2		517	604122.2	4493961.5	604122.0	4494096.4			604122.0	4494081.6	
518	-2.3		-1.0		0.1		518	604152.2	4493960.7	604152.0	4494088.7			604152.0	4494083.8	
519	-2.2		-1.0		0.0		519	604182.2	4493959.6	604182.0	4494085.1			604182.0	4494082.6	
520	-2.2	-1.2	-1.0	-0.1	0.2	1.1	520	604212.2	4493958.9	604212.0	4494083.5	604212.0	4494087.2	604212.1	4494072.1	
521	-2.0	-1.3	-0.9	-0.4	0.1	1.8	521	604242.2	4493958.5	604242.1	4494071.3	604242.0	4494089.4	604242.1	4494064.8	
522	-2.3	-1.3	-1.0	-0.2	0.2	1.6	522	604272.2	4493958.5	604272.0	4494084.5	604272.0	4494094.6	604272.1	4494072.5	
523	-2.2	-1.3	-1.0	-0.3	0.1	1.5	523	604302.2	4493958.7	604302.0	4494084.1	604302.0	4494098.1	604302.0	4494078.0	
524	-2.1	-1.4	-1.0	-0.6	-0.1	1.6	524	604332.2	4493958.6	604332.0	4494073.9	604332.0	4494103.6	604332.0	4494081.3	
525	-1.9	-1.4	-1.1	-0.9	-0.3	1.7	525	604362.3	4493958.1	604362.1	4494066.0	604362.0	4494109.2	604362.0	4494086.5	
526	-1.8	-1.5	-1.1	-1.2	-0.6	1.7	526	604392.3	4493956.9	604392.1	4494056.4	604392.0	4494114.7	604392.0	4494091.3	
527	-1.6	-1.6	-1.2	-1.5	-0.8	1.7	527	604422.3	4493955.4	604422.1	4494046.9	604422.0	4494120.0	604422.0	4494097.4	
528	-1.5	-1.6	-1.3	-1.8	-1.0	1.7	528	604452.3	4493954.1	604452.1	4494037.8	604452.0	4494124.9	604452.0	4494102.2	
529	-1.4	-1.7	-1.3	-2.0	-1.2	1.5	529	604482.3	4493953.5	604482.1	4494033.0	604482.0	4494129.8	604482.0	4494109.3	
530	-1.4	-1.7	-1.4	-2.1	-1.4	1.2	530	604512.3	4493953.0	604512.1	4494031.8	604511.9	4494134.3	604512.0	4494117.6	

Table A-1. High-Water Shoreline Position Change – Rockaway Inlet to Moriches Inlet, New York

	High-Water Shoreline Position Change Rate (m/yr)					
	1873/88 to			1933/34 to		1983 to
Transect #	1933/34	1983	1991/97	1983	1991/97	1991/97
531	-1.4	-1.8		-2.2		
532	-1.5	-1.8	-1.5	-2.2	-1.6	0.7
533	-1.6	-1.9	-1.6	-2.2	-1.6	0.4
534	-1.7	-1.9	-1.7	-2.2	-1.8	-0.2
535	-1.8	-2.0	-1.8	-2.2	-1.7	-0.2
536	-1.9	-2.0	-1.8	-2.1	-1.7	-0.3
537	-2.1	-2.1	-1.9	-2.1	-1.7	-0.4
538	-2.2	-2.1	-1.9	-1.9	-1.5	-0.1
539	-2.5	-2.1	-1.9	-1.7	-1.3	-0.0
540	-2.7	-2.1	-1.9	-1.4	-1.1	0.0
541	-2.8	-2.1	-1.8	-1.2	-0.9	-0.0
542	-2.9	-2.0	-1.8	-1.0	-0.8	0.0
543	-3.0	-2.0	-1.8	-0.8	-0.7	-0.2
544	-3.0	-1.9	-1.7	-0.7	-0.6	-0.3
545	-3.0	-1.9	-1.7	-0.5	-0.5	-0.4
546	-3.1	-1.8	-1.7	-0.4	-0.5	-0.7
547	-3.1	-1.8	-1.7	-0.3	-0.3	-0.6
548	-3.2	-1.8	-1.6	-0.2	-0.2	-0.5
549	-3.1	-1.7	-1.6	-0.2	-0.1	-0.1
550	-3.1	-1.7	-1.5	-0.2	-0.1	0.3
551	-3.0	-1.7	-1.4	-0.3	-0.1	0.8
552	-2.9	-1.7	-1.4	-0.4	-0.0	1.3
553	-2.7	-1.7	-1.3	-0.6	-0.0	1.9
554	-2.6	-1.7	-1.2	-0.7	0.1	2.8
555	-2.9	-1.7	-1.2	-0.4	0.3	2.9
556	-3.2	-1.7	-1.2	0.1	0.6	2.6
557	-3.4	-1.7	-1.2	0.3	0.7	2.4
558	-3.4	-1.7	-1.3	0.3	0.6	1.8
559		5.1	5.1			5.2
560		5.2	5.0			4.0
561		5.2	5.0			3.8
562		5.2	5.0			3.3
563		5.1	4.9			3.4
564		5.0	4.9			3.7
565		4.9	4.8			4.2
566		4.8	4.7			4.4
567		4.7	4.6			4.3
568		4.5	4.5			4.3
569		4.3	4.4			5.0
570		4.3	4.3			4.8
571		4.2	4.2			4.9
572		4.1	4.1			4.3
573	0.2	4.1	4.0	8.3	7.4	3.4
574	0.2		3.9		7.2	
575	0.2	3.9	3.8	8.0	7.0	2.7
576	0.2	3.9	3.7	7.9	6.8	1.8
577	0.1	3.7	3.5	7.8	6.6	1.4
578	0.0	3.6	3.4	7.4	6.4	1.7
579	0.0	3.5	3.3	7.4	6.2	1.0
580	-0.0	3.4	3.2	7.3	6.1	0.6
581	0.0	3.4	3.1	7.1	5.8	0.3
582	0.1	3.3	3.0	6.8	5.6	0.2
583	0.1	3.2	2.9	6.6	5.4	0.1

	High-Water Shoreline Position (UTM Zone 18, NAD 1983)							
	1873/88		1933/34		1983		1991/97	
Transect #	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)
531	604542.3	4493952.7	604542.1	4494032.7	604541.9	4494137.9		
532	604572.3	4493950.9	604572.1	4494035.0	604571.9	4494141.6	604571.9	4494132.7
533	604602.3	4493949.1	604602.1	4494037.5	604601.9	4494145.1	604601.9	4494139.2
534	604632.3	4493947.5	604632.1	4494041.0	604631.9	4494148.8	604631.9	4494151.1
535	604662.3	4493946.7	604662.1	4494047.4	604661.9	4494152.8	604661.9	4494154.8
536	604692.3	4493946.0	604692.1	4494051.7	604691.9	4494156.7	604691.9	4494160.3
537	604722.3	4493944.4	604722.1	4494059.1	604721.9	4494160.2	604721.9	4494165.7
538	604752.3	4493945.0	604752.1	4494070.2	604751.9	4494163.7	604751.9	4494165.1
539	604782.3	4493946.0	604782.0	4494083.2	604781.9	4494166.7	604781.9	4494167.2
540	604812.3	4493947.0	604812.0	4494098.8	604811.9	4494166.5	604811.9	4494166.4
541	604842.3	4493947.6	604842.0	4494106.5	604841.9	4494164.1	604841.9	4494164.5
542	604872.3	4493948.6	604872.0	4494111.7	604871.9	4494159.6	604871.9	4494159.4
543	604902.3	4493948.8	604902.0	4494114.1	604901.9	4494154.3	604901.9	4494156.6
544	604932.3	4493948.3	604932.0	4494114.8	604931.9	4494148.9	604931.9	4494152.3
545	604962.3	4493947.0	604962.0	4494117.4	604961.9	4494143.5	604961.9	4494149.0
546	604992.3	4493945.8	604992.0	4494119.0	604991.9	4494137.5	604991.9	4494146.9
547	605022.3	4493944.7	605022.0	4494119.6	605021.9	4494132.4	605021.9	4494141.2
548	605052.3	4493943.9	605052.0	4494121.0	605052.0	4494128.4	605051.9	4494134.7
549	605082.3	4493943.5	605082.0	4494119.5	605082.0	4494126.6	605082.0	4494127.9
550	605112.3	4493943.2	605112.0	4494114.7	605112.0	4494125.2	605112.0	4494121.0
551	605142.3	4493943.0	605142.0	4494109.4	605142.0	4494124.3	605142.0	4494114.0
552	605172.3	4493943.6	605172.0	4494103.8	605172.0	4494123.7	605172.0	4494106.4
553	605202.3	4493944.1	605202.0	4494094.7	605202.0	4494123.7	605202.0	4494097.1
554	605232.3	4493942.2	605232.0	4494088.2	605232.0	4494122.7	605232.0	4494084.6
555	605262.3	4493941.5	605262.0	4494101.4	605262.0	4494120.6	605262.0	4494080.8
556	605292.3	4493941.3	605292.0	4494120.7	605292.0	4494117.3	605292.0	4494081.2
557	605322.3	4493941.8	605322.0	4494129.3	605322.0	4494116.6	605322.0	4494083.0
558	605352.3	4493941.9	605352.0	4494129.8	605352.0	4494117.4	605352.0	4494092.1
559	605386.8	4493941.8			605387.7	4493419.5	605387.8	4493362.2
560	605416.8	4493941.6			605417.7	4493410.5	605417.8	4493366.7
561	605446.8	4493940.1			605447.7	4493409.8	605447.8	4493367.7
562	605476.8	4493938.3			605477.7	4493408.4	605477.8	4493371.9
563	605506.8	4493936.1			605507.7	4493413.6	605507.8	4493376.3
564	605536.8	4493935.8			605537.7	4493421.8	605537.8	4493381.6
565	605566.8	4493935.3			605567.7	4493433.8	605567.8	4493387.4
566	605596.8	4493932.9			605597.7	4493441.9	605597.7	4493393.5
567	605626.8	4493929.8			605627.6	4493449.5	605627.7	4493402.8
568	605656.8	4493926.9			605657.6	4493459.2	605657.7	4493412.3
569	605686.8	4493924.3			605687.6	4493477.1	605687.7	4493421.8
570	605716.8	4493923.2			605717.6	4493483.7	605717.7	4493431.3
571	605746.8	4493921.4			605747.6	4493494.3	605747.7	4493440.8
572	605776.8	4493918.8			605777.6	4493497.5	605777.6	4493450.3
573	605806.8	4493916.9	605806.9	4493903.9	605807.6	4493497.0	605807.6	4493459.8
574	605836.8	4493914.6	605836.9	4493903.7			605837.6	4493469.3
575	605866.8	4493910.7	605866.9	4493900.7	605867.5	4493508.4	605867.6	4493479.0
576	605896.8	4493906.2	605896.9	4493898.2	605897.5	4493510.0	605897.6	4493490.4
577	605926.9	4493901.5	605926.9	4493898.7	605927.5	4493517.0	605927.6	4493501.8
578	605956.9	4493897.6	605956.9	4493895.3	605957.5	4493532.3	605957.5	4493513.2
579	605986.9	4493894.0	605986.9	4493894.0	605987.5	4493532.2	605987.5	4493521.8
580	606016.9	4493891.0	606016.9	4493893.3	606017.5	4493536.5	606017.5	4493530.1
581	606046.9	4493889.0	606046.9	4493888.9	606047.5	4493541.4	606047.5	4493538.5
582	606076.9	4493887.0	606076.9	4493883.7	606077.5	4493548.6	606077.5	4493546.9
583	606106.9	4493884.7	606106.9	4493881.4	606107.5	4493556.3	606107.5	4493555.2

Table A-1. High-Water Shoreline Position Change -- Rockaway Inlet to Moriches Inlet, New York

High-Water Shoreline Position Change Rate (m/yr)						High-Water Shoreline Position (UTM Zone 18, NAD 1983)									
1873/88 to			1933/34 to		1983 to	1873/88		1933/34		1983		1991/97			
Transect #	1933/34	1983	1991/97	1983	1991/97	Transect #	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	
584	0.0	3.0	2.8	6.2	5.3	1.2	584	606136.9	4493882.7	606136.9	4493881.1	606137.4	4493576.5	606137.4	4493563.0
585	0.1	3.0	2.7	6.3	5.1	0.1	585	606166.9	4493881.8	606166.9	4493877.8	606167.4	4493571.5	606167.4	4493570.5
586	0.1	2.9	2.7	6.0	4.9	0.1	586	606196.9	4493880.7	606196.9	4493873.1	606197.4	4493579.4	606197.4	4493578.0
587	0.3	2.9	2.6	5.7	4.6	-0.0	587	606226.9	4493879.0	606226.9	4493862.4	606227.4	4493585.3	606227.4	4493585.5
588	0.5	2.8	2.5	5.2	4.3	0.2	588	606256.9	4493877.2	606256.9	4493850.0	606257.4	4493594.4	606257.4	4493592.6
589	1.1	2.7	2.4	4.4	3.6	0.3	589	606286.9	4493875.5	606287.0	4493814.8	606287.4	4493600.2	606287.4	4493597.4
590	1.6	2.6	2.4	3.8	3.1	0.2	590	606316.9	4493874.2	606317.1	4493788.1	606317.4	4493604.4	606317.4	4493602.2
591	1.7	2.5	2.3	3.5	2.9	0.5	591	606346.9	4493873.3	606347.1	4493782.7	606347.4	4493611.9	606347.4	4493607.0
592	1.8	2.5	2.3	3.2	2.8	0.8	592	606376.9	4493872.4	606377.1	4493777.3	606377.3	4493620.4	606377.4	4493611.8
593	1.8	2.4	2.2	3.0	2.6	1.0	593	606406.9	4493871.3	606407.1	4493771.9	606407.3	4493627.4	606407.4	4493616.4
594	1.9	2.3	2.2	2.7	2.5	1.3	594	606436.9	4493871.0	606437.1	4493766.5	606437.3	4493633.6	606437.3	4493619.8
595	2.0	2.2	2.2	2.4	2.3	1.8	595	606466.9	4493871.1	606467.1	4493761.0	606467.3	4493642.7	606467.3	4493623.2
596		2.2	2.2			1.7	596	606496.9	4493871.8			606497.3	4493643.9	606497.3	4493625.3
597	3.5	2.3	2.2	0.9	1.0	1.5	597	606526.9	4493872.8	606527.2	4493686.5	606527.3	4493640.9	606527.3	4493624.2
598	3.4	2.2	2.2	0.8	1.1	2.3	598	606556.9	4493872.6	606557.2	4493688.6	606557.3	4493648.0	606557.3	4493623.1
599	3.4	2.2	2.2	1.0	1.2	1.9	599	606586.9	4493872.0	606587.2	4493690.1	606587.3	4493642.3	606587.3	4493621.1
600	3.7	2.3	2.2	0.6	0.9	1.9	600	606616.9	4493871.1	606617.3	4493670.5	606617.3	4493639.8	606617.4	4493618.5
601	4.3	2.3	2.2	0.0	0.4	1.8	601	606646.9	4493871.0	606647.3	4493637.0	606647.3	4493635.4	606647.4	4493615.9
602	4.4	2.3	2.3	0.1	0.4	1.7	602	606676.9	4493871.5	606677.3	4493636.1	606677.3	4493630.2	606677.4	4493611.3
603	4.4	2.4	2.4	0.2	0.5	1.5	603	606706.9	4493873.7	606707.3	4493633.9	606707.3	4493622.3	606707.4	4493606.3
604	4.6	2.6	2.4	0.3	0.5	1.3	604	606736.9	4493874.1	606737.3	4493627.5	606737.4	4493610.8	606737.4	4493596.3
605	4.6	2.6	2.6	0.4	0.9	3.1	605	606766.9	4493874.0	606767.3	4493624.4	606767.4	4493607.3	606767.4	4493573.4
606	4.6	2.6	2.6	0.5	0.9	2.7	606	606796.9	4493873.3	606797.3	4493625.3	606797.4	4493602.8	606797.4	4493572.8
607	4.6	2.6	2.6	0.5	0.9	2.6	607	606826.9	4493872.4	606827.3	4493624.0	606827.4	4493601.1	606827.4	4493572.1
608	4.7	2.6	2.6	0.4	0.8	2.7	608	606856.9	4493872.1	606857.4	4493618.2	606857.4	4493600.7	606857.4	4493571.5
609	4.8	2.6	2.6	0.3	0.7	2.6	609	606886.9	4493871.1	606887.4	4493613.3	606887.4	4493599.6	606887.4	4493570.8
610	4.8	2.7	2.6	0.3	0.7	2.3	610	606916.9	4493868.3	606917.4	4493609.0	606917.4	4493594.8	606917.4	4493569.4
611	4.7	2.6	2.8	0.3	1.1	4.5	611	606946.9	4493862.6	606947.4	4493606.8	606947.4	4493590.6	606947.5	4493541.2
612	4.7	2.7	2.8	0.5	1.0	3.2	612	606976.9	4493858.2	606977.4	4493605.4	606977.4	4493579.0	606977.5	4493543.9
613	4.7	2.7	2.7	0.5	1.0	3.0	613	607006.9	4493858.5	607007.4	4493603.8	607007.4	4493579.9	607007.5	4493546.6
614	4.8	2.7	2.7	0.5	0.9	2.8	614	607036.9	4493861.9	607037.4	4493602.4	607037.4	4493580.1	607037.5	4493549.3
615	4.9	2.8	2.7	0.5	0.8	2.5	615	607066.9	4493863.4	607067.4	4493601.2	607067.4	4493579.0	607067.5	4493551.9
616	4.9	2.7	2.7	0.3	0.8	2.9	616	607096.9	4493862.1	607097.4	4493598.8	607097.4	4493586.2	607097.5	4493553.9
617	4.9	2.7	2.7	0.3	0.8	2.7	617	607126.9	4493860.4	607127.4	4493597.8	607127.4	4493581.6	607127.5	4493552.0
618	4.9	2.8	2.7	0.4	0.8	2.5	618	607156.9	4493862.3	607157.4	4493597.4	607157.4	4493577.7	607157.5	4493550.1
619	4.9	2.9	2.9	0.7	1.1	2.8	619	607186.9	4493864.8	607187.4	4493597.8	607187.4	4493564.7	607187.5	4493533.5
620	5.0	3.0	2.9	0.8	1.1	2.2	620	607216.9	4493867.6	607217.4	4493598.8	607217.5	4493559.4	607217.5	4493535.8
621	5.1	3.0	2.9	0.8	0.9	1.7	621	607246.9	4493870.5	607247.4	4493594.6	607247.5	4493557.1	607247.5	4493538.0
622	5.3	3.1	3.0	0.7	0.9	2.1	622	607276.9	4493873.4	607277.4	4493589.8	607277.5	4493558.0	607277.5	4493534.5
623	5.3	3.1	3.0	0.7	1.0	2.3	623	607306.9	4493875.1	607307.4	4493580.0	607307.5	4493555.9	607307.5	4493530.3
624	5.3	3.1	3.1	0.8	1.1	2.5	624	607336.9	4493876.0	607337.4	4493590.7	607337.5	4493554.0	607337.5	4493526.2
625	5.3	3.2	3.1	0.9	1.1	1.9	625	607366.9	4493876.4	607367.4	4493590.4	607367.5	4493546.6	607367.5	4493525.4
626	5.3	3.2	3.1	0.8	1.1	2.1	626	607396.9	4493876.7	607397.4	4493588.8	607397.5	4493548.8	607397.5	4493525.9
627	5.4	3.2	3.1	0.7	1.0	2.2	627	607426.9	4493876.8	607427.4	4493585.9	607427.5	4493550.4	607427.5	4493526.4
628	5.4	3.2	3.1	0.6	0.9	2.3	628	607456.9	4493876.4	607457.4	4493583.1	607457.5	4493551.8	607457.5	4493526.9
629	5.5	3.2	3.1	0.7	0.9	1.9	629	607486.9	4493877.5	607487.4	4493582.9	607487.5	4493547.5	607487.5	4493526.4
630	5.5		3.1		1.0		630	607516.9	4493879.3	607517.4	4493581.1			607517.5	4493521.4
631	5.5	3.4	3.2	1.1	1.1	1.1	631	607546.9	4493878.1	607547.4	4493582.7	607547.5	4493528.6	607547.5	4493516.4
632	5.5	3.4	3.2	1.1	1.2	1.4	632	607576.9	4493877.1	607577.4	4493580.4	607577.5	4493526.5	607577.5	4493511.5
633	5.6	3.4	3.2	0.9	1.0	1.6	633	607606.9	4493876.2	607607.4	4493573.4	607607.5	4493529.1	607607.5	4493511.6
634	5.6	3.4	3.2	0.9	1.0	1.7	634	607636.9	4493875.5	607637.4	4493572.2	607637.5	4493530.1	607637.5	4493511.9
635	5.6	3.3	3.2	0.8	1.0	1.9	635	607666.9	4493874.9	607667.4	4493571.2	607667.5	4493533.2	607667.5	4493512.3
636	5.6		3.2		1.0		636	607696.9	4493873.2	607697.4	4493570.8			607697.5	4493510.9

Table A-1. High-Water Shoreline Position Change – Rockaway Inlet to Moriches Inlet, New York

High-Water Shoreline Position Change Rate (m/yr)						High-Water Shoreline Position (UTM Zone 18, NAD 1983)								
1873/88 to			1933/34 to		1983 to	1873/88		1933/34		1983		1991/97		
Transect #	1933/34	1983	1991/97	1983	1991/97	Transect #	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)
637	5.6	3.4	3.2	0.9	1.1	1.8	637	607726.9	4493871.2	607727.4	4493568.6	607727.5	4493525.6	607727.5	4493505.7
638	5.6		3.2		1.1		638	607756.9	4493870.5	607757.4	4493565.8			607757.6	4493500.8
639	5.6	3.4	3.2	1.0	1.1	1.5	639	607786.9	4493870.6	607787.4	4493566.2	607787.5	4493517.1	607787.6	4493501.1
640	5.7	3.4	3.2	0.9	1.0	1.7	640	607816.9	4493870.9	607817.4	4493564.0	607817.5	4493520.3	607817.6	4493501.5
641	5.7	3.4	3.2	0.8	1.0	1.9	641	607846.9	4493871.3	607847.5	4493562.3	607847.5	4493522.5	607847.6	4493501.8
642	5.7	3.4	3.3	0.8	1.0	1.9	642	607876.9	4493872.4	607877.4	4493563.7	607877.5	4493523.3	607877.6	4493502.2
643	5.8	3.4	3.3	0.8	1.0	1.8	643	607906.9	4493873.8	607907.5	4493561.7	607907.5	4493522.0	607907.6	4493502.6
644	5.9	3.5	3.3	0.9	1.0	1.2	644	607936.9	4493875.3	607937.5	4493558.8	607937.5	4493513.3	607937.6	4493500.2
645	6.0	3.6		0.9			645	607966.9	4493876.7	607967.5	4493552.0	607967.5	4493509.3		
646	6.1	3.8	3.5	1.3	1.2	1.1	646	607996.9	4493878.2	607997.5	4493550.1	607997.6	4493488.9	607997.6	4493476.6
647	6.2	3.8	3.5	1.1	1.1	1.1	647	608026.9	4493879.7	608027.5	4493545.8	608027.6	4493491.2	608027.6	4493479.6
648	6.3	3.8	3.5	1.0	1.0	0.9	648	608056.9	4493881.1	608057.5	4493543.0	608057.6	4493492.6	608057.6	4493482.6
649	6.3	3.8	3.5	0.9	1.0	1.2	649	608086.9	4493882.5	608087.5	4493540.5	608087.6	4493496.6	608087.6	4493483.7
650	6.4	3.8	3.5	1.0	1.0	0.9	650	608116.9	4493883.9	608117.5	4493539.9	608117.6	4493492.3	608117.6	4493482.1
651	6.4	3.9	3.6	1.1	1.1	0.9	651	608146.9	4493886.0	608147.5	4493538.3	608147.6	4493483.5	608147.6	4493474.1
652	6.5	4.0	3.8	1.3	1.4	1.8	652	608176.9	4493887.3	608177.5	4493536.2	608177.6	4493472.4	608177.6	4493453.0
653	6.6	4.1	3.8	1.3	1.3	1.2	653	608206.9	4493887.8	608207.5	4493533.7	608207.6	4493470.0	608207.6	4493457.0
654	6.7	4.1	3.8	1.3	1.2	0.8	654	608236.9	4493895.0	608237.5	4493533.7	608237.6	4493470.1	608237.6	4493460.9
655	6.9	4.1	3.8	1.1	1.1	1.2	655	608266.9	4493902.2	608267.5	4493529.5	608267.6	4493477.5	608267.6	4493464.4
656	7.2	4.2	4.0	1.0	1.0	1.2	656	608296.8	4493913.9	608297.5	4493523.9	608297.6	4493477.2	608297.6	4493464.1
657	7.5	4.4	4.1	1.0	1.0	1.2	657	608326.8	4493926.4	608327.5	4493520.9	608327.6	4493474.4	608327.6	4493461.2
658	7.8	4.7	4.3	1.2	1.1	0.7	658	608356.8	4493942.1	608357.5	4493519.7	608357.6	4493463.1	608357.6	4493456.0
659	8.2	5.0	4.7	1.6	1.5	1.3	659	608386.8	4493963.8	608387.5	4493520.5	608387.7	4493444.4	608387.7	4493429.7
660	9.0	5.5	5.0	1.5	1.4	1.0	660	608416.7	4494005.2	608417.5	4493518.0	608417.7	4493443.4	608417.7	4493432.9
661				1.4	1.3	0.9	661			608447.5	4493512.0	608447.7	4493445.5	608447.7	4493435.7
662				1.4	1.3	0.9	662			608477.5	4493514.2	608477.7	4493446.7	608477.7	4493436.3
663				1.4	1.3	1.0	663			608507.5	4493514.9	608507.7	4493448.2	608507.7	4493436.8
664				1.4	1.3	1.1	664			608537.5	4493512.5	608537.7	4493444.2	608537.7	4493432.2
665				1.5	1.4	1.3	665			608567.5	4493514.2	608567.7	4493442.5	608567.7	4493427.7
666				1.7	1.7	1.8	666			608597.5	4493512.1	608597.7	4493430.0	608597.7	4493410.7
667				1.7	1.6	1.3	667			608627.5	4493508.9	608627.7	4493427.8	608627.7	4493413.6
668				1.4	1.4	1.2	668			608657.6	4493498.8	608657.7	4493429.4	608657.7	4493416.6
669	10.0	5.9	5.4	1.3	1.3	1.3	669	608686.6	4494035.4	608687.6	4493497.7	608687.7	4493433.3	608687.7	4493419.5
670	9.3	5.5	5.1	1.3	1.2	1.0	670	608716.7	4493999.3	608717.6	4493496.9	608717.7	4493433.0	608717.7	4493422.5
671	8.8	5.2	4.8	1.2	1.2	0.8	671	608746.7	4493965.4	608747.6	4493491.9	608747.7	4493431.1	608747.7	4493422.8
672	8.3	4.9	4.5	1.2	1.1	0.8	672	608776.8	4493936.3	608777.6	4493486.6	608777.7	4493428.2	608777.7	4493419.1
673	8.2		4.5		1.3		673	608806.8	4493923.7	608807.6	4493482.7			608807.7	4493407.9
674	8.0	5.0	4.7	1.7	1.7	1.8	674	608836.8	4493914.6	608837.6	4493480.4	608837.7	4493399.6	608837.8	4493380.1
675	8.0	5.0	4.6	1.6	1.6	1.4	675	608866.9	4493907.4	608867.6	4493477.4	608867.7	4493397.6	608867.8	4493382.1
676	7.9	4.9	4.6	1.5	1.5	1.7	676	608896.9	4493902.5	608897.6	4493475.3	608897.7	4493402.7	608897.8	4493384.1
677	7.8	4.8	4.5	1.4	1.4	1.5	677	608926.9	4493894.3	608927.6	4493471.3	608927.7	4493402.2	608927.8	4493386.1
678	7.6	4.6	4.3	1.3	1.3	1.3	678	608956.9	4493879.6	608957.6	4493467.1	608957.7	4493402.7	608957.8	4493388.1
679	7.4	4.5	4.2	1.3	1.3	1.2	679	608986.9	4493867.8	608987.6	4493465.9	608987.7	4493401.8	608987.8	4493388.5
680	7.4	4.5	4.2	1.3	1.3	1.6	680	609016.9	4493860.9	609017.6	4493463.9	609017.7	4493402.0	609017.8	4493384.2
681	7.2	4.4	4.1	1.3	1.4	1.7	681	609047.0	4493846.8	609047.6	4493460.1	609047.7	4493395.1	609047.8	4493376.4
682	7.2	4.4	4.1	1.4	1.4	1.7	682	609077.0	4493830.0	609077.7	4493443.4	609077.8	4493377.2	609077.8	4493358.7
683	7.1	4.3	4.0	1.3	1.3	1.4	683	609107.0	4493822.5	609107.7	4493441.7	609107.8	4493377.5	609107.8	4493361.7
684	7.0	4.3	4.0	1.2	1.3	1.6	684	609137.0	4493817.8	609137.7	4493439.3	609137.8	4493380.5	609137.8	4493363.0
685	7.0	4.2	4.0	1.2	1.3	1.6	685	609167.0	4493812.7	609167.7	4493437.3	609167.8	4493377.8	609167.8	4493360.1
686	7.0	4.2	4.0	1.2	1.3	1.5	686	609197.0	4493808.2	609197.7	4493432.2	609197.8	4493373.0	609197.8	4493357.1
687	7.1	4.2	4.1	1.1	1.3	2.6	687	609227.0	4493803.7	609227.7	4493421.1	609227.8	4493368.7	609227.8	4493340.6
688	7.1	4.2	4.0	1.1	1.3	2.2	688	609257.0	4493801.1	609257.7	4493419.9	609257.8	4493367.3	609257.8	4493343.3
689	7.0	4.2	4.0	1.1	1.3	2.0	689	609287.0	4493799.8	609287.7	4493422.9	609287.8	4493367.9	609287.8	4493345.9

Table A-1. High-Water Shoreline Position Change – Rockaway Inlet to Moriches Inlet, New York

High-Water Shoreline Position Change Rate (m/yr)						High-Water Shoreline Position (UTM Zone 18, NAD 1983)								
1873/88 to			1933/34 to		1983 to	1873/88		1933/34		1983		1991/97		
Transect #	1933/34	1983	1991/97	1983	1991/97	Transect #	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)
690	7.0	4.2	4.0	1.2	1.3	1.4	690	609317.0	4493799.1	609317.7	4493423.8	609317.8	4493364.0	609317.8	4493348.6
691	7.0	4.3	4.0	1.3	1.3	1.2	691	609347.0	4493798.9	609347.7	4493421.7	609347.8	4493359.4	609347.8	4493346.0
692	7.1		4.1		1.3		692	609377.0	4493798.5	609377.7	4493414.0			609377.8	4493337.3
693	7.1	4.3	4.0	1.3	1.3	1.2	693	609407.0	4493798.8	609407.7	4493416.9	609407.8	4493353.4	609407.8	4493340.4
694	7.0	4.2	4.0	1.1	1.3	2.0	694	609437.0	4493799.5	609437.7	4493419.2	609437.8	4493364.3	609437.8	4493342.3
695	7.2	4.3	4.1	1.2	1.2	1.6	695	609467.0	4493801.6	609467.7	4493414.9	609467.8	4493357.5	609467.8	4493340.5
696	7.3	4.4	4.1	1.2	1.2	1.4	696	609497.0	4493802.0	609497.7	4493407.3	609497.8	4493350.2	609497.9	4493335.0
697	7.5	4.4	4.1	0.9	1.1	2.0	697	609527.0	4493802.1	609527.7	4493395.9	609527.8	4493352.1	609527.9	4493330.6
698	7.5	4.4	4.2	1.0	1.2	2.0	698	609557.0	4493802.3	609557.7	4493399.0	609557.8	4493351.5	609557.9	4493329.3
699	7.4	4.4	4.1	1.0	1.2	1.9	699	609587.0	4493801.7	609587.7	4493400.8	609587.8	4493350.7	608587.9	4493329.7
700	7.4		4.1		1.1		700	609617.0	4493801.3	609617.7	4493399.8			609617.9	4493332.4
701	7.5	4.5	4.1	1.2	1.1	0.9	701	609647.0	4493801.2	609647.7	4493398.9	609647.8	4493341.7	609647.9	4493331.8
702	7.5	4.5	4.2	1.1	1.1	1.1	702	609677.0	4493800.9	609677.7	4493394.6	609677.8	4493340.1	609677.9	4493328.2
703	7.8	4.5	4.2	0.8	1.0	1.8	703	609707.0	4493799.8	609707.8	4493381.2	609707.8	4493340.9	609707.9	4493321.3
704	7.8	4.5	4.2	0.8	1.0	1.8	704	609737.0	4493798.2	609737.8	4493376.8	609737.8	4493336.0	609737.9	4493316.5
705	7.8	4.5	4.2	0.8	1.0	1.9	705	609767.0	4493797.3	609767.8	4493377.2	609767.8	4493336.2	609767.9	4493315.7
706	7.8	4.4	4.2	0.8	1.0	1.7	706	609797.0	4493794.1	609797.8	4493375.3	609797.8	4493337.5	609797.9	4493318.4
707	7.7	4.5	4.1	0.9	0.9	0.9	707	609827.1	4493791.8	609827.8	4493376.9	609827.9	4493332.0	609827.9	4493321.6
708	7.6	4.5	4.1	1.0	0.9	0.8	708	609857.1	4493789.2	609857.8	4493377.0	609857.9	4493329.5	609857.9	4493320.7
709	7.6	4.5	4.1	1.0	1.0	0.7	709	609887.1	4493785.4	609887.8	4493376.1	609887.9	4493326.8	609887.9	4493319.1
710	7.6	4.5	4.1	1.1	1.0	0.5	710	609917.1	4493781.6	609917.8	4493373.5	609917.9	4493321.8	609917.9	4493315.8
711	7.8	4.5	4.1	0.9	0.8	0.5	711	609947.1	4493776.9	609947.8	4493358.5	609947.9	4493315.1	609947.9	4493309.4
712	7.7	4.4	4.1	0.9	0.8	0.7	712	609977.1	4493772.0	609977.8	4493358.3	609977.9	4493316.4	609977.9	4493308.3
713	7.5	4.3	4.0	0.8	0.8	0.7	713	610007.1	4493766.1	610007.8	4493358.9	610007.9	4493318.8	610007.9	4493311.6
714	7.4	4.3	3.9	0.8	0.7	0.5	714	610037.1	4493760.2	610037.8	4493359.1	610037.9	4493321.8	610037.9	4493316.6
715	7.4	4.2	3.8	0.7	0.6	0.3	715	610067.1	4493753.8	610067.8	4493357.1	610067.9	4493322.4	610067.9	4493319.7
716	7.2	4.1	3.8	0.7	0.7	0.5	716	610097.1	4493748.3	610097.8	4493360.0	610097.9	4493324.7	610097.9	4493319.4
717	7.1	4.1	3.7	0.8	0.7	0.5	717	610127.1	4493743.0	610127.8	4493360.1	610127.9	4493323.1	610127.9	4493318.1
718	7.1		3.8		0.8		718	610157.1	4493738.1	610157.8	4493353.3			610157.9	4493307.8
719	7.1	4.0	3.8	0.6	0.8	1.8	719	610187.2	4493731.8	610187.8	4493348.3	610187.9	4493317.9	610187.9	4493298.5
720	7.0	4.0	3.7	0.7	0.8	1.3	720	610217.2	4493726.0	610217.8	4493350.5	610217.9	4493318.1	610217.9	4493304.4
721	6.7	3.9	3.6	0.7	0.8	1.2	721	610247.2	4493717.3	610247.8	4493353.6	610247.9	4493320.1	610247.9	4493307.4
722	6.5	3.7	3.5	0.6	0.7	1.3	722	610277.2	4493704.1	610277.8	4493354.6	610277.9	4493324.4	610277.9	4493310.4
723	6.2	3.5	3.3	0.6	0.7	1.1	723	610307.2	4493689.4	610307.8	4493354.0	610307.9	4493324.5	610307.9	4493312.4
724	6.0	3.4	3.2	0.6	0.8	1.3	724	610337.3	4493673.8	610337.8	4493352.7	610337.9	4493321.6	610337.9	4493307.1
725	5.7	3.3	3.1	0.6	0.8	1.9	725	610367.3	4493658.4	610367.8	4493353.6	610367.9	4493324.2	610367.9	4493303.7
726	5.4	3.2	3.0	0.7	0.8	1.2	726	610397.3	4493645.2	610397.8	4493355.4	610397.9	4493320.4	610397.9	4493306.8
727	5.1	3.1	2.9	0.8	0.8	0.8	727	610427.3	4493637.9	610427.8	4493361.3	610427.9	4493322.2	610427.9	4493313.5
728	5.0	3.0	2.8	0.8	0.8	0.6	728	610457.3	4493632.2	610457.8	4493364.6	610457.9	4493324.4	610457.9	4493318.3
729	4.9	3.0	2.8	0.9	0.9	0.9	729	610487.3	4493628.9	610487.8	4493367.0	610487.9	4493325.2	610487.9	4493315.2
730	4.8	2.9	2.7	0.9	0.9	1.1	730	610517.3	4493624.4	610517.8	4493367.6	610517.9	4493325.6	610517.9	4493313.7
731	4.7	2.9	2.7	0.9	0.9	1.1	731	610547.4	4493622.5	610547.8	4493367.7	610547.9	4493324.9	610547.9	4493312.7
732	4.6	2.8	2.7	0.8	0.9	1.3	732	610577.4	4493615.8	610577.8	4493367.8	610577.9	4493327.8	610577.9	4493313.7
733	4.4	2.7	2.5	0.8	0.9	1.3	733	610607.4	4493608.1	610607.8	4493370.3	610607.9	4493332.9	610607.9	4493318.2
734	4.2	2.6	2.5	0.8	0.9	1.5	734	610637.4	4493600.6	610637.8	4493373.7	610637.8	4493337.1	610637.9	4493320.5
735	4.2	2.5	2.4	0.7	0.9	1.6	735	610667.4	4493599.0	610667.8	4493374.3	610667.8	4493339.7	610667.9	4493322.0
736	4.5	2.7	2.6	0.7	0.9	2.0	736	610697.4	4493617.8	610697.8	4493373.8	610697.8	4493341.7	610697.9	4493319.5
737				0.8	1.0	1.7	737			610727.8	4493375.6	610727.9	4493335.9	610727.9	4493316.8
738				0.9	1.0	1.8	738			610757.8	4493375.1	610757.9	4493333.7	610757.9	4493314.0
739				0.8	1.0	1.8	739			610787.8	4493373.8	610787.9	4493332.8	610787.9	4493313.5
740				0.8	1.0	1.5	740			610817.8	4493374.6	610817.9	4493333.5	610817.9	4493316.6
741				0.8	0.9	1.5	741			610847.8	4493376.1	610847.9	4493336.2	610847.9	4493319.8
742				0.9	1.0	1.7	742			610877.8	4493380.3	610877.8	4493338.6	610877.9	4493320.3

Table A-1. High-Water Shoreline Position Change – Rockaway Inlet to Moriches Inlet, New York

High-Water Shoreline Position Change Rate (m/yr)							High-Water Shoreline Position (UTM Zone 18, NAD 1983)									
1873/88 to			1933/34 to			1983 to	1873/88		1933/34		1983		1991/97			
Transect #	1933/34	1983	1991/97	1983	1991/97	1991/97	Transect #	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)
743				1.0	1.1	2.0	743			610907.8	4493385.2	610907.8	4493338.8	610907.9	4493317.0
744				1.1	1.1	1.5	744			610937.8	4493385.9	610937.9	4493333.8	610937.9	4493317.8
745				1.0	1.1	1.4	745			610967.8	4493385.8	610967.9	4493335.1	610967.9	4493319.7
746				1.1	1.1	0.9	746			610997.8	4493386.9	610997.9	4493333.7	610997.9	4493323.6
747				1.1	1.0	0.8	747			611027.8	4493387.3	611027.9	4493334.6	611027.9	4493325.8
748				1.1	1.1	0.9	748			611057.8	4493388.7	611057.9	4493334.8	611057.9	4493325.4
749				1.0	1.0	1.1	749			611087.8	4493387.3	611087.8	4493337.1	611087.9	4493324.9
750				1.0	1.0	1.1	750			611117.8	4493384.1	611117.8	4493336.9	611117.9	4493324.5
751				0.9	1.0	1.5	751			611147.8	4493384.2	611147.8	4493340.1	611147.9	4493324.0
752				0.8	0.9	1.0	752			611177.8	4493382.1	611177.8	4493340.7	611177.9	4493329.5
753				0.8	0.8	0.8	753			611207.8	4493382.9	611207.8	4493342.8	611207.9	4493334.1
754				0.9	0.8	0.5	754			611237.8	4493384.4	611237.8	4493342.8	611237.8	4493337.4
755	7.1	4.1	3.8	0.8	0.8	0.8	755	611267.1	4493769.3	611267.8	4493385.1	611267.8	4493348.0	611267.8	4493338.9
756	6.5	3.7	3.4	0.7	0.7	1.0	756	611297.2	4493732.7	611297.8	4493384.4	611297.8	4493351.6	611297.8	4493340.3
757	6.0	3.4	3.2	0.6	0.7	1.2	757	611327.2	4493706.3	611327.8	4493383.8	611327.8	4493355.1	611327.8	4493341.8
758	5.5	3.3	3.0	0.8	0.8	0.6	758	611357.2	4493685.4	611357.8	4493388.4	611357.8	4493359.1	611357.8	4493342.4
759	5.1	3.0	2.9	0.6	0.8	1.9	759	611387.3	4493668.2	611387.8	4493390.8	611387.8	4493363.3	611387.8	4493342.7
760	4.8	2.8	2.7	0.6	0.8	1.7	760	611417.3	4493651.3	611417.8	4493390.7	611417.8	4493361.9	611417.8	4493343.1
761	4.5	2.7	2.5	0.7	0.8	1.5	761	611447.3	4493633.1	611447.8	4493393.1	611447.8	4493360.5	611447.8	4493343.6
762	4.1	2.5	2.4	0.7	0.8	1.3	762	611477.4	4493615.1	611477.8	4493393.0	611477.8	4493359.3	611477.8	4493345.0
763	3.7	2.3	2.2	0.8	0.8	0.9	763	611507.4	4493594.1	611507.7	4493394.5	611507.8	4493357.2	611507.8	4493347.6
764	3.3	2.1	2.0	0.7	0.8	1.3	764	611537.4	4493572.3	611537.7	4493394.8	611537.8	4493359.4	611537.8	4493345.2
765	2.9	1.9	1.8	0.8	0.9	1.4	765	611567.5	4493551.7	611567.7	4493395.1	611567.8	4493358.2	611567.8	4493342.8
766	2.6	1.7	1.7	0.8	0.9	1.6	766	611597.5	4493533.8	611597.8	4493394.3	611597.8	4493357.7	611597.8	4493340.4
767	2.0	1.4	1.4	0.6	0.9	2.2	767	611627.6	4493505.8	611627.7	4493396.4	611627.8	4493365.7	611627.8	4493341.8
768	1.8	1.2	1.3	0.6	0.9	2.1	768	611657.6	4493494.5	611657.7	4493398.1	611657.8	4493366.8	611657.8	4493344.3
769	1.7	1.2	1.3	0.7	0.9	2.0	769	611687.6	4493490.5	611687.7	4493400.2	611687.8	4493368.2	611687.8	4493346.6
770	1.7	1.2	1.3	0.7	0.9	1.8	770	611717.6	4493491.7	611717.7	4493399.5	611717.8	4493365.8	611717.8	4493346.6
771	1.8	1.3	1.3	0.7	0.9	1.6	771	611747.6	4493494.1	611747.7	4493399.7	611747.8	4493363.7	611747.8	4493346.6
772	1.8	1.3	1.4	0.8	1.0	1.9	772	611777.6	4493498.4	611777.7	4493403.0	611777.8	4493365.6	611777.8	4493344.8
773	1.8	1.3	1.4	0.8	1.1	2.5	773	611807.6	4493503.8	611807.7	4493405.3	611807.8	4493368.6	611807.8	4493341.0
774	1.9	1.4	1.5	0.7	1.1	2.6	774	611837.6	4493509.0	611837.7	4493404.1	611837.8	4493368.3	611837.8	4493339.7
775	2.0	1.4	1.5	0.6	1.0	3.0	775	611867.5	4493513.0	611867.7	4493402.6	611867.8	4493374.1	611867.8	4493341.6
776	2.1	1.3	1.5	0.6	1.0	3.0	776	611897.5	4493514.9	611897.7	4493403.4	611897.8	4493376.4	611897.8	4493343.4
777	2.1	1.4	1.5	0.5	1.0	2.9	777	611927.5	4493516.0	611927.7	4493403.3	611927.8	4493377.0	611927.8	4493345.2
778	2.1	1.4	1.5	0.6	0.9	2.5	778	611957.5	4493516.2	611957.7	4493402.6	611957.8	4493374.9	611957.8	4493347.4
779	2.2	1.4	1.5	0.4	0.8	2.7	779	611987.5	4493517.0	611987.7	4493397.8	611987.8	4493376.3	611987.8	4493347.2
780	2.2	1.4	1.5	0.4	0.9	3.1	780	612017.5	4493519.9	612017.7	4493401.1	612017.8	4493380.2	612017.8	4493345.9
781	2.3		1.6		0.9		781	612047.5	4493522.2	612047.7	4493400.7			612047.8	4493346.0
782	2.3	1.3	1.6	0.3	0.9	4.0	782	612077.5	4493523.5	612077.7	4493402.2	612077.8	4493389.3	612077.8	4493345.7
783	2.3	1.3	1.6	0.3	1.0	4.0	783	612107.5	4493524.1	612107.7	4493402.6	612107.8	4493388.1	612107.8	4493343.6
784	2.2	1.3	1.5	0.3	0.9	3.6	784	612137.5	4493524.4	612137.7	4493405.2	612137.8	4493388.8	612137.8	4493348.9
785	2.2	1.3	1.5	0.3	0.9	3.6	785	612167.5	4493524.6	612167.7	4493406.5	612167.8	4493392.7	612167.8	4493353.5
786	2.2	1.3	1.5	0.3	0.8	3.2	786	612197.5	4493525.5	612197.7	4493407.1	612197.8	4493391.6	612197.8	4493356.8
787	2.3	1.3	1.5	0.2	0.7	3.1	787	612227.5	4493526.6	612227.7	4493404.2	612227.8	4493394.1	612227.8	4493359.9
788	2.4	1.3	1.5	0.1	0.7	2.9	788	612257.5	4493527.9	612257.7	4493400.0	612257.8	4493393.2	612257.8	4493360.9
789	2.3	1.3	1.5	0.2	0.7	3.1	789	612287.5	4493528.3	612287.7	4493402.4	612287.8	4493392.9	612287.8	4493358.8
790	2.3	1.3	1.6	0.3	0.9	3.6	790	612317.5	4493527.9	612317.7	4493404.9	612317.8	4493390.9	612317.8	4493351.4
791	2.3	1.4	1.6	0.3	0.9	3.6	791	612347.5	4493526.9	612347.8	4493401.8	612347.8	4493386.6	612347.8	4493347.3
792	2.3	1.3	1.6	0.3	0.9	3.8	792	612377.5	4493525.2	612377.7	4493402.8	612377.8	4493388.2	612377.8	4493346.2
793	2.3	1.3	1.5	0.2	0.9	3.7	793	612407.5	4493522.1	612407.7	4493400.2	612407.8	4493390.2	612407.8	4493349.4
794	2.2	1.2	1.5	0.1	0.8	4.0	794	612437.5	4493517.8	612437.7	4493399.1	612437.8	4493395.1	612437.8	4493351.3
795	2.0	1.2	1.4	0.3	0.9	3.5	795	612467.5	4493514.5	612467.7	4493405.0	612467.8	4493392.0	612467.8	4493353.3

Table A-1. High-Water Shoreline Position Change – Rockaway Inlet to Moriches Inlet, New York

High-Water Shoreline Position Change Rate (m/yr)						High-Water Shoreline Position (UTM Zone 18, NAD 1983)								
1873/88 to			1933/34 to		1983 to	1873/88		1933/34		1983		1991/97		
Transect #	1933/34	1983	1991/97	1983	1991/97	1991/97	Transect #	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)
796	2.0	1.2	1.4	0.3	0.8	3.3	796	612497.5	4493511.5	612497.7	4493404.6	612497.8	4493391.2	612497.8	4493354.6
797	1.9	1.2	1.4	0.3	0.9	3.2	797	612527.6	4493508.7	612527.7	4493405.2	612527.8	4493389.8	612527.8	4493354.4
798		1.2	1.4			3.3	798	612557.6	4493506.4			612557.8	4493387.3	612557.8	4493351.4
799	2.0	1.1	1.4	0.1	0.8	4.0	799	612587.6	4493504.1	612587.7	4493396.0	612587.8	4493389.3	612587.8	4493345.9
800	2.0	1.1	1.4	0.1	0.9	4.2	800	612617.6	4493502.3	612617.8	4493393.9	612617.8	4493388.4	612617.8	4493342.0
801	2.0	1.1	1.4	0.1	0.8	4.0	801	612647.6	4493501.0	612647.8	4493391.5	612647.8	4493388.3	612647.8	4493344.4
802	2.0	1.1	1.3	0.0	0.7	3.7	802	612677.6	4493499.6	612677.8	4493392.7	612677.8	4493391.2	612677.8	4493350.2
803	1.9	1.0	1.2	0.0	0.6	3.1	803	612707.6	4493498.3	612707.8	4493393.5	612707.8	4493391.4	612707.8	4493357.2
804	2.0	1.0	1.2	-0.0	0.6	3.2	804	612737.6	4493497.1	612737.8	4493391.7	612737.8	4493393.1	612737.8	4493358.4
805	1.9	1.0	1.2	0.0	0.6	3.1	805	612767.6	4493496.0	612767.8	4493391.3	612767.8	4493390.3	612767.8	4493356.5
806			1.2				806	612797.6	4493493.1					612797.8	4493352.4
807	1.9		1.3		0.7		807	612827.6	4493490.1	612827.8	4493387.1			612827.8	4493346.7
808	1.7	0.9	1.2	-0.0	0.7	3.9	808	612857.6	4493479.9	612857.8	4493386.2	612857.8	4493387.5	612857.8	4493345.2
809	1.5	0.8	1.1	0.1	0.7	3.7	809	612887.6	4493467.8	612887.8	4493389.6	612887.8	4493387.0	612887.8	4493346.0
810	1.2	0.7	1.0	0.1	0.7	3.6	810	612917.6	4493456.8	612917.8	4493391.4	612917.8	4493387.0	612917.8	4493347.9
811	1.1	0.6	0.9	0.1	0.7	3.4	811	612947.7	4493451.0	612947.8	4493389.3	612947.8	4493386.7	612947.8	4493349.8
812	1.2	0.6	0.8	-0.0	0.5	3.0	812	612977.7	4493446.2	612977.8	4493383.9	612977.8	4493384.3	612977.8	4493351.7
813	1.1	0.6	0.8	0.1	0.6	2.6	813	613007.7	4493441.6	613007.8	4493385.1	613007.8	4493378.6	613007.8	4493350.6
814	0.9	0.6	0.8	0.2	0.7	2.6	814	613037.7	4493433.9	613037.8	4493387.4	613037.8	4493376.3	613037.8	4493347.5
815	0.8	0.5	0.8	0.2	0.7	3.1	815	613067.7	4493428.4	613067.8	4493384.9	613067.8	4493375.4	613067.8	4493341.6
816	0.8	0.5	0.8	0.2	0.8	3.6	816	613097.7	4493425.0	613097.8	4493381.7	613097.8	4493373.1	613097.9	4493334.0
817	0.8	0.5	0.8	0.1	0.9	4.3	817	613127.7	4493421.6	613127.8	4493380.7	613127.8	4493375.0	613127.9	4493328.0
818	0.8	0.5	0.8	0.1	0.9	4.1	818	613157.7	4493418.3	613157.8	4493377.7	613157.8	4493370.8	613157.9	4493325.3
819	0.7	0.5	0.8	0.2	0.9	3.7	819	613187.7	4493414.9	613187.8	4493376.5	613187.8	4493365.5	613187.9	4493325.0
820	0.7	0.5	0.8	0.2	0.8	3.6	820	613217.7	4493413.1	613217.8	4493373.4	613217.8	4493363.6	613217.9	4493324.3
821	0.8	0.5	0.8	0.2	0.8	3.5	821	613247.7	4493411.0	613247.8	4493370.2	613247.8	4493361.4	613247.9	4493323.0
822	0.7	0.5	0.8	0.2	0.8	3.3	822	613277.7	4493406.9	613277.8	4493368.4	613277.8	4493358.4	613277.9	4493321.7
823	0.7	0.5	0.8	0.3	0.9	3.2	823	613307.7	4493401.8	613307.8	4493364.2	613307.8	4493347.3	613307.9	4493312.4
824	0.6	0.6	0.8	0.5	1.0	3.0	824	613337.7	4493396.1	613337.8	4493363.9	613337.8	4493339.6	613337.9	4493306.9
825	0.6	0.5	0.7	0.5	0.9	2.8	825	613367.8	4493389.9	613367.8	4493359.5	613367.9	4493336.7	613367.9	4493306.4
826	0.5	0.5	0.7	0.4	0.8	2.6	826	613397.8	4493382.8	613397.8	4493357.0	613397.9	4493335.9	613397.9	4493307.3
827	0.4	0.4	0.6	0.4	0.8	2.7	827	613427.8	4493375.4	613427.8	4493355.5	613427.9	4493338.1	613427.9	4493309.0
828	0.3	0.3	0.5	0.3	0.7	2.6	828	613457.8	4493368.1	613457.8	4493352.5	613457.8	4493339.3	613457.9	4493310.9
829	0.2	0.2	0.4	0.3	0.7	2.4	829	613487.8	4493362.6	613487.8	4493351.5	613487.8	4493338.9	613487.9	4493312.7
830	0.2	0.2	0.4	0.2	0.7	2.9	830	613517.8	4493358.4	613517.8	4493350.3	613517.8	4493342.9	613517.9	4493310.5
831	0.1	0.2	0.4	0.3	0.7	2.7	831	613547.8	4493352.5	613547.8	4493347.7	613547.9	4493333.8	613547.9	4493303.8
832	-0.1	0.1	0.4	0.4	0.8	2.8	832	613577.8	4493344.9	613577.8	4493348.5	613577.9	4493331.2	613577.9	4493300.1
833	-0.2	0.1	0.3	0.4	0.8	2.6	833	613607.9	4493336.4	613607.8	4493349.6	613607.9	4493331.1	613607.9	4493302.9
834	-0.4	-0.0	0.2	0.4	0.7	2.2	834	613637.9	4493328.1	613637.8	4493349.1	613637.9	4493331.5	613637.9	4493306.9
835	-0.5	-0.1	0.1	0.4	0.7	2.2	835	613667.9	4493319.8	613667.8	4493348.7	613667.9	4493331.3	613667.9	4493307.4
836	-0.7	-0.2	0.0	0.4	0.7	2.1	836	613697.9	4493311.5	613697.8	4493349.5	613697.9	4493331.0	613697.9	4493307.5
837	-0.9	-0.3	-0.0	0.4	0.7	2.1	837	613727.9	4493303.6	613727.8	4493350.2	613727.9	4493330.6	613727.9	4493307.7
838	-0.9	-0.3	-0.1	0.4	0.7	2.3	838	613757.9	4493297.0	613757.8	4493347.1	613757.9	4493330.0	613757.9	4493304.7
839	-1.0	-0.4	-0.1	0.3	0.8	3.0	839	613787.9	4493292.4	613787.8	4493347.0	613787.9	4493332.5	613787.9	4493299.7
840	-1.2	-0.4	-0.1	0.4	0.8	2.8	840	613817.9	4493287.1	613817.8	4493349.1	613817.9	4493330.7	613817.9	4493299.9
841	-1.2	-0.5	-0.2	0.3	0.8	2.7	841	613848.0	4493281.2	613847.8	4493345.9	613847.9	4493329.8	613847.9	4493300.5
842	-1.3	-0.5	-0.3	0.3	0.7	2.5	842	613878.0	4493273.8	613877.8	4493344.9	613877.9	4493329.2	613877.9	4493301.8
843	-1.5	-0.6	-0.3	0.4	0.7	2.1	843	613908.0	4493266.2	613907.8	4493346.8	613907.9	4493329.0	613907.9	4493305.5
844	-1.6	-0.7	-0.4	0.4	0.7	1.9	844	613938.0	4493261.7	613937.8	4493344.7	613937.9	4493328.6	613937.9	4493307.4
845	-1.6	-0.7	-0.4	0.3	0.6	1.9	845	613968.0	4493257.5	613967.8	4493344.7	613967.9	4493328.1	613967.9	4493307.3
846	-1.8	-0.7	-0.5	0.4	0.7	1.8	846	613998.0	4493251.0	613997.8	4493346.0	613997.9	4493326.5	613997.9	4493307.3
847	-1.9	-0.7	-0.5	0.5	0.8	2.0	847	614028.0	4493246.6	614027.8	4493346.6	614027.9	4493322.6	614027.9	4493300.5
848	-1.9	-0.7	-0.5	0.6	0.9	1.9	848	614058.0	4493245.0	614057.8	4493347.4	614057.9	4493316.9	614057.9	4493296.4

Table A-1. High-Water Shoreline Position Change – Rockaway Inlet to Moriches Inlet, New York

	High-Water Shoreline Position Change Rate (m/yr)						High-Water Shoreline Position (UTM Zone 18, NAD 1983)							
	1873/88 to			1933/34 to		1983 to	1873/88		1933/34		1983		1991/97	
Transect #	1933/34	1983	1991/97	1983	1991/97	1991/97	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)
849	-2.0	-0.8	-0.5	0.5	0.8	1.9	614088.0	4493240.0	614087.8	4493347.0	614087.9	4493320.6	614087.9	4493299.5
850	-2.1	-0.8	-0.6	0.5	0.8	1.8	614118.0	4493236.1	614117.8	4493349.0	614117.9	4493322.4	614117.9	4493302.5
851	-2.2	-0.9	-0.7	0.5	0.8	1.7	614148.0	4493230.3	614147.8	4493350.4	614147.9	4493324.3	614147.9	4493305.6
852	-2.3	-1.0	-0.7	0.5	0.7	1.5	614178.0	4493225.0	614177.8	4493348.3	614177.9	4493325.5	614177.9	4493308.7
853	-2.3	-1.0	-0.8	0.4	0.7	1.7	614208.1	4493222.5	614207.8	4493347.6	614207.9	4493327.2	614207.9	4493308.2
854	-2.3	-0.9	-0.7	0.6	0.7	1.5	614238.1	4493224.8	614237.8	4493348.9	614237.9	4493321.7	614237.9	4493305.0
855	-2.4	-1.0	-0.7	0.7	0.8	1.5	614268.1	4493217.3	614267.8	4493349.1	614267.9	4493317.2	614267.9	4493300.3
856	-2.6	-1.0	-0.8	0.7	0.9	1.6	614298.1	4493208.5	614297.8	4493350.4	614297.9	4493314.9	614297.9	4493297.8
857	-2.7	-1.1	-0.9	0.7	0.7	1.1	614328.1	4493200.1	614327.8	4493346.3	614327.9	4493313.9	614327.9	4493302.1
858	-2.8	-1.2	-1.0	0.6	0.7	1.0	614358.1	4493194.4	614357.8	4493346.5	614357.9	4493317.7	614357.9	4493306.3
859	-2.9	-1.3	-1.0	0.5	0.7	1.3	614388.1	4493189.1	614387.8	4493348.1	614387.9	4493322.0	614387.9	4493308.2
860	-3.1	-1.3	-1.1	0.6	0.7	1.2	614418.1	4493184.2	614417.8	4493352.2	614417.9	4493322.4	614417.9	4493309.1
861	-3.2	-1.4	-1.1	0.6	0.7	1.3	614448.1	4493180.2	614447.8	4493354.3	614447.9	4493324.0	614447.9	4493310.1
862	-3.4	-1.4	-1.2	0.7	0.8	1.2	614478.1	4493176.6	614477.8	4493357.4	614477.9	4493322.0	614477.9	4493309.3
863	-3.5	-1.4	-1.2	0.9	0.9	1.0	614508.1	4493172.0	614507.8	4493362.4	614507.9	4493317.4	614507.9	4493306.5
864	-3.7	-1.5	-1.2	0.9	1.0	1.5	614538.2	4493167.3	614537.8	4493364.1	614537.9	4493320.2	614537.9	4493304.2
865	-3.7	-1.6	-1.3	0.9	0.9	1.2	614568.2	4493162.6	614567.8	4493363.4	614567.9	4493321.9	614567.9	4493308.4
866	-3.8	-1.6	-1.3	0.9	0.9	1.3	614598.2	4493160.0	614597.8	4493366.5	614597.9	4493324.9	614597.9	4493310.9
867	-4.0	-1.7	-1.4	0.9	1.0	1.4	614628.2	4493158.8	614627.8	4493372.1	614627.9	4493328.5	614627.9	4493313.3
868	-4.0	-1.7	-1.4	0.9	1.0	1.6	614658.2	4493160.6	614657.8	4493374.4	614657.9	4493332.3	614657.9	4493314.9
869	-4.1	-1.6	-1.4	1.1	1.1	1.3	614688.2	4493163.3	614687.8	4493384.3	614687.9	4493330.8	614687.9	4493316.6
870	-4.2	-1.6	-1.3	1.3	1.3	1.0	614718.2	4493167.3	614717.8	4493393.1	614717.9	4493328.8	614717.9	4493318.1
871	-4.2	-1.5	-1.2	1.5	1.4	1.0	614748.1	4493171.3	614747.8	4493396.0	614747.9	4493323.6	614747.9	4493312.3
872	-4.1	-1.3	-1.1	1.7	1.6	1.1	614778.1	4493176.6	614777.7	4493397.7	614777.9	4493313.5	614777.9	4493301.6
873	-4.0	-1.3	-1.0	1.8	1.7	1.4	614808.1	4493182.3	614807.7	4493399.5	614807.9	4493313.4	614807.9	4493298.4
874	-4.0	-1.3	-1.0	1.7	1.6	1.3	614838.1	4493187.8	614837.7	4493401.2	614837.9	4493318.2	614837.9	4493303.9
875	-3.9	-1.3	-1.0	1.7	1.6	1.1	614868.1	4493192.1	614867.7	4493403.0	614867.9	4493321.7	614867.9	4493310.0
876	-3.9	-1.3	-1.1	1.6	1.4	0.8	614898.1	4493196.5	614897.7	4493404.7	614897.9	4493326.9	614897.9	4493318.1
877	-3.8	-1.3	-1.1	1.5	1.3	0.4	614928.1	4493200.8	614927.7	4493406.4	614927.9	4493330.9	614927.9	4493326.0
878	-3.8	-1.3	-1.1	1.5	1.3	0.3	614958.1	4493205.4	614957.7	4493408.2	614957.9	4493333.9	614957.9	4493331.1
879	-3.7	-1.2	-1.1	1.6	1.3	0.2	614988.1	4493210.0	614987.7	4493409.9	614987.9	4493334.0	614987.9	4493332.2
880	-3.6	-1.1	-1.0	1.7	1.3	-0.5	615018.1	4493216.2	615017.7	4493411.7	615017.9	4493326.9	615017.9	4493332.4
881	-3.5	-1.1	-1.0	1.6	1.2	-0.3	615048.1	4493223.2	615047.7	4493413.4	615047.9	4493337.4	615047.9	4493340.1
882	-3.4	-1.2	-1.0	1.3	1.1	0.2	615078.0	4493230.4	615077.7	4493415.2	615077.8	4493350.2	615077.8	4493347.8
883	-3.4	-1.2	-1.0	1.2	1.1	0.3	615108.0	4493237.1	615107.7	4493419.2	615107.8	4493359.3	615107.8	4493355.6
884	-3.6	-1.2	-1.1	1.4	1.2	0.4	615138.0	4493240.7	615137.7	4493435.7	615137.8	4493367.7	615137.8	4493363.3
885	-3.5	-1.3	-1.1	1.1	1.0	0.7	615168.0	4493244.1	615167.7	4493432.6	615167.8	4493379.1	615167.8	4493371.0
886	-3.7	-1.4	-1.2	1.1	1.1	1.0	615198.0	4493247.2	615197.7	4493444.9	615197.8	4493390.0	615197.8	4493378.7
887	-3.7	-1.4	-1.2	1.1	1.1	1.1	615228.0	4493249.9	615227.7	4493450.3	615227.7	4493398.3	615227.8	4493386.5
888		-1.5	-1.3			1.5	615258.0	4493252.2			615257.7	4493411.0	615257.8	4493394.2
889	-3.6	-1.6	-1.3	0.6	0.8	1.7	615288.0	4493254.6	615287.7	4493449.4	615287.7	4493420.3	615287.7	4493401.9
890		-1.6	-1.3			1.6	615318.0	4493258.0			615317.7	4493426.9	615317.7	4493409.6
891	-3.6	-1.7	-1.4	0.3	0.7	2.1	615348.0	4493261.5	615347.6	4493456.5	615347.7	4493440.7	615347.7	4493417.3
892	-3.7	-1.8	-1.4	0.3	0.7	2.6	615378.0	4493265.1	615377.6	4493467.1	615377.7	4493453.4	615377.7	4493425.1
893	-3.8	-1.8	-1.4	0.3	0.7	2.3	615408.0	4493268.7	615407.6	4493471.7	615407.6	4493467.8	615407.7	4493432.8
894	-3.9	-1.9	-1.5	0.3	0.7	2.4	615438.0	4493272.4	615437.6	4493480.8	615437.6	4493466.6	615437.7	4493440.5
895	-3.9	-1.9	-1.5	0.2	0.7	2.5	615468.0	4493277.3	615467.6	4493487.5	615467.6	4493476.1	615467.7	4493448.2
896	-3.8	-1.9	-1.5	0.1	0.6	2.6	615497.9	4493284.6	615497.6	4493490.4	615497.6	4493484.1	615497.6	4493455.9
897	-3.8		-1.5		0.6		615527.9	4493291.1	615527.6	4493498.0			615527.6	4493463.7
898	-4.0	-2.0	-1.5	0.1	0.7	3.0	615557.9	4493296.8	615557.6	4493511.1	615557.6	4493504.1	615557.6	4493471.4
899	-4.0	-2.1	-1.6	0.1	0.7	3.4	615587.9	4493301.0	615587.5	4493518.9	615587.5	4493516.1	615587.6	4493479.1
900	-4.1	-2.1	-1.6	0.0	0.7	3.5	615617.9	4493304.9	615617.5	4493526.8	615617.5	4493525.0	615617.6	4493486.8
901	-4.2	-2.1	-1.6	0.1	0.7	3.2	615647.9	4493309.1	615647.5	4493536.0	615647.5	4493529.2	615647.6	4493494.6

Table A-1. High-Water Shoreline Position Change – Rockaway Inlet to Moriches Inlet, New York

High-Water Shoreline Position Change Rate (m/yr)						High-Water Shoreline Position (UTM Zone 18, NAD 1983)									
1873/88 to			1933/34 to		1983 to	1873/88			1933/34			1983			1991/97
Transect #	1933/34	1983	1991/97	1983	1991/97	1991/97	Transect #	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)
902	-4.2	-2.2	-1.7	0.1	0.7	3.2	902	615677.9	4493313.6	615677.5	4493541.4	615677.5	4493537.3	615677.6	4493502.3
903	-4.3	-2.2	-1.7	0.2	0.7	2.9	903	615707.9	4493318.6	615707.5	4493551.5	615707.5	4493541.2	615707.6	4493509.9
904	-4.4	-2.2	-1.7	0.2	0.7	2.9	904	615737.9	4493323.7	615737.5	4493558.4	615737.5	4493546.8	615737.5	4493514.5
905	-4.4	-2.2	-1.7	0.2	0.8	3.3	905	615767.9	4493328.5	615767.5	4493566.2	615767.5	4493555.5	615767.5	4493519.1
906	-4.4	-2.2	-1.7	0.2	0.8	3.3	906	615797.9	4493333.1	615797.5	4493570.0	615797.5	4493560.3	615797.5	4493523.6
907	-4.1	-2.1	-1.7	0.0	0.6	2.9	907	615827.8	4493341.0	615827.5	4493562.5	615827.5	4493561.5	615827.5	4493529.2
908	-4.0	-2.1	-1.6	0.0	0.5	2.7	908	615857.8	4493349.6	615857.5	4493566.3	615857.5	4493566.1	615857.5	4493536.0
909	-4.0	-2.1	-1.6	0.1	0.5	2.6	909	615887.8	4493358.7	615887.4	4493573.6	615887.4	4493571.4	615887.5	4493542.9
910	-3.9	-2.1	-1.6	0.0	0.5	2.7	910	615917.8	4493366.1	615917.4	4493579.1	615917.4	4493579.3	615917.5	4493549.7
911	-4.1	-2.1	-1.6	0.2	0.6	2.6	911	615947.8	4493372.5	615947.4	4493593.9	615947.4	4493584.6	615947.5	4493556.6
912	-4.2	-2.1	-1.7	0.2	0.7	2.6	912	615977.8	4493375.7	615977.4	4493603.4	615977.4	4493591.6	615977.5	4493563.4
913	-4.3	-2.1	-1.7	0.2	0.7	2.5	913	616007.8	4493377.6	616007.4	4493609.5	616007.4	4493597.6	616007.4	4493570.3
914	-4.4	-2.2	-1.8	0.3	0.7	2.3	914	616037.8	4493377.9	616037.4	4493616.4	616037.4	4493602.3	616037.4	4493577.1
915	-4.5	-2.2	-1.8	0.3	0.6	2.2	915	616067.8	4493378.0	616067.4	4493622.5	616067.4	4493608.4	616067.4	4493584.0
916	-4.5	-2.3	-1.8	0.3	0.6	2.2	916	616097.8	4493380.5	616097.4	4493625.5	616097.4	4493613.2	616097.4	4493588.9
917	-4.6	-2.3	-1.8	0.3	0.7	2.5	917	616127.8	4493383.1	616127.3	4493630.3	616127.4	4493617.9	616127.4	4493590.8
918	-4.7	-2.4	-1.8	0.2	0.8	3.2	918	616157.8	4493385.1	616157.3	4493638.9	616157.4	4493627.4	616157.4	4493592.6
919	-4.8	-2.4	-1.9	0.3	0.8	3.4	919	616187.8	4493387.1	616187.3	4493648.3	616187.3	4493635.9	616187.4	4493598.3
920	-5.0	-2.4	-1.9	0.4	0.9	3.3	920	616217.8	4493390.5	616217.3	4493659.5	616217.3	4493641.4	616217.4	4493604.7
921	-5.1	-2.5	-1.9	0.4	0.9	3.4	921	616247.8	4493393.9	616247.3	4493666.7	616247.3	4493648.3	616247.4	4493611.0
922	-5.1	-2.5	-1.9	0.4	0.9	3.2	922	616277.7	4493399.2	616277.3	4493673.2	616277.3	4493653.0	616277.4	4493617.4
923	-5.0	-2.4	-1.9	0.4	0.9	3.2	923	616307.7	4493407.3	616307.3	4493679.1	616307.3	4493658.7	616307.4	4493623.8
924	-5.0	-2.4	-1.9	0.4	0.9	3.3	924	616337.7	4493414.6	616337.3	4493684.5	616337.3	4493665.9	616337.3	4493630.1
925	-5.0	-2.4	-1.9	0.4	0.9	3.0	925	616367.7	4493421.8	616367.2	4493690.9	616367.3	4493669.9	616367.3	4493636.5
926	-4.9	-2.4	-1.9	0.4	0.9	2.8	926	616397.7	4493427.1	616397.2	4493693.6	616397.3	4493673.6	616397.3	4493642.9
927	-4.9	-2.4	-1.9	0.3	0.8	2.8	927	616427.7	4493432.2	616427.2	4493695.2	616427.3	4493678.6	616427.3	4493647.6
928	-4.9	-2.4	-1.9	0.4	0.8	2.6	928	616457.7	4493436.8	616457.2	4493699.3	616457.3	4493680.4	616457.3	4493651.4
929	-4.9	-2.4	-1.9	0.4	0.8	2.5	929	616487.7	4493440.6	616487.2	4493704.6	616487.3	4493682.9	616487.3	4493655.1
930	-5.1	-2.4	-1.9	0.7	1.0	2.5	930	616517.7	4493444.7	616517.2	4493718.1	616517.2	4493686.3	616517.3	4493658.8
931	-5.1	-2.3	-1.9	0.8	1.1	2.4	931	616547.7	4493450.6	616547.2	4493728.2	616547.2	4493687.7	616547.3	4493661.6
932	-5.2	-2.3	-1.8	1.0	1.3	2.5	932	616577.6	4493456.5	616577.2	4493737.6	616577.2	4493687.9	616577.3	4493660.9
933	-5.3	-2.3	-1.8	1.1	1.4	2.8	933	616607.6	4493460.5	616607.1	4493745.3	616607.2	4493691.9	616607.3	4493660.9
934	-5.4	-2.3	-1.8	1.2	1.5	2.7	934	616637.6	4493463.5	616637.1	4493753.7	616637.2	4493694.9	616637.3	4493665.7
935	-5.5	-2.2	-1.8	1.4	1.4	1.8	935	616667.6	4493466.2	616667.1	4493760.6	616667.2	4493694.6	616667.3	4493674.7
936	-5.6	-2.2	-1.8	1.4	1.5	1.8	936	616697.6	4493467.6	616697.1	4493767.4	616697.2	4493697.1	616697.3	4493677.8
937	-5.5	-2.2	-1.8	1.4	1.5	1.8	937	616727.6	4493473.2	616727.1	4493768.0	616727.2	4493700.2	616727.3	4493680.7
938	-5.5	-2.2	-1.8	1.4	1.5	2.1	938	616757.6	4493477.2	616757.1	4493774.1	616757.2	4493706.2	616757.3	4493683.5
939	-5.8	-2.3	-1.9	1.6	1.7	1.9	939	616787.6	4493478.7	616787.1	4493789.1	616787.2	4493711.2	616787.2	4493690.2
940	-6.0	-2.4	-2.0	1.7	1.7	1.7	940	616817.6	4493478.4	616817.0	4493803.5	616817.2	4493722.5	616817.2	4493703.7
941	-6.2	-2.4	-2.1	1.9	1.7	0.9	941	616847.6	4493477.9	616847.0	4493813.6	616847.2	4493722.8	616847.2	4493712.6
942	-6.4	-2.4	-2.1	2.0	1.8	0.9	942	616877.6	4493478.9	616877.0	4493822.3	616877.2	4493725.9	616877.2	4493715.9
943	-6.5	-2.4	-2.1	2.0	1.9	1.5	943	616907.6	4493481.6	616907.0	4493829.9	616907.2	4493732.7	616907.2	4493715.9
944	-6.5	-2.4	-2.0	2.1	2.0	1.9	944	616937.6	4493486.3	616937.0	4493837.2	616937.2	4493736.6	616937.2	4493715.9
945	-6.6	-2.4	-1.9	2.2	2.3	2.8	945	616967.6	4493492.4	616967.0	4493848.4	616967.2	4493741.4	616967.2	4493711.1
946	-6.7	-2.4	-1.9	2.3	2.5	3.2	946	616997.6	4493495.8	616996.9	4493859.7	616997.1	4493746.4	616997.2	4493711.1
947	-6.9	-2.5	-1.9	2.4	2.6	3.3	947	617027.6	4493496.5	617026.9	4493867.9	617027.1	4493749.9	617027.2	4493713.3
948	-7.0	-2.5	-1.9	2.4	2.7	3.9	948	617057.6	4493498.7	617056.9	4493877.4	617057.1	4493758.2	617057.2	4493715.6
949	-7.1	-2.5	-1.9	2.5	2.8	3.8	949	617087.6	4493503.8	617086.9	4493884.3	617087.1	4493760.0	617087.2	4493717.9
950	-7.1	-2.5	-1.9	2.5	2.8	4.0	950	617117.6	4493502.7	617116.9	4493888.3	617117.1	4493764.2	617117.2	4493720.1
951	-7.3	-2.6	-1.9	2.5	2.8	4.4	951	617147.6	4493504.0	617146.9	4493895.4	617147.1	4493773.9	617147.2	4493725.6
952	-7.2	-2.5	-2.0	2.7	2.8	3.3	952	617177.6	4493511.9	617176.9	4493900.8	617177.1	4493770.9	617177.2	4493734.2
953		-2.5	-2.0			2.7	953	617207.5	4493517.0			617207.1	4493772.6	617207.2	4493742.7
954	-7.2	-2.5	-2.0	2.8	2.7	2.5	954	617237.5	4493521.8	617236.9	4493911.2	617237.1	4493776.0	617237.1	4493748.4

Table A-1. High-Water Shoreline Position Change – Rockaway Inlet to Moriches Inlet, New York

	High-Water Shoreline Position Change Rate (m/yr)						High-Water Shoreline Position (UTM Zone 18, NAD 1983)								
	1873/88 to			1933/34 to		1983 to		1873/88		1933/34		1983		1991/97	
Transect #	1933/34	1983	1991/97	1983	1991/97	1991/97	Transect #	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)
955	-7.3	-2.5	-2.0	2.9	2.8	2.5	955	617267.5	4493525.7	617266.8	4493920.9	617267.1	4493779.0	617267.1	4493752.0
956	-7.4	-2.4	-2.0	3.1	2.9	2.3	956	617297.5	4493527.9	617296.8	4493928.8	617297.1	4493779.1	617297.1	4493753.9
957	-7.4	-2.4	-1.9	3.2	3.1	2.4	957	617327.5	4493535.0	617326.8	4493936.7	617327.1	4493780.3	617327.1	4493754.0
958	-7.4	-2.4	-1.9	3.2	3.1	3.1	958	617357.5	4493541.2	617356.8	4493942.2	617357.1	4493787.6	617357.1	4493754.1
959	-7.4	-2.3	-1.8	3.3	3.2	2.9	959	617387.5	4493547.8	617386.8	4493948.6	617387.1	4493785.7	617387.1	4493754.2
960	-7.4	-2.2	-1.8	3.5	3.3	2.6	960	617417.5	4493554.0	617416.8	4493953.8	617417.1	4493783.3	617417.1	4493754.4
961	-7.5	-2.2	-1.7	3.7	3.5	2.6	961	617447.5	4493558.1	617446.8	4493961.8	617447.1	4493783.1	617447.1	4493754.4
962	-7.6	-2.1	-1.7	3.9	3.6	2.5	962	617477.5	4493562.5	617476.8	4493971.2	617477.1	4493782.4	617477.1	4493755.5
963	-7.7	-2.1	-1.7	4.0	3.7	2.2	963	617507.5	4493566.8	617506.7	4493980.2	617507.1	4493782.0	617507.1	4493758.1
964	-7.7	-2.0	-1.7	4.2	3.8	1.8	964	617537.4	4493571.9	617536.7	4493987.2	617537.1	4493780.6	617537.1	4493760.7
965	-7.6	-2.0	-1.6	4.2	3.8	1.8	965	617567.4	4493578.2	617566.7	4493989.6	617567.1	4493782.9	617567.1	4493763.3
966	-7.6	-2.0	-1.6	4.3	3.8	1.9	966	617597.4	4493583.0	617596.7	4493994.9	617597.1	4493786.4	617597.1	4493766.0
967	-7.7	-2.0	-1.6	4.2	3.9	2.6	967	617627.4	4493587.0	617626.7	4494001.4	617627.1	4493795.6	617627.1	4493767.3
968	-7.7	-1.9	-1.5	4.5	4.0	1.8	968	617657.4	4493591.0	617656.7	4494007.8	617657.1	4493786.7	617657.1	4493766.7
969	-7.7	-1.9	-1.5	4.6	4.1	1.9	969	617687.4	4493595.6	617686.7	4494011.9	617687.1	4493786.5	617687.1	4493765.9
970	-7.7	-1.8	-1.4	4.7	4.2	2.2	970	617717.4	4493599.5	617716.7	4494017.3	617717.1	4493787.1	617717.1	4493762.8
971	-7.7		-1.4		4.4		971	617747.4	4493604.0	617746.7	4494022.0			617747.1	4493759.6
972	-7.8	-1.8	-1.3	4.9	4.6	3.2	972	617777.4	4493607.6	617776.7	4494029.6	617777.1	4493791.1	617777.1	4493756.5
973	-7.9	-1.9	-1.3	4.7	4.7	4.5	973	617807.4	4493611.4	617806.6	4494035.4	617807.0	4493804.0	617807.1	4493754.7
974	-7.9	-1.7	-1.2	5.1	4.8	3.8	974	617837.4	4493615.8	617836.6	4494042.6	617837.1	4493794.3	617837.1	4493753.0
975	-8.0	-1.7	-1.1	5.3	5.0	3.8	975	617867.4	4493618.2	617866.6	4494048.9	617867.1	4493788.5	617867.1	4493746.7
976	-8.1	-1.6	-1.1	5.5	5.3	4.1	976	617897.4	4493620.4	617896.6	4494055.3	617897.1	4493785.5	617897.2	4493740.1
977	-8.2	-1.6	-1.0	5.7	5.5	4.8	977	617927.4	4493621.4	617926.6	4494063.5	617927.1	4493785.9	617927.2	4493733.5
978	-8.3	-1.6	-0.9	5.8	5.7	5.4	978	617957.4	4493622.7	617956.6	4494069.8	617957.1	4493787.3	617957.2	4493728.3
979	-8.3	-1.6	-0.9	5.9	5.8	5.6	979	617987.4	4493624.0	617986.6	4494074.0	617987.1	4493785.4	617987.2	4493724.0
980	-8.4	-1.6	-0.8	6.0	6.0	5.9	980	618017.4	4493624.8	618016.6	4494077.7	618017.1	4493784.7	618017.2	4493719.8
981	-8.5	-1.5	-0.8	6.1	6.1	6.3	981	618047.4	4493625.5	618046.6	4494082.7	618047.1	4493784.6	618047.2	4493715.5
982	-8.5	-1.6	-0.8	6.2	6.3	6.7	982	618077.4	4493625.8	618076.6	4494087.1	618077.1	4493785.2	618077.2	4493711.1
983	-8.7	-1.5	-0.7	6.3	6.4	6.9	983	618107.4	4493624.9	618106.5	4494093.3	618107.1	4493783.1	618107.2	4493706.9
984	-8.7	-1.5	-0.7	6.5	6.6	7.1	984	618137.4	4493625.6	618136.5	4494097.2	618137.1	4493781.1	618137.2	4493702.6
985	-8.8	-1.5	-0.6	6.5	6.7	7.6	985	618167.4	4493626.0	618166.5	4494099.5	618167.1	4493781.6	618167.2	4493698.4
986	-8.9	-1.5	-0.6	6.7	6.9	7.8	986	618197.4	4493624.7	618196.5	4494103.1	618197.1	4493775.2	618197.2	4493689.9
987	-9.0	-1.5	-0.5	6.8	7.1	8.5	987	618227.4	4493622.1	618226.5	4494106.1	618227.1	4493773.2	618227.3	4493680.1
988	-9.1	-1.5	-0.5	6.9	7.3	9.1	988	618257.4	4493618.7	618256.5	4494107.2	618257.1	4493770.4	618257.3	4493670.4
989	-9.2	-1.6	-0.4	6.9	7.5	10.2	989	618287.4	4493613.2	618286.5	4494109.1	618287.1	4493773.0	618287.3	4493660.6
990	-9.3	-1.6	-0.4	7.0	7.7	10.9	990	618317.4	4493610.3	618316.5	4494112.3	618317.1	4493771.1	618317.3	4493650.8
991	-9.4	-1.6	-0.3	7.0	7.9	11.9	991	618347.4	4493609.5	618346.5	4494114.7	618347.1	4493774.1	618347.3	4493643.2
992	-9.4	-1.6	-0.3	6.9	7.9	12.4	992	618377.4	4493606.9	618376.5	4494115.3	618377.1	4493776.1	618377.3	4493639.3
993	-9.5	-1.7	-0.3	6.9	8.0	12.5	993	618407.4	4493605.3	618406.5	4494117.3	618407.1	4493777.7	618407.3	4493639.9
994	-9.5	-1.7	-0.3	6.9	7.9	12.3	994	618437.4	4493604.3	618436.5	4494117.2	618437.1	4493777.8	618437.3	4493642.4
995	-9.5	-1.7	-0.4	6.9	7.8	12.1	995	618467.4	4493604.6	618466.5	4494117.7	618467.1	4493780.9	618467.3	4493648.1
996	-9.5	-1.7	-0.4	6.9	7.7	11.3	996	618497.4	4493607.4	618496.5	4494118.5	618497.1	4493780.2	618497.3	4493656.0
997	-9.4	-1.7	-0.5	6.8	7.5	10.7	997	618527.4	4493610.0	618526.5	4494115.7	618527.1	4493781.0	618527.3	4493663.8
998	-9.3	-1.6	-0.5	6.8	7.4	10.0	998	618557.4	4493614.0	618556.5	4494114.2	618557.1	4493781.0	618557.3	4493671.6
999	-9.2	-1.6	-0.6	6.8	7.2	8.9	999	618587.4	4493618.8	618586.5	4494113.3	618587.1	4493780.2	618587.3	4493682.1
1000	-9.1	-1.6	-0.7	6.7	6.9	7.9	1000	618617.4	4493622.8	618616.5	4494113.0	618617.1	4493783.1	618617.2	4493696.6
1001	-9.1	-1.5	-0.8	6.8	6.7	6.2	1001	618647.4	4493626.6	618646.5	4494116.0	618647.1	4493784.5	618647.2	4493716.1
1002	-8.9	-1.5	-0.9	6.7	6.3	4.5	1002	618677.4	4493629.6	618676.5	4494111.3	618677.1	4493783.4	618677.2	4493733.7
1003	-8.8	-1.5	-1.0	6.6	6.1	4.2	1003	618707.3	4493632.6	618706.5	4494109.6	618707.1	4493788.1	618707.2	4493742.5
1004	-8.7	-1.5	-1.0	6.5	6.0	3.4	1004	618737.3	4493636.1	618736.5	4494105.8	618737.1	4493786.7	618737.1	4493749.0
1005	-8.6		-1.0		5.8		1005	618767.3	4493637.7	618766.5	4494100.4			618767.1	4493753.1
1006	-8.4	-1.4	-1.0	6.4	5.7	2.7	1006	618797.3	4493640.4	618796.5	4494095.8	618797.1	4493784.8	618797.1	4493755.7
1007	-8.4	-1.4	-1.0	6.3	5.6	2.5	1007	618827.3	4493640.7	618826.5	4494092.8	618827.1	4493786.0	618827.1	4493758.2

Table A-1. High-Water Shoreline Position Change – Rockaway Inlet to Moriches Inlet, New York

	High-Water Shoreline Position Change Rate (m/yr)						High-Water Shoreline Position (UTM Zone 18, NAD 1983)								
	1873/88 to			1933/34 to		1983 to		1873/88		1933/34		1983		1991/97	
Transect #	1933/34	1983	1991/97	1983	1991/97	1991/97	Transect #	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)
1008	-8.2	-1.3	-1.0	6.3	5.5	2.0	1008	618857.3	4493645.4	618856.5	4494090.6	618857.1	4493782.7	618857.1	4493760.7
1009	-8.1	-1.3	-1.0	6.2	5.4	1.7	1009	618887.3	4493650.4	618886.6	4494085.1	618887.1	4493782.0	618887.1	4493763.3
1010	-7.9	-1.3	-1.0	6.0	5.2	1.9	1010	618917.3	4493652.7	618916.6	4494078.2	618917.1	4493786.8	618917.1	4493766.2
1011	-7.7	-1.3	-1.0	5.8	5.0	1.7	1011	618947.3	4493655.8	618946.6	4494069.7	618947.1	4493787.3	618947.1	4493769.2
1012	-7.5	-1.2	-1.0	5.6	4.8	1.3	1012	618977.3	4493658.1	618976.6	4494061.0	618977.1	4493785.7	618977.1	4493771.9
1013	-7.3	-1.2	-1.0	5.5	4.7	1.1	1013	619007.3	4493662.5	619006.6	4494053.8	619007.1	4493786.2	619007.1	4493774.3
1014	-7.0	-1.1	-0.9	5.3	4.5	0.8	1014	619037.3	4493668.6	619036.6	4494044.9	619037.1	4493784.5	619037.1	4493776.0
1015	-6.7	-1.0	-0.9	5.2	4.3	0.5	1015	619067.3	4493676.3	619066.6	4494035.8	619067.1	4493783.1	619067.1	4493777.8
1016	-6.2	-1.0	-0.8	4.7	4.0	0.7	1016	619097.3	4493684.3	619096.7	4494018.2	619097.1	4493786.6	619097.1	4493779.4
1017	-5.8	-0.9	-0.8	4.5	3.7	0.6	1017	619127.2	4493689.4	619126.7	4494004.4	619127.1	4493786.2	619127.1	4493780.0
1018	-5.5	-0.9	-0.7	4.2	3.5	0.7	1018	619157.2	4493694.5	619156.7	4493989.6	619157.1	4493785.5	619157.1	4493778.0
1019	-5.2	-0.8	-0.7	4.0	3.4	0.7	1019	619187.2	4493701.9	619186.7	4493980.5	619187.1	4493784.0	619187.1	4493776.2
1020	-4.8	-0.7	-0.6	3.8	3.2	0.5	1020	619217.2	4493708.2	619216.8	4493968.2	619217.1	4493783.6	619217.1	4493778.0
1021	-4.5	-0.7	-0.6	3.5	2.9	0.3	1021	619247.2	4493715.0	619246.8	4493955.3	619247.1	4493783.3	619247.1	4493779.9
1022	-3.9	-0.6	-0.5	3.1	2.6	0.2	1022	619277.2	4493722.8	619276.8	4493935.0	619277.1	4493784.5	619277.1	4493781.9
1023	-3.3	-0.5	-0.5	2.5	2.1	-0.0	1023	619307.2	4493731.7	619306.9	4493907.1	619307.1	4493783.9	619307.1	4493784.4
1024	-2.0	-0.4	-0.4	1.4	1.0	-0.5	1024	619337.2	4493742.1	619337.0	4493850.6	619337.1	4493783.3	619337.1	4493789.2
1025	-0.8	-0.3	-0.4	0.3	0.1	-1.0	1025	619367.1	4493753.5	619367.1	4493798.4	619367.1	4493782.9	619367.1	4493793.4
1026	0.0		-0.3		-0.6		1026	619397.1	4493762.3	619397.1	4493761.1			619397.1	4493795.5
1027	0.8	-0.1	-0.2	-1.1	-1.1	-1.3	1027	619427.1	4493771.6	619427.2	4493729.2	619427.1	4493781.8	619427.1	4493796.5
1028	1.3	-0.0	-0.1	-1.5	-1.4	-1.1	1028	619457.1	4493780.2	619457.2	4493710.3	619457.1	4493782.3	619457.1	4493794.5
1029	1.8	0.1	-0.0	-1.7	-1.6	-1.0	1029	619487.1	4493790.1	619487.2	4493694.9	619487.1	4493780.4	619487.1	4493790.9
1030	2.1	0.2	0.1	-1.9	-1.7	-0.7	1030	619517.1	4493798.3	619517.3	4493684.4	619517.1	4493779.2	619517.1	4493786.7
1031	2.4	0.3	0.2	-2.0	-1.7	-0.5	1031	619547.0	4493807.5	619547.3	4493679.3	619547.1	4493777.5	619547.1	4493782.5
1032	2.7	0.4	0.4	-2.1	-1.8	-0.4	1032	619577.0	4493817.1	619577.3	4493671.8	619577.1	4493773.7	619577.1	4493777.7
1033	3.0	0.6	0.5	-2.1	-1.8	-0.4	1033	619607.0	4493827.2	619607.3	4493666.4	619607.1	4493767.5	619607.1	4493772.0
1034	3.3	0.7	0.6	-2.1	-1.8	-0.5	1034	619637.0	4493837.1	619637.3	4493660.1	619637.1	4493760.7	619637.1	4493766.4
1035	3.5	0.9	0.8	-1.9	-1.7	-0.7	1035	619667.0	4493844.8	619667.3	4493656.8	619667.1	4493751.5	619667.1	4493759.2
1036	3.7	1.2	0.9	-1.7	-1.6	-1.3	1036	619697.0	4493855.3	619697.3	4493653.1	619697.2	4493736.9	619697.1	4493750.9
1037	4.0	1.4	1.1	-1.4	-1.5	-2.3	1037	619726.9	4493866.7	619727.3	4493652.8	619727.2	4493719.2	619727.2	4493744.0
1038	4.2	1.6	1.2	-1.2	-1.4	-2.5	1038	619756.9	4493878.8	619757.3	4493653.7	619757.2	4493712.2	619757.2	4493739.1
1039	4.4	1.7	1.4	-1.2	-1.4	-2.2	1039	619786.9	4493892.3	619787.3	4493656.5	619787.2	4493713.6	619787.2	4493738.0
1040	4.5	1.8	1.5	-1.1	-1.3	-2.0	1040	619816.9	4493904.4	619817.3	4493659.1	619817.2	4493715.0	619817.2	4493736.8
1041	4.7	1.9	1.6	-1.1	-1.2	-1.8	1041	619846.9	4493915.7	619847.3	4493662.6	619847.2	4493716.2	619847.2	4493735.7
1042	4.8	2.0	1.7	-1.0	-1.1	-1.6	1042	619876.8	4493926.6	619877.3	4493667.7	619877.2	4493717.1	619877.2	4493735.2
1043	4.9	2.1	1.8	-0.9	-1.0	-1.5	1043	619906.8	4493936.6	619907.3	4493674.6	619907.2	4493719.6	619907.2	4493735.6
1044	4.9	2.2	1.8	-0.8	-0.9	-1.2	1044	619936.8	4493944.6	619937.3	4493681.1	619937.2	4493722.2	619937.2	4493735.7
1045	4.8	2.2	1.9	-0.6	-0.7	-1.2	1045	619966.8	4493952.3	619967.2	4493691.1	619967.2	4493722.1	619967.2	4493735.7
1046	4.9		2.0		-0.6		1046	619996.8	4493961.2	619997.2	4493698.3			619997.2	4493735.7
1047	4.9		2.0		-0.5		1047	620026.8	4493969.9	620027.2	4493706.7			620027.2	4493736.9
1048	4.9	2.5	2.1	-0.2	-0.5	-1.4	1048	620056.7	4493978.1	620057.2	4493713.3	620057.2	4493724.5	620057.2	4493740.1
1049	4.8	2.5	2.1	-0.1	-0.3	-1.3	1049	620086.7	4493986.4	620087.2	4493726.0	620087.2	4493729.2	620087.2	4493743.4
1050	4.8	2.6	2.2	0.1	-0.1	-1.2	1050	620116.7	4493997.0	620117.2	4493738.5	620117.2	4493732.4	620117.1	4493746.0
1051	4.7	2.6	2.3	0.3	0.1	-1.1	1051	620146.7	4494007.9	620147.1	4493751.8	620147.2	4493736.0	620147.1	4493747.7
1052	4.8	2.8	2.4	0.5	0.2	-1.0	1052	620176.7	4494021.3	620177.1	4493761.0	620177.2	4493737.7	620177.1	4493748.9
1053	5.0	2.9	2.5	0.6	0.4	-0.8	1053	620206.6	4494035.4	620207.1	4493768.2	620207.2	4493738.9	620207.1	4493747.2
1054	4.9	3.0	2.7	0.9	0.6	-0.4	1054	620236.6	4494043.0	620237.1	4493777.4	620237.2	4493734.6	620237.2	4493738.9
1055	4.8						1055	620266.6	4494049.7	620267.1	4493791.3				
1056	4.7						1056	620296.6	4494063.2	620297.0	4493808.3				
1057	4.5						1057	620326.6	4494071.1	620327.0	4493829.1				
1058	4.3						1058	620356.6	4494077.2	620357.0	4493848.0				
1059	4.0						1059	620386.6	4494084.3	620386.9	4493867.4				
1060	3.9						1060	620416.5	4494092.5	620416.9	4493882.4				

Table A-1. High-Water Shoreline Position Change – Rockaway Inlet to Moriches Inlet, New York

	High-Water Shoreline Position Change Rate (m/yr)						High-Water Shoreline Position (UTM Zone 18, NAD 1983)								
	1873/88 to			1933/34 to		1983 to	1873/88		1933/34		1983		1991/97		
Transect #	1933/34	1983	1991/97	1983	1991/97	1991/97	Transect #	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)
1061	3.9						1061	620446.5	4494104.3	620446.9	4493895.7				
1062	3.8						1062	620476.5	4494117.9	620476.9	4493914.5				
1063	3.6						1063	620506.5	4494128.4	620506.8	4493934.6				
1064	3.4						1064	620536.5	4494137.9	620536.8	4493956.1				
1065	3.2						1065	620566.5	4494146.7	620566.7	4493976.2				
1066	2.9						1066	620596.4	4494155.6	620596.7	4493997.9				
1067	2.6						1067	620626.4	4494162.7	620626.7	4494024.7				
1068	2.3						1068	620656.4	4494171.1	620656.6	4494049.3				
1069	1.7						1069	620686.4	4494177.9	620686.6	4494085.3				
1070	1.3						1070	620716.4	4494176.8	620716.5	4494107.2				
1071	0.7						1071	620746.4	4494171.6	620746.5	4494135.2				
1072	0.3						1072	620776.4	4494175.5	620776.4	4494159.9				
1073	0.0						1073	620806.4	4494190.7	620806.4	4494190.9				
1074	-0.4						1074	620836.4	4494203.2	620836.3	4494226.5				
1075	-0.8						1075	620866.3	4494215.2	620866.3	4494256.9				
1076	-1.1						1076	620896.3	4494228.2	620896.2	4494289.2				
1077	-1.4						1077	620926.3	4494240.0	620926.2	4494314.2				
1078	-1.7						1078	620956.3	4494250.5	620956.1	4494343.4				
1079	-2.0						1079	620986.2	4494263.2	620986.1	4494370.5				
1080	-2.2						1080	621016.2	4494283.4	621016.0	4494399.9				
1081	-2.6						1081	621046.2	4494297.0	621045.9	4494436.9				
1082	-3.0						1082	621076.2	4494312.8	621075.9	4494472.4				
1083	-3.4						1083	621106.1	4494326.8	621105.8	4494512.5				
1084	-3.5						1084	621136.1	4494346.2	621135.8	4494536.9				
1085	-3.5						1085	621166.1	4494375.1	621165.7	4494562.1				
1086					18.6		1086			621387.0	4494047.5			621694.5	4493035.4
1087					17.0		1087			621441.5	4493971.3			621722.6	4493046.3
1088					15.9		1088			621487.7	4493922.6			621750.8	4493056.7
1089					14.8		1089			621534.4	4493872.1			621779.0	4493066.9
1090					14.0		1090			621574.7	4493842.7			621807.0	4493078.1
1091					13.4		1091			621613.3	4493818.9			621834.6	4493090.4
1092					13.0		1092			621647.6	4493809.0			621862.9	4493100.5
1093					12.6		1093			621681.8	4493799.8			621891.1	4493110.9
1094					12.2		1094			621717.7	4493784.7			621919.6	4493120.3
1095					11.7		1095			621754.2	4493767.8			621947.4	4493131.8
1096					11.2		1096			621789.2	4493755.9			621974.8	4493144.8
1097					10.9		1097			621822.7	4493748.8			622002.8	4493156.0
1098					10.7		1098			621854.8	4493746.2			622031.3	4493165.5
1099					10.5		1099			621885.2	4493749.5			622059.8	4493174.8
1100					10.4		1100			621915.5	4493753.0			622088.1	4493184.8
1101					10.3		1101			621945.2	4493758.2			622116.4	4493195.0
1102					10.2		1102			621974.8	4493764.0			622143.6	4493208.6
1103					10.0		1103			622004.4	4493769.9			622170.8	4493222.3
1104					9.9		1104			622033.5	4493777.3			622198.1	4493235.4
1105					9.9		1105			622062.4	4493785.4			622226.1	4493246.5
1106					9.8		1106			622091.1	4493794.1			622254.1	4493257.6
1107					9.8		1107			622119.9	4493802.4			622282.1	4493268.8
1108					9.7		1108			622149.1	4493809.6			622310.1	4493279.8
1109					9.7		1109			622177.7	4493818.6			622338.1	4493290.7
1110					9.7		1110			622205.6	4493830.2			622366.4	4493300.7
1111					9.7		1111			622233.3	4493842.1			622394.5	4493311.6
1112					9.7		1112			622261.1	4493853.6			622421.9	4493324.5
1113					9.7		1113			622289.3	4493864.2			622449.1	4493338.1

Table A-1. High-Water Shoreline Position Change – Rockaway Inlet to Moriches Inlet, New York

High-Water Shoreline Position Change Rate (m/yr)					High-Water Shoreline Position (UTM Zone 18, NAD 1983)									
1873/88 to			1933/34 to		1873/88		1933/34		1983		1991/97			
Transect #	1933/34	1983	1991/97	1983	1991/97	Transect #	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)
1114				9.6		1114			622317.5	4493874.4			622476.5	4493351.2
1115				9.5		1115			622345.6	4493885.1			622503.5	4493365.6
1116				9.5		1116			622373.9	4493895.4			622530.7	4493379.1
1117				9.4		1117			622403.2	4493902.1			622558.4	4493391.1
1118				9.3		1118			622431.8	4493911.1			622586.6	4493401.5
1119				9.2		1119			622461.1	4493917.9			622613.8	4493415.4
1120				9.1		1120			622490.9	4493923.1			622642.0	4493425.7
1121				9.1		1121			622520.4	4493929.1			622670.5	4493434.9
1122				9.1		1122			622548.6	4493939.4			622699.0	4493444.6
1123				9.1		1123			622576.4	4493951.2			622727.3	4493454.6
1124				9.1		1124			622604.5	4493961.9			622756.0	4493463.4
1125				9.1		1125			622633.1	4493971.0			622784.6	4493472.4
1126				9.1		1126			622661.6	4493980.2			622813.0	4493481.9
1127				9.1		1127			622690.1	4493989.6			622841.2	4493492.3
1128				9.1		1128			622718.6	4493999.1			622869.3	4493503.3
1129				9.1		1129			622747.0	4494008.7			622897.8	4493512.5
1130				9.1		1130			622775.5	4494018.1			622925.9	4493523.2
1131				9.0		1131			622804.3	4494026.5			622953.3	4493536.2
1132				8.9		1132			622833.7	4494033.1			622980.6	4493549.4
1133				8.8		1133			622862.6	4494041.2			623008.4	4493561.4
1134				8.8		1134			622891.4	4494049.5			623036.4	4493572.2
1135				8.7		1135			622920.4	4494057.3			623065.1	4493581.2
1136				8.7		1136			622949.6	4494064.3			623093.5	4493590.7
1137				8.6		1137			622979.1	4494070.5			623121.6	4493601.4
1138				8.5		1138			623008.5	4494076.9			623149.3	4493613.6
1139				8.4		1139			623037.9	4494083.5			623177.5	4493624.0
1140				8.4		1140			623066.7	4494091.6			623205.4	4493635.3
1141				8.3		1141			623095.5	4494100.1			623233.2	4493646.9
1142				8.2		1142			623124.5	4494107.9			623261.1	4493658.3
1143				8.2		1143			623153.7	4494115.0			623289.4	4493668.4
1144				8.1		1144			623184.1	4494118.3			623317.7	4493678.4
1145				7.9		1145			623215.0	4494119.6			623345.7	4493689.4
1146				7.8		1146			623244.6	4494125.6			623374.2	4493699.0
1147				7.7		1147			623274.6	4494130.0			623402.6	4493708.8
1148				7.6		1148			623304.7	4494133.9			623431.0	4493718.4
1149				7.6		1149			623334.4	4494139.5			623459.7	4493727.1
1150				7.5		1150			623363.7	4494146.4			623488.4	4493735.8
1151				7.5		1151			623392.7	4494154.0			623517.1	4493744.5
1152				7.5		1152			623422.3	4494159.6			623545.9	4493752.8
1153				7.4		1153			623451.7	4494166.3			623574.9	4493760.6
1154				7.4		1154			623481.0	4494172.8			623603.9	4493768.4
1155				7.4		1155			623510.4	4494179.3			623632.6	4493777.2
1156				7.4		1156			623539.0	4494188.5			623661.1	4493786.4
1157				7.3		1157			623568.3	4494195.3			623690.0	4493794.7
1158				7.3		1158			623597.1	4494203.6			623718.0	4493805.6
1159				7.3		1159			623625.7	4494212.7			623746.8	4493814.1
1160				7.3		1160			623654.1	4494222.4			623775.4	4493823.0
1161				7.3		1161			623684.0	4494227.1			623804.1	4493832.0
1162				7.2		1162			623713.8	4494232.4			623832.7	4493840.9
1163				7.1		1163			623743.0	4494239.3			623861.2	4493850.4
1164				7.1		1164			623771.9	4494247.4			623889.3	4493861.1
1165	3.6		5.4	7.0		1165	623744.3	4494441.4	623801.2	4494254.2			623917.5	4493871.6
1166	2.6		4.8	7.0		1166	623790.2	4494393.7	623830.5	4494261.1			623946.0	4493880.7

Table A-1. High-Water Shoreline Position Change – Rockaway Inlet to Moriches Inlet, New York

	High-Water Shoreline Position Change Rate (m/yr)						High-Water Shoreline Position (UTM Zone 18, NAD 1983)								
	1873/88 to			1933/34 to		1983 to		1873/88		1933/34		1983		1991/97	
Transect #	1933/34	1983	1991/97	1983	1991/97	1991/97	Transect #	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)
1167	1.9		4.5		6.9		1167	623830.7	4494363.6	623859.9	4494267.3			623974.4	4493890.7
1168	1.6		4.2		6.7		1168	623865.6	4494351.7	623890.4	4494270.3			624002.0	4493902.8
1169	1.3		4.1		6.7		1169	623898.6	4494346.4	623919.3	4494278.2			624030.9	4493911.0
1170	1.0		3.9		6.7		1170	623933.0	4494336.2	623948.4	4494285.8			624059.4	4493920.3
1171	0.6		3.7		6.6		1171	623968.1	4494324.0	623977.4	4494293.4			624087.2	4493932.2
1172	0.3		3.5		6.6		1172	624002.5	4494314.1	624006.9	4494299.7			624115.4	4493942.3
1173	-0.1		3.3		6.5		1173	624037.1	4494303.5	624036.3	4494306.0			624144.1	4493951.1
1174	-0.5		3.1		6.5		1174	624073.3	4494287.6	624065.4	4494313.3			624172.3	4493961.7
1175	-1.1		2.8		6.4		1175	624111.1	4494266.3	624094.6	4494320.6			624199.9	4493973.9
1176	-1.6		2.5		6.2		1176	624148.2	4494247.4	624123.7	4494327.9			624227.1	4493987.6
1177	-2.0		2.2		6.2		1177	624184.6	4494230.6	624152.9	4494335.2			624255.9	4493996.2
1178	-2.3		2.0		6.2		1178	624218.7	4494221.5	624182.0	4494342.6			624283.8	4494007.3
1179	-2.5		1.9		6.0		1179	624251.1	4494218.3	624212.3	4494346.0			624311.2	4494020.4
1180	-2.6		1.8		5.9		1180	624282.5	4494218.1	624241.1	4494354.5			624339.1	4494031.9
1181	-2.8		1.7		5.9		1181	624313.4	4494219.5	624270.1	4494362.0			624367.1	4494042.8
1182	-2.9		1.6		5.8		1182	624345.1	4494218.3	624299.1	4494369.8			624395.6	4494052.2
1183	-3.1		1.5		5.8		1183	624375.6	4494221.1	624327.5	4494379.7			624423.7	4494062.9
1184	-3.2		1.4		5.8		1184	624406.1	4494223.9	624356.5	4494387.2			624451.7	4494073.8
1185	-3.3		1.3		5.7		1185	624436.9	4494225.8	624385.9	4494393.8			624479.8	4494084.8
1186	-3.3		1.3		5.6		1186	624467.0	4494229.8	624415.5	4494399.5			624507.6	4494096.2
1187	-3.3		1.2		5.5		1187	624497.1	4494234.1	624445.1	4494405.3			624536.4	4494104.8
1188	-3.3		1.2		5.5		1188	624526.2	4494241.7	624474.7	4494411.0			624565.3	4494112.8
1189	-3.2		1.2		5.4		1189	624555.3	4494249.0	624504.5	4494416.0			624594.1	4494121.1
1190	-3.2		1.2		5.4		1190	624584.4	4494256.4	624534.5	4494420.6			624623.3	4494128.2
1191	-3.2		1.2		5.3		1191	624613.9	4494262.5	624563.9	4494427.2			624652.0	4494137.1
1192	-3.3		1.1		5.3		1192	624644.7	4494264.1	624593.6	4494432.6			624680.5	4494146.6
1193	-3.3		1.1		5.2		1193	624675.9	4494264.7	624624.1	4494435.4			624709.8	4494153.3
1194	-3.4		1.0		5.1		1194	624706.7	4494266.7	624654.1	4494439.8			624738.6	4494161.6
1195	-3.2		1.0		4.9		1195	624734.9	4494277.1	624685.0	4494441.1			624766.8	4494172.0
1196	-2.9		1.0		4.8		1196	624762.1	4494290.6	624716.2	4494441.9			624795.5	4494180.8
1197	-2.8		1.1		4.8		1197	624789.9	4494302.5	624745.8	4494447.6			624824.7	4494188.0
1198	-2.7		1.1		4.8		1198	624817.1	4494316.1	624774.3	4494456.9			624853.1	4494197.5
1199	-2.6		1.2		4.7		1199	624844.3	4494329.9	624803.6	4494463.7			624881.4	4494207.6
1200	-2.4		1.2		4.6		1200	624871.9	4494342.1	624834.2	4494466.2			624909.6	4494218.0
1201	-2.3		1.2		4.4		1201	624899.9	4494353.1	624864.1	4494470.9			624937.5	4494229.5
1202	-2.2		1.2		4.3		1202	624927.2	4494366.4	624893.5	4494477.4			624965.4	4494240.9
1203	-2.1		1.2		4.3		1203	624955.1	4494377.8	624922.3	4494485.9			624993.2	4494252.4
1204	-2.0		1.2		4.2		1204	624982.9	4494389.6	624952.0	4494491.2			625021.3	4494263.0
1205	-1.9		1.2		4.2		1205	625010.6	4494401.4	624980.2	4494501.8			625049.6	4494273.1
1206	-1.8		1.3		4.2		1206	625037.3	4494416.8	625008.6	4494511.2			625078.0	4494283.0
1207	-1.7		1.3		4.2		1207	625064.3	4494431.3	625037.3	4494520.2			625106.5	4494292.3
1208	-1.6		1.4		4.2		1208	625091.4	4494445.1	625066.5	4494527.1			625135.4	4494300.3
1209	-1.5		1.4		4.2		1209	625119.4	4494456.4	625096.1	4494533.0			625165.9	4494303.2
1210	-1.5		1.5		4.2		1210	625148.6	4494463.2	625125.5	4494539.3			625195.3	4494309.5
1211	-1.5		1.4		4.2		1211	625178.0	4494469.8	625154.7	4494546.3			625224.2	4494317.8
1212	-1.4		1.4		4.1		1212	625206.2	4494480.1	625183.8	4494554.0			625252.2	4494328.8
1213	-1.3		1.4		4.0		1213	625233.8	4494492.4	625213.2	4494560.2			625280.0	4494340.5
1214	-1.1		1.5		3.9		1214	625260.5	4494507.8	625242.6	4494566.6			625307.6	4494352.7
1215	-1.0		1.5		3.8		1215	625287.6	4494521.9	625271.9	4494573.4			625335.0	4494365.8
1216	-0.8		1.5		3.7		1216	625314.3	4494537.0	625301.2	4494580.2			625362.5	4494378.5
1217	-0.7		1.5		3.6		1217	625341.3	4494551.6	625330.4	4494587.3			625389.9	4494391.7
1218	-0.6		1.5		3.5		1218	625369.3	4494562.4	625360.3	4494592.3			625417.6	4494403.6
1219	-0.4		1.5		3.3		1219	625397.3	4494573.6	625391.1	4494594.1			625446.0	4494413.2

Table A-1. High-Water Shoreline Position Change – Rockaway Inlet to Moriches Inlet, New York

	High-Water Shoreline Position Change Rate (m/yr)						High-Water Shoreline Position (UTM Zone 18, NAD 1983)									
	1873/88 to			1933/34 to		1983 to	1873/88		1933/34		1983		1991/97			
Transect #	1933/34	1983	1991/97	1983	1991/97	1991/97	Transect #	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	
1220	-0.3		1.5		3.3		1220	625425.1	4494585.2	625420.8	4494599.4			625474.6	4494422.2	
1221	-0.2		1.5		3.2		1221	625453.0	4494596.5	625450.5	4494604.9			625502.8	4494432.7	
1222	-0.1		1.6		3.1		1222	625481.6	4494605.8	625480.2	4494610.3			625531.7	4494440.9	
1223	0.0		1.6		3.1		1223	625509.8	4494616.1	625509.9	4494615.6			625561.4	4494446.2	
1224	0.1		1.7		3.1		1224	625537.8	4494627.1	625539.6	4494621.3			625590.9	4494452.2	
1225	0.2		1.7		3.1		1225	625566.4	4494636.2	625568.9	4494627.9			625620.7	4494457.6	
1226	0.2		1.7		3.1		1226	625594.3	4494647.6	625598.0	4494635.4			625649.7	4494465.0	
1227	0.4		1.8		3.1		1227	625622.3	4494658.6	625628.4	4494638.4			625679.1	4494471.5	
1228	0.6		1.8		2.9		1228	625651.1	4494667.1	625660.5	4494636.2			625708.4	4494478.5	
1229	0.7		1.8		2.8		1229	625679.6	4494676.4	625691.1	4494638.6			625737.4	4494486.3	
1230	0.9		1.8		2.7		1230	625707.4	4494688.0	625722.0	4494640.0			625766.6	4494493.2	
1231	1.0		1.8		2.6		1231	625735.7	4494698.2	625751.7	4494645.5			625795.0	4494503.0	
1232	1.1		1.9		2.6		1232	625763.8	4494708.9	625781.2	4494651.7			625823.9	4494511.0	
1233	1.2		1.9		2.5		1233	625791.6	4494720.5	625811.1	4494656.3			625852.5	4494519.9	
1234	1.4		1.9		2.4		1234	625819.7	4494731.2	625841.3	4494660.2			625881.0	4494529.5	
1235	1.5		1.9		2.3		1235	625847.9	4494741.5	625871.3	4494664.5			625909.3	4494539.5	
1236	1.6		1.9		2.2		1236	625875.9	4494752.6	625901.4	4494668.8			625937.3	4494550.5	
1237	1.8		1.9		2.1		1237	625903.7	4494764.2	625931.4	4494673.0			625966.1	4494559.0	
1238	1.9		2.0		2.0		1238	625932.0	4494774.4	625961.7	4494676.8			625995.2	4494566.3	
1239	2.0		2.0		1.9		1239	625960.6	4494783.5	625992.2	4494679.4			626024.2	4494574.1	
1240	2.2		2.0		1.8		1240	625989.1	4494792.9	626022.8	4494682.0			626053.1	4494582.1	
1241	2.2		2.0		1.8		1241	626018.2	4494800.3	626052.9	4494686.2			626082.0	4494590.4	
1242	2.3		2.0		1.7		1242	626046.8	4494809.3	626082.8	4494690.8			626111.6	4494596.1	
1243	2.4		2.0		1.7		1243	626075.7	4494817.6	626112.7	4494695.6			626140.8	4494603.2	
1244	2.4		2.0		1.7		1244	626104.6	4494825.4	626142.6	4494700.6			626169.9	4494610.6	
1245	2.5		2.0		1.6		1245	626133.9	4494832.3	626172.6	4494705.0			626199.1	4494617.7	
1246	2.6		2.0		1.5		1246	626163.0	4494839.8	626203.0	4494708.0			626228.5	4494624.0	
1247	2.6		2.1		1.5		1247	626192.0	4494847.6	626232.9	4494712.8			626258.0	4494630.3	
1248	2.7		2.1		1.6		1248	626220.5	4494856.7	626262.6	4494718.2			626288.2	4494633.9	
1249	2.6		2.0		1.5		1249	626250.8	4494860.2	626292.2	4494724.1			626316.7	4494643.4	
1250	2.6		2.0		1.4		1250	626280.2	4494866.6	626321.7	4494730.1			626345.6	4494651.4	
1251	2.7		2.0		1.4		1251	626308.9	4494875.4	626351.9	4494734.1			626374.4	4494659.8	
1252	2.8		2.0		1.3		1252	626338.2	4494882.3	626382.1	4494737.8			626403.7	4494666.8	
1253	2.9		2.0		1.2		1253	626366.6	4494891.9	626412.3	4494741.6			626432.5	4494675.2	
1254	3.1		2.1		1.2		1254	626393.6	4494906.3	626442.4	4494745.7			626461.5	4494682.8	
1255	3.2		2.1		1.1		1255	626422.5	4494914.3	626472.1	4494751.0			626490.9	4494689.1	
1256	3.2		2.1		1.1		1256	626451.8	4494921.2	626501.9	4494756.3			626520.4	4494695.3	
1257	3.2		2.2		1.1		1257	626481.1	4494928.0	626531.7	4494761.2			626550.6	4494699.3	
1258	3.3		2.2		1.1		1258	626510.5	4494934.5	626562.0	4494764.9			626580.4	4494704.3	
1259	3.3		2.2		1.1		1259	626539.5	4494942.2	626591.9	4494769.7			626609.9	4494710.2	
1260	3.4		2.2		1.1		1260	626568.1	4494951.3	626621.4	4494775.6			626639.3	4494716.9	
1261	3.4		2.2		1.1		1261	626597.0	4494959.2	626651.0	4494781.4			626668.5	4494723.9	
1262	3.4		2.2		1.1		1262	626627.5	4494962.0	626680.8	4494786.7			626698.3	4494729.1	
1263	3.2		2.1		1.1		1263	626660.3	4494957.3	626710.8	4494790.9			626728.3	4494733.5	
1264	3.1		2.0		1.0		1264	626693.0	4494952.9	626741.3	4494794.0			626758.0	4494738.8	
1265	2.9		1.9		1.0		1265	626726.0	4494947.3	626771.4	4494798.1			626787.5	4494744.9	
1266	2.8		1.9		0.9		1266	626757.5	4494947.0	626801.5	4494802.2			626817.0	4494751.0	
1267	2.8		1.8		1.0		1267	626787.9	4494949.9	626831.2	4494807.6			626847.2	4494754.9	
1268	2.7		1.8		1.0		1268	626818.7	4494951.9	626860.9	4494813.2			626877.4	4494758.7	
1269	2.6		1.8		1.0		1269	626849.3	4494954.4	626890.5	4494818.9			626907.3	4494763.6	
1270	2.6		1.8		1.0		1270	626879.6	4494957.8	626920.0	4494825.0			626936.6	4494770.2	
1271	2.5		1.7		1.0		1271	626910.5	4494959.5	626949.4	4494831.4			626966.6	4494774.6	
1272	2.4		1.7		1.1		1272	626941.0	4494962.2	626978.7	4494838.0			626997.0	4494777.9	

Table A-1. High-Water Shoreline Position Change – Rockaway Inlet to Moriches Inlet, New York

High-Water Shoreline Position Change Rate (m/yr)						
	1873/88 to			1933/34 to		1983 to
Transect #	1933/34	1983	1991/97	1983	1991/97	1991/97
1273	2.3		1.7		1.1	
1274	2.2		1.6		1.2	
1275	2.1		1.6		1.2	
1276	2.1		1.6		1.2	
1277	2.2		1.6		1.1	
1278	2.3		1.6		0.8	
1279	2.5		1.6		0.7	
1280	2.6		1.6		0.6	
1281	2.8		1.6		0.5	
1282					0.4	
1283					0.3	
1284					0.1	
1285					0.0	
1286					-0.1	
1287					-0.1	
1288					-0.1	
1289					-0.1	
1290					-0.1	
1291					-0.1	
1292					-0.1	
1293					-0.1	
1294					-0.1	
1295					-0.1	
1296					-0.0	
1297					0.1	
1298					0.1	
1299					0.1	
1300					0.1	
1301					0.1	
1302					0.1	
1303					0.1	
1304					0.0	
1305					0.0	
1306	1.3		0.6		-0.1	
1307	1.3		0.6		-0.1	
1308	1.7		0.8		-0.1	
1309	1.9		0.9		-0.1	
1310	2.0		0.9		-0.2	
1311	2.0		0.9		-0.2	
1312	2.0		0.8		-0.3	
1313	1.9		0.8		-0.3	
1314	1.8		0.7		-0.2	
1315	1.7		0.7		-0.2	
1316	1.6		0.7		-0.2	
1317	1.5		0.6		-0.2	
1318	1.4		0.6		-0.2	
1319	1.4		0.6		-0.2	
1320	1.3		0.6		-0.2	
1321	1.3		0.5		-0.2	
1322	1.4		0.6		-0.2	
1323	1.5		0.6		-0.2	
1324	1.5		0.6		-0.2	
1325	1.5		0.6		-0.2	

High-Water Shoreline Position (UTM Zone 18, NAD 1983)								
	1873/88		1933/34		1983		1991/97	
Transect #	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)
1273	626971.9	4494963.8	627007.8	4494845.5			627026.5	4494783.9
1274	627002.8	4494965.2	627036.6	4494853.9			627055.7	4494791.1
1275	627032.9	4494969.3	627065.7	4494861.5			627085.4	4494796.5
1276	627063.0	4494973.5	627095.2	4494867.4			627114.5	4494803.9
1277	627092.5	4494979.5	627126.2	4494868.5			627143.7	4494810.8
1278	627122.4	4494984.4	627158.8	4494864.4			627172.7	4494818.8
1279	627150.8	4494993.9	627189.8	4494865.6			627201.5	4494827.1
1280	627179.5	4495002.9	627220.8	4494866.7			627230.6	4494834.6
1281	627207.8	4495012.7	627252.4	4494865.9			627259.9	4494841.3
1282			627283.3	4494867.6			627289.2	4494848.1
1283			627314.3	4494868.8			627318.5	4494854.9
1284			627345.2	4494870.3			627347.5	4494862.7
1285			627375.7	4494872.9			627376.4	4494870.8
1286			627406.3	4494875.6			627405.5	4494878.2
1287			627436.3	4494880.0			627435.1	4494884.0
1288			627465.6	4494886.5			627464.4	4494890.6
1289			627494.9	4494893.6			627493.5	4494898.2
1290			627524.0	4494900.7			627522.6	4494905.4
1291			627553.3	4494907.5			627552.0	4494911.9
1292			627582.7	4494914.1			627581.1	4494919.3
1293			627611.8	4494921.4			627609.8	4494927.9
1294			627640.2	4494931.0			627638.4	4494937.1
1295			627668.4	4494941.6			627666.9	4494946.6
1296			627696.4	4494952.8			627696.2	4494953.1
1297			627724.6	4494963.0			627726.0	4494958.5
1298			627753.4	4494971.5			627755.0	4494966.0
1299			627782.6	4494978.3			627783.9	4494974.2
1300			627811.4	4494986.8			627812.3	4494983.8
1301			627840.2	4494995.3			627841.1	4494992.3
1302			627869.0	4495003.8			627870.3	4494999.4
1303			627897.8	4495012.3			627898.9	4495008.6
1304			627926.5	4495020.8			627927.2	4495018.6
1305			627955.3	4495029.2			627955.3	4495029.2
1306	627963.3	4495106.1	627984.1	4495037.7			627983.3	4495040.1
1307	627993.1	4495111.3	628013.1	4495045.5			628012.1	4495048.7
1308	628016.4	4495137.7	628042.2	4495052.7			628041.3	4495055.8
1309	628041.1	4495159.5	628071.3	4495060.2			628069.7	4495065.5
1310	628069.3	4495170.0	628100.4	4495067.6			628097.9	4495075.8
1311	628098.6	4495176.6	628129.8	4495074.2			628126.6	4495084.8
1312	628128.5	4495181.5	628159.5	4495079.6			628155.4	4495093.0
1313	628158.5	4495186.0	628187.6	4495090.2			628183.3	4495104.4
1314	628188.7	4495190.0	628216.5	4495098.3			628212.5	4495111.6
1315	628218.6	4495194.5	628245.5	4495106.2			628241.6	4495118.9
1316	628249.0	4495197.9	628274.2	4495114.9			628270.6	4495126.7
1317	628279.3	4495201.1	628302.3	4495125.5			628299.4	4495135.1
1318	628308.9	4495207.0	628331.1	4495133.9			628327.7	4495145.3
1319	628338.2	4495213.7	628360.0	4495142.0			628357.1	4495151.6
1320	628368.0	4495219.0	628389.0	4495149.8			628386.1	4495159.2
1321	628397.4	4495225.2	628417.9	4495157.9			628414.5	4495169.1
1322	628425.5	4495236.0	628447.4	4495164.0			628443.8	4495175.9
1323	628453.5	4495247.2	628476.2	4495172.3			628472.6	4495184.1
1324	628482.2	4495255.9	628505.2	4495180.0			628501.7	4495191.5
1325	628511.0	4495264.3	628534.6	4495186.4			628530.8	4495199.0

Table A-1. High-Water Shoreline Position Change – Rockaway Inlet to Moriches Inlet, New York

	High-Water Shoreline Position Change Rate (m/yr)						High-Water Shoreline Position (UTM Zone 18, NAD 1983)									
	1873/88 to			1933/34 to		1983 to	1873/88		1933/34		1983		1991/97			
Transect #	1933/34	1983	1991/97	1983	1991/97	1991/97	Transect #	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	
1326	1.5		0.6		-0.3		1326	628540.4	4495270.8	628564.0	4495192.9			628559.2	4495208.6	
1327	1.4		0.5		-0.3		1327	628571.4	4495271.9	628592.8	4495201.3			628587.9	4495217.5	
1328	1.2		0.4		-0.3		1328	628602.7	4495271.9	628621.6	4495209.7			628616.6	4495226.1	
1329	1.1		0.4		-0.3		1329	628633.5	4495273.7	628650.7	4495217.2			628645.5	4495234.3	
1330	1.0		0.4		-0.3		1330	628663.7	4495277.6	628679.7	4495224.8			628675.1	4495240.0	
1331	0.9		0.3		-0.2		1331	628693.8	4495281.7	628708.6	4495233.0			628704.8	4495245.5	
1332	0.9		0.3		-0.2		1332	628723.0	4495288.8	628737.4	4495241.2			628733.6	4495254.1	
1333	1.0		0.4		-0.2		1333	628751.3	4495298.8	628766.2	4495249.8			628762.8	4495260.9	
1334	1.0		0.4		-0.1		1334	628779.1	4495310.5	628795.1	4495257.8			628792.8	4495265.6	
1335	1.1		0.5		-0.1		1335	628807.2	4495321.2	628824.3	4495264.9			628823.0	4495269.3	
1336	1.2		0.5		-0.1		1336	628835.3	4495331.9	628853.7	4495271.5			628852.5	4495275.3	
1337	1.2		0.6		-0.1		1337	628863.8	4495341.4	628883.2	4495277.5			628881.8	4495282.0	
1338	1.4		0.6		-0.2		1338	628892.2	4495351.0	628913.6	4495280.6			628910.6	4495290.6	
1339	1.5		0.6		-0.3		1339	628920.9	4495359.9	628944.6	4495281.9			628939.6	4495298.4	
1340	1.7		0.6		-0.4		1340	628949.6	4495368.4	628976.1	4495281.2			628968.8	4495305.2	
1341	1.8		0.6		-0.6		1341	628978.4	4495376.9	629007.4	4495281.6			628997.8	4495313.2	
1342	2.0		0.6		-0.7		1342	629007.6	4495384.2	629038.2	4495283.3			629026.9	4495320.6	
1343	2.0		0.6		-0.8		1343	629036.6	4495391.7	629068.2	4495287.6			629055.7	4495328.9	
1344	2.1		0.6		-0.9		1344	629065.4	4495400.3	629098.1	4495292.7			629083.6	4495340.2	
1345	2.1		0.6		-0.9		1345	629093.9	4495409.7	629127.3	4495299.6			629112.0	4495350.1	
1346	2.3		0.6		-1.0		1346	629121.2	4495422.8	629156.7	4495306.2			629140.2	4495360.6	
1347	2.3		0.6		-1.0		1347	629150.6	4495429.3	629185.9	4495313.3			629169.5	4495367.1	
1348	2.2		0.6		-1.0		1348	629180.1	4495435.6	629214.6	4495322.0			629198.6	4495374.7	
1349	2.2		0.6		-1.0		1349	629209.2	4495442.9	629243.2	4495330.9			629227.4	4495383.0	
1350	2.1		0.6		-1.0		1350	629238.1	4495451.0	629271.7	4495340.3			629255.8	4495392.8	
1351	2.1		0.5		-1.0		1351	629267.2	4495458.2	629300.3	4495349.3			629284.2	4495402.6	
1352	2.1		0.5		-1.0		1352	629295.5	4495468.3	629329.0	4495358.2			629312.6	4495412.2	
1353	2.1		0.5		-1.0		1353	629324.4	4495476.4	629357.5	4495367.5			629340.5	4495423.5	
1354	2.0		0.5		-0.9		1354	629353.1	4495485.4	629384.5	4495382.0			629369.3	4495431.8	
1355	1.9		0.5		-0.8		1355	629381.3	4495495.7	629411.8	4495395.4			629398.1	4495440.5	
1356	1.9		0.5		-0.8		1356	629409.6	4495505.7	629439.2	4495408.2			629426.1	4495451.3	
1357	1.9		0.6		-0.7		1357	629437.1	4495518.4	629466.7	4495421.1			629455.0	4495459.5	
1358	1.9		0.6		-0.6		1358	629465.4	4495528.5	629494.5	4495432.6			629484.0	4495467.3	
1359	1.8		0.6		-0.6		1359	629493.9	4495538.0	629522.4	4495444.1			629513.2	4495474.2	
1360	1.7		0.6		-0.5		1360	629523.2	4495544.6	629550.3	4495455.3			629542.2	4495481.9	
1361	1.7		0.6		-0.5		1361	629552.3	4495552.1	629578.5	4495465.8			629570.3	4495492.9	
1362	1.7		0.5		-0.5		1362	629581.0	4495560.8	629606.9	4495475.7			629598.1	4495504.4	
1363	1.6		0.5		-0.6		1363	629610.4	4495567.2	629635.1	4495485.9			629625.9	4495516.2	
1364	1.6		0.5		-0.6		1364	629639.0	4495576.3	629663.2	4495496.5			629653.4	4495528.7	
1365	1.6		0.4		-0.6		1365	629667.2	4495586.6	629691.6	4495506.2			629681.1	4495540.7	
1366	1.7		0.5		-0.7		1366	629694.9	4495598.7	629720.9	4495513.2			629709.6	4495550.2	
1367	1.7		0.5		-0.7		1367	629722.9	4495609.8	629749.6	4495521.8			629738.3	4495559.1	
1368	1.7		0.5		-0.6		1368	629751.4	4495619.2	629777.6	4495532.7			629767.3	4495566.8	
1369	1.6		0.5		-0.6		1369	629780.4	4495627.0	629806.0	4495542.6			629795.6	4495576.8	
1370	1.6		0.5		-0.7		1370	629809.0	4495636.0	629834.8	4495551.0			629823.9	4495586.9	
1371	1.6		0.4		-0.7		1371	629838.0	4495643.7	629863.6	4495559.3			629852.0	4495597.7	
1372	1.6		0.4		-0.7		1372	629866.7	4495652.3	629892.3	4495568.3			629880.1	4495608.1	
1373	1.7		0.5		-0.7		1373	629893.9	4495666.0	629920.4	4495579.0			629909.2	4495615.7	
1374	1.7		0.5		-0.6		1374	629921.8	4495677.3	629948.2	4495590.4			629938.4	4495622.8	
1375	1.6		0.5		-0.5		1375	629950.3	4495686.7	629976.0	4495602.3			629967.4	4495630.6	
1376	1.5		0.5		-0.5		1376	629979.2	4495695.0	630003.4	4495615.3			629995.2	4495642.2	
1377	1.5		0.5		-0.5		1377	630007.9	4495703.7	630031.0	4495627.7			630023.0	4495653.9	
1378	1.4		0.4		-0.5		1378	630036.7	4495712.2	630059.2	4495638.0			630050.9	4495665.4	

Table A-1. High-Water Shoreline Position Change – Rockaway Inlet to Moriches Inlet, New York

	High-Water Shoreline Position Change Rate (m/yr)						High-Water Shoreline Position (UTM Zone 18, NAD 1983)									
	1873/88 to			1933/34 to		1983 to	1873/88		1933/34		1983		1991/97			
Transect #	1933/34	1983	1991/97	1983	1991/97	1991/97	Transect #	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	
1379	1.4		0.4		-0.5		1379	630066.2	4495718.3	630087.8	4495646.9			630078.8	4495676.6	
1380	1.3		0.4		-0.5		1380	630095.5	4495724.8	630116.2	4495656.9			630107.3	4495686.1	
1381	1.2		0.3		-0.5		1381	630125.0	4495731.1	630144.4	4495667.0			630135.8	4495695.5	
1382	1.2		0.3		-0.5		1382	630154.0	4495738.6	630172.8	4495676.8			630164.3	4495704.9	
1383	1.1		0.3		-0.5		1383	630183.2	4495746.0	630200.7	4495688.1			630192.9	4495713.9	
1384	1.1		0.3		-0.4		1384	630211.4	4495756.2	630229.0	4495698.2			630221.8	4495722.1	
1385	1.1		0.3		-0.4		1385	630240.4	4495763.9	630257.6	4495707.4			630250.9	4495729.4	
1386	1.1		0.3		-0.4		1386	630269.5	4495771.5	630286.7	4495714.8			630279.9	4495737.1	
1387	1.1		0.3		-0.4		1387	630297.9	4495781.3	630315.5	4495723.2			630308.9	4495744.9	
1388	1.2		0.4		-0.4		1388	630325.7	4495792.9	630344.0	4495732.7			630338.1	4495752.1	
1389	1.3		0.5		-0.3		1389	630352.7	4495807.2	630372.8	4495741.0			630367.8	4495757.6	
1390	1.3		0.5		-0.3		1390	630380.8	4495817.9	630401.7	4495749.0			630396.8	4495765.2	
1391	1.3		0.5		-0.3		1391	630409.8	4495825.5	630430.4	4495757.9			630425.6	4495773.5	
1392	1.3		0.5		-0.3		1392	630438.8	4495833.4	630459.0	4495766.9			630453.7	4495784.3	
1393	1.2		0.4		-0.3		1393	630468.5	4495838.7	630487.9	4495775.0			630482.7	4495792.1	
1394	1.2		0.4		-0.4		1394	630498.3	4495844.0	630516.8	4495783.1			630510.9	4495802.5	
1395	1.1		0.4		-0.4		1395	630527.5	4495850.8	630545.5	4495791.7			630539.1	4495812.7	
1396	1.1		0.3		-0.4		1396	630557.2	4495856.5	630574.5	4495799.6			630567.1	4495823.8	
1397	1.1		0.3		-0.5		1397	630586.5	4495863.2	630603.6	4495806.8			630595.0	4495835.1	
1398	1.1		0.2		-0.5		1398	630615.8	4495869.9	630632.5	4495814.9			630623.7	4495844.0	
1399	1.1		0.2		-0.5		1399	630645.1	4495876.7	630661.6	4495822.4			630652.7	4495851.6	
1400	1.0		0.2		-0.5		1400	630675.2	4495880.7	630690.1	4495831.8			630681.6	4495859.7	
1401	0.9		0.2		-0.5		1401	630704.9	4495886.2	630718.7	4495841.0			630710.2	4495869.0	
1402	0.9		0.2		-0.5		1402	630734.1	4495893.4	630747.7	4495848.8			630739.1	4495877.0	
1403	0.9		0.2		-0.5		1403	630763.5	4495899.7	630777.6	4495853.4			630768.6	4495883.0	
1404	0.9		0.2		-0.6		1404	630793.4	4495904.6	630807.5	4495858.1			630798.1	4495889.0	
1405	0.9		0.1		-0.6		1405	630823.7	4495908.2	630837.4	4495863.1			630827.0	4495897.3	
1406	0.9		0.1		-0.7		1406	630853.8	4495912.1	630867.7	4495866.3			630855.6	4495906.4	
1407	0.9		0.0		-0.8		1407	630883.5	4495917.6	630898.2	4495869.3			630884.7	4495913.6	
1408	0.9		0.0		-0.9		1408	630913.6	4495921.8	630928.2	4495873.7			630913.6	4495921.7	
1409	0.9		-0.1		-1.0		1409	630943.6	4495926.3	630958.3	4495877.9			630942.1	4495931.0	
1410	0.9		-0.1		-1.0		1410	630973.6	4495930.6	630988.3	4495882.2			630971.6	4495937.2	
1411	0.9		-0.1		-1.0		1411	631003.4	4495935.9	631017.4	4495889.6			631001.5	4495941.9	
1412	0.8		-0.1		-1.0		1412	631033.4	4495940.4	631046.5	4495897.2			631030.8	4495948.9	
1413	0.8		-0.1		-0.9		1413	631063.5	4495944.3	631076.1	4495903.0			631060.7	4495953.7	
1414	0.7		-0.1		-0.9		1414	631093.6	4495948.4	631105.2	4495910.3			631090.5	4495958.6	
1415	0.7		-0.1		-0.8		1415	631123.6	4495952.8	631134.0	4495918.8			631121.0	4495961.4	
1416	0.6		-0.1		-0.8		1416	631153.5	4495957.7	631163.1	4495926.3			631150.7	4495967.1	
1417	0.6		-0.1		-0.8		1417	631183.9	4495961.0	631192.6	4495932.2			631179.8	4495974.4	
1418	0.5		-0.2		-0.8		1418	631214.1	4495964.8	631221.3	4495940.9			631208.6	4495982.9	
1419	0.4		-0.2		-0.7		1419	631244.2	4495968.7	631250.0	4495949.8			631237.8	4495989.8	
1420	0.3		-0.2		-0.7		1420	631274.0	4495973.8	631278.6	4495958.7			631266.4	4495999.1	
1421	0.2		-0.3		-0.8		1421	631304.1	4495978.0	631307.6	4495966.7			631294.6	4496009.3	
1422	0.1		-0.4		-0.8		1422	631334.5	4495981.2	631335.9	4495976.6			631322.7	4496020.2	
1423	-0.1		-0.4		-0.8		1423	631364.5	4495985.6	631363.5	4495989.1			631351.0	4496030.1	
1424	-0.2		-0.5		-0.7		1424	631394.9	4495988.8	631391.9	4495998.7			631379.6	4496039.3	
1425	-0.3		-0.6		-0.8		1425	631425.2	4495992.3	631420.5	4496007.6			631407.4	4496050.7	
1426	-0.4		-0.6		-0.7		1426	631454.9	4495997.8	631448.7	4496018.0			631436.4	4496058.6	
1427	-0.5		-0.6		-0.7		1427	631484.7	4496002.9	631477.4	4496026.8			631465.7	4496065.5	
1428	-0.5		-0.6		-0.7		1428	631514.4	4496008.4	631505.9	4496036.2			631494.4	4496074.1	
1429	-0.6		-0.6		-0.7		1429	631544.0	4496014.2	631534.6	4496045.0			631523.3	4496082.0	
1430	-0.7		-0.6		-0.6		1430	631573.1	4496021.6	631562.9	4496055.2			631552.4	4496089.7	
1431	-0.8		-0.7		-0.6		1431	631603.1	4496025.9	631591.0	4496065.9			631581.2	4496098.0	

Table A-1. High-Water Shoreline Position Change – Rockaway Inlet to Moriches Inlet, New York

	High-Water Shoreline Position Change Rate (m/yr)						High-Water Shoreline Position (UTM Zone 18, NAD 1983)									
	1873/88 to			1933/34 to		1983 to	1873/88		1933/34		1983		1991/97			
Transect #	1933/34	1983	1991/97	1983	1991/97	1991/97	Transect #	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	
1432	-0.9		-0.7		-0.6		1432	631633.3	4496029.6	631618.8	4496077.6			631609.7	4496107.5	
1433	-1.1		-0.8		-0.5		1433	631663.7	4496032.8	631646.6	4496089.1			631637.9	4496117.6	
1434	-1.2		-0.9		-0.5		1434	631694.0	4496036.2	631674.8	4496099.5			631666.2	4496127.9	
1435	-1.3		-0.9		-0.5		1435	631724.4	4496039.6	631703.8	4496107.4			631694.8	4496137.0	
1436	-1.5		-1.0		-0.6		1436	631755.1	4496041.5	631732.1	4496117.4			631722.4	4496149.2	
1437	-1.6		-1.1		-0.5		1437	631785.5	4496044.7	631760.0	4496128.8			631751.1	4496158.1	
1438	-1.8		-1.1		-0.5		1438	631815.9	4496048.0	631787.9	4496139.9			631779.5	4496167.7	
1439	-1.9		-1.2		-0.6		1439	631845.8	4496052.5	631816.4	4496149.6			631806.6	4496181.6	
1440	-1.9		-1.3		-0.7		1440	631875.2	4496059.0	631845.8	4496155.8			631834.8	4496192.0	
1441	-1.9		-1.3		-0.7		1441	631904.5	4496065.8	631875.1	4496162.7			631863.7	4496200.0	
1442	-1.9		-1.3		-0.8		1442	631933.9	4496072.3	631904.4	4496169.3			631892.1	4496210.0	
1443	-1.9		-1.3		-0.8		1443	631964.1	4496076.0	631934.0	4496175.2			631921.2	4496217.4	
1444	-1.9		-1.4		-0.8		1444	631993.9	4496081.2	631964.3	4496178.5			631950.5	4496224.2	
1445	-1.9		-1.4		-0.9		1445	632023.3	4496087.6	631994.1	4496183.8			631979.7	4496231.0	
1446	-1.8		-1.4		-0.9		1446	632052.7	4496094.2	632023.9	4496188.9			632009.2	4496237.2	
1447	-1.9		-1.4		-0.9		1447	632081.9	4496101.3	632052.8	4496196.9			632038.4	4496244.5	
1448	-1.8		-1.3		-0.9		1448	632110.9	4496108.9	632082.3	4496203.1			632068.1	4496249.9	
1449	-1.9		-1.3		-0.7		1449	632139.9	4496116.7	632109.5	4496216.7			632097.2	4496257.1	
1450	-1.9		-1.3		-0.7		1450	632167.3	4496129.8	632137.3	4496228.5			632125.6	4496266.8	
1451	-1.9		-1.3		-0.7		1451	632194.7	4496142.7	632165.5	4496238.7			632154.5	4496275.0	
1452	-1.8		-1.2		-0.7		1452	632222.3	4496155.0	632194.2	4496247.5			632183.1	4496284.0	
1453	-1.9		-1.3		-0.7		1453	632252.2	4496160.0	632223.0	4496256.0			632211.0	4496295.4	
1454	-2.0		-1.4		-0.8		1454	632283.0	4496161.6	632252.2	4496263.2			632238.7	4496307.3	
1455	-2.0		-1.5		-0.9		1455	632313.4	4496164.9	632281.4	4496270.2			632266.3	4496319.9	
1456	-2.0		-1.5		-1.0		1456	632342.3	4496172.8	632311.2	4496275.4			632294.2	4496331.0	
1457	-1.9		-1.5		-1.1		1457	632371.2	4496181.0	632341.0	4496280.3			632322.7	4496340.5	
1458	-1.8		-1.5		-1.2		1458	632399.0	4496192.8	632370.7	4496285.7			632350.6	4496352.1	
1459	-1.7		-1.5		-1.4		1459	632426.9	4496204.1	632400.7	4496290.2			632378.3	4496364.1	
1460	-1.5		-1.4		-1.4		1460	632453.4	4496219.9	632429.9	4496297.3			632407.1	4496372.5	
1461	-1.5		-1.4		-1.4		1461	632481.6	4496230.5	632458.4	4496306.7			632436.0	4496380.4	
1462	-1.5		-1.4		-1.3		1462	632509.4	4496242.0	632486.7	4496316.8			632464.9	4496388.7	
1463	-1.5	-1.7	-1.4	-2.0	-1.3	2.8	1463	632539.3	4496246.9	632516.1	4496323.4	632487.6	4496417.0	632494.1	4496395.6	
1464	-1.5	-1.7	-1.4	-2.0	-1.3	2.6	1464	632568.2	4496255.0	632545.4	4496330.1	632517.1	4496423.3	632523.2	4496403.1	
1465	-1.4	-1.7	-1.4	-2.0	-1.3	2.7	1465	632596.5	4496265.0	632574.2	4496338.3	632546.4	4496430.1	632552.6	4496409.5	
1466	-1.3	-1.6	-1.3	-2.0	-1.3	2.6	1466	632624.4	4496276.2	632603.4	4496345.5	632575.5	4496437.2	632581.7	4496417.0	
1467	-1.2	-1.6	-1.3	-1.9	-1.3	2.4	1467	632651.6	4496290.1	632632.3	4496353.5	632604.7	4496444.3	632610.2	4496426.3	
1468	-1.2	-1.5	-1.2	-1.9	-1.3	2.6	1468	632679.5	4496301.3	632661.1	4496361.8	632633.9	4496451.4	632639.9	4496431.7	
1469	-1.1	-1.5	-1.2	-2.0	-1.3	2.7	1469	632707.4	4496312.8	632690.4	4496368.8	632662.5	4496460.7	632668.7	4496440.2	
1470	-1.0	-1.5	-1.2	-2.0	-1.3	2.7	1470	632735.5	4496323.3	632719.3	4496376.7	632690.7	4496470.8	632697.0	4496450.1	
1471	-1.0	-1.5	-1.2	-2.1	-1.4	2.5	1471	632764.1	4496332.5	632748.5	4496383.8	632719.4	4496479.8	632725.2	4496460.6	
1472	-0.9	-1.5	-1.2	-2.1	-1.5	1.9	1472	632792.6	4496341.9	632777.9	4496390.5	632748.6	4496486.7	632753.0	4496472.4	
1473	-0.9	-1.5	-1.3	-2.0	-1.6	1.2	1473	632821.5	4496350.1	632806.7	4496398.6	632778.1	4496492.8	632781.0	4496483.3	
1474	-0.9	-1.4	-1.3	-2.0	-1.6	1.1	1474	632850.9	4496356.4	632836.5	4496403.8	632807.7	4496498.7	632810.2	4496490.5	
1475	-0.8	-1.5	-1.3	-2.2	-1.7	1.4	1475	632880.4	4496362.5	632868.0	4496403.3	632836.4	4496507.4	632839.6	4496496.9	
1476	-0.8	-1.5	-1.3	-2.3	-1.7	1.8	1476	632909.4	4496370.2	632897.6	4496409.0	632865.0	4496516.3	632869.2	4496502.7	
1477	-0.8	-1.5	-1.3	-2.3	-1.7	1.7	1477	632938.9	4496376.3	632926.9	4496416.1	632894.0	4496524.1	632898.0	4496510.9	
1478	-0.8	-1.5	-1.3	-2.3	-1.8	1.4	1478	632968.5	4496382.1	632956.0	4496423.4	632923.6	4496530.1	632926.9	4496519.1	
1479	-0.8	-1.5	-1.3	-2.2	-1.7	1.3	1479	632998.1	4496388.0	632985.3	4496430.2	632953.5	4496534.6	632956.4	4496525.1	
1480	-0.8	-1.4	-1.3	-2.2	-1.7	0.9	1480	633026.8	4496396.8	633014.5	4496437.3	632983.6	4496539.0	632985.6	4496532.1	
1481	-0.7	-1.4	-1.2	-2.1	-1.8	0.6	1481	633054.6	4496408.5	633043.7	4496444.4	633013.3	4496544.3	633014.6	4496539.9	
1482	-0.5	-1.3	-1.2	-2.1	-1.8	0.4	1482	633081.2	4496423.9	633072.9	4496451.4	633042.7	4496550.8	633043.7	4496547.6	
1483	-0.3	-1.1	-1.0	-2.1	-1.8	0.3	1483	633106.0	4496445.5	633101.9	4496459.0	633071.8	4496558.3	633072.4	4496556.3	
1484	-0.0	-1.0	-1.0	-2.1	-1.8	-0.1	1484	633131.2	4496465.9	633130.7	4496467.4	633100.6	4496566.5	633100.4	4496567.3	

Table A-1. High-Water Shoreline Position Change -- Rockaway Inlet to Moriches Inlet, New York.

High-Water Shoreline Position Change Rate (m/yr)						High-Water Shoreline Position (UTM Zone 18, NAD 1983)									
1873/88 to			1933/34 to		1983 to	1873/88		1933/34		1983		1991/97			
Transect #	1933/34	1983	1991/97	1983	1991/97	Transect #	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	
1485	0.3	-0.9	-0.8	-2.1	-1.9	-0.5	1485	633155.3	4496489.6	633159.9	4496474.7	633129.4	4496574.9	633128.2	4496578.9
1486				-2.2	-2.0	-1.0	1486			633188.8	4496482.6	633158.0	4496583.9	633155.8	4496591.2
1487				-2.2	-2.1	-1.4	1487			633217.9	4496489.9	633186.4	4496593.8	633183.1	4496604.5
1488				-2.3	-2.2	-1.5	1488			633247.5	4496496.0	633214.7	4496603.9	633211.2	4496615.3
1489				-2.3	-2.2	-1.5	1489			633276.1	4496504.8	633243.0	4496614.0	633239.5	4496625.5
1490				-2.4	-2.2	-1.2	1490			633304.8	4496513.5	633271.3	4496623.8	633268.6	4496632.9
1491				-2.4	-2.1	-0.6	1491			633333.1	4496523.7	633299.2	4496635.4	633297.8	4496639.9
1492				-2.4	-2.1	-0.2	1492			633361.3	4496534.0	633326.6	4496648.4	633326.1	4496650.1
1493				-2.5	-2.2	-0.2	1493			633389.8	4496543.4	633354.6	4496659.4	633354.1	4496661.1
1494				-2.5	-2.1	0.0	1494			633418.0	4496553.9	633382.6	4496670.3	633382.7	4496670.1
1495				-2.5	-2.1	0.5	1495			633446.4	4496563.8	633410.4	4496682.2	633411.6	4496678.2
1496				-2.6	-2.1	0.9	1496			633474.9	4496573.1	633437.7	4496695.5	633439.8	4496688.4
1497	0.4	-1.1	-0.9	-2.7	-2.1	1.4	1497	633496.7	4496604.4	633503.2	4496582.9	633464.6	4496710.0	633467.9	4496699.2
1498	0.5	-1.1	-0.9	-2.8	-2.1	1.7	1498	633524.4	4496616.4	633531.6	4496592.9	633492.3	4496722.2	633496.3	4496709.1
1499	0.5	-1.1	-0.9	-2.8	-2.1	2.1	1499	633552.6	4496626.8	633560.0	4496602.6	633520.2	4496733.4	633525.2	4496717.0
1500	0.4	-1.1	-0.9	-2.8	-2.1	2.2	1500	633581.1	4496636.4	633587.6	4496615.0	633548.3	4496744.1	633553.5	4496727.1
1501	0.4	-1.1	-0.9	-2.7	-2.1	2.0	1501	633609.6	4496645.8	633615.6	4496625.8	633576.6	4496754.2	633581.3	4496738.9
1502	0.3	-1.1	-0.9	-2.7	-2.1	1.8	1502	633639.0	4496652.1	633643.0	4496638.8	633604.9	4496764.4	633609.1	4496750.6
1503	0.1	-1.2	-1.0	-2.6	-2.0	1.8	1503	633667.9	4496660.2	633668.5	4496654.8	633632.7	4496775.8	633637.0	4496761.8
1504	0.1	-1.2	-1.0	-2.7	-2.0	2.1	1504	633695.7	4496671.7	633697.9	4496664.6	633660.2	4496788.7	633665.0	4496773.0
1505	0.1	-1.2	-1.0	-2.7	-2.0	2.3	1505	633723.6	4496683.4	633725.6	4496676.8	633687.6	4496801.6	633693.0	4496783.9
1506	0.1	-1.2	-1.0	-2.6	-2.0	1.9	1506	633751.1	4496695.8	633753.2	4496689.1	633716.1	4496811.2	633720.5	4496796.6
1507	0.0	-1.2	-1.0	-2.5	-2.0	1.4	1507	633780.0	4496704.0	633780.4	4496702.6	633744.6	4496820.5	633747.9	4496809.5
1508	-0.1	-1.2	-1.0	-2.4	-1.9	1.2	1508	633809.0	4496711.7	633807.5	4496716.7	633773.2	4496829.6	633776.0	4496820.4
1509	-0.2	-1.2	-1.1	-2.4	-1.9	0.9	1509	633838.1	4496719.2	633834.9	4496729.8	633801.4	4496839.9	633803.5	4496833.0
1510	-0.3	-1.3	-1.1	-2.3	-1.8	0.9	1510	633867.0	4496727.1	633862.1	4496743.5	633829.8	4496849.8	633831.8	4496843.2
1511	-0.4	-1.3	-1.1	-2.2	-1.8	0.9	1511	633895.9	4496735.4	633889.7	4496755.6	633857.8	4496860.7	633859.8	4496854.0
1512	-0.5	-1.3	-1.2	-2.2	-1.8	0.6	1512	633924.9	4496743.1	633917.9	4496766.1	633886.1	4496870.6	633887.6	4496865.9
1513	-0.5	-1.3	-1.2	-2.2	-1.9	0.3	1513	633953.3	4496752.7	633945.8	4496777.3	633914.6	4496880.1	633915.2	4496878.1
1514	-0.5	-1.3	-1.2	-2.2	-1.9	0.0	1514	633982.5	4496759.9	633974.0	4496787.7	633943.3	4496888.9	633943.3	4496889.0
1515	-0.6	-1.3	-1.2	-2.1	-1.8	0.1	1515	634011.1	4496768.9	634002.2	4496798.3	633971.8	4496898.1	633972.0	4496897.6
1516	-0.6	-1.3	-1.2	-2.1	-1.8	-0.0	1516	634039.3	4496779.4	634030.4	4496808.6	634000.5	4496907.2	634000.4	4496907.5
1517	-0.6	-1.3	-1.2	-2.0	-1.8	-0.0	1517	634067.3	4496790.4	634057.9	4496821.2	634028.9	4496916.8	634028.8	4496917.1
1518	-0.7	-1.3	-1.2	-2.0	-1.7	0.0	1518	634096.3	4496798.0	634086.2	4496831.4	634057.3	4496926.4	634057.4	4496926.2
1519	-0.6	-1.3	-1.2	-2.0	-1.7	0.3	1519	634124.6	4496808.0	634114.7	4496840.7	634085.8	4496935.7	634086.6	4496933.4
1520	-0.5	-1.3	-1.1	-2.1	-1.7	0.8	1520	634152.3	4496820.1	634144.4	4496846.3	634114.2	4496945.6	634115.9	4496939.8
1521	-0.2	-1.1	-0.9	-2.1	-1.7	1.2	1521	634175.7	4496846.3	634173.0	4496855.3	634142.5	4496955.8	634145.3	4496946.5
1522				-2.1	-1.7	1.4	1522			634201.5	4496864.7	634171.0	4496965.1	634174.2	4496954.5
1523				-2.2	-1.7	1.4	1523			634230.2	4496873.5	634199.0	4496976.0	634202.3	4496965.1
1524				-2.3	-1.7	1.5	1524			634259.2	4496881.0	634227.2	4496986.3	634230.6	4496975.2
1525				-2.3	-1.8	1.3	1525			634288.2	4496888.7	634256.2	4496994.2	634259.3	4496984.0
1526				-2.3	-1.8	1.4	1526			634317.3	4496896.2	634285.2	4497002.1	634288.3	4496991.6
1527				-2.3	-1.8	1.6	1527			634346.5	4496903.4	634313.8	4497011.0	634317.5	4496998.9
1528				-2.3	-1.8	1.7	1528			634375.9	4496910.0	634342.9	4497018.3	634346.9	4497005.3
1529				-2.2	-1.8	1.2	1529			634404.1	4496920.2	634372.4	4497024.5	634375.2	4497015.4
1530				-2.2	-1.7	0.8	1530			634432.4	4496930.3	634401.6	4497031.6	634403.5	4497025.2
1531				-2.1	-1.7	0.6	1531			634460.1	4496942.4	634430.2	4497040.8	634431.6	4497036.2
1532				-2.0	-1.7	0.4	1532			634487.5	4496955.4	634458.4	4497050.9	634459.4	4497047.8
1533				-2.0	-1.6	0.6	1533			634515.1	4496967.6	634487.0	4497060.2	634488.4	4497055.6
1534				-1.9	-1.6	0.2	1534			634542.8	4496979.6	634515.5	4497069.6	634515.9	4497068.3
1535				-1.9	-1.6	-0.2	1535			634570.3	4496992.2	634543.6	4497080.4	634543.1	4497081.7
1536				-1.9	-1.7	-0.6	1536			634598.1	4497004.0	634571.3	4497092.3	634569.9	4497096.9
1537				-1.8	-1.8	-1.4	1537			634625.1	4497018.2	634599.0	4497104.2	634595.7	4497115.0

Table A-1. High-Water Shoreline Position Change – Rockaway Inlet to Moriches Inlet, New York

	High-Water Shoreline Position Change Rate (m/yr)						High-Water Shoreline Position (UTM Zone 18, NAD 1983)								
	1873/88 to			1933/34 to		1983 to	1873/88		1933/34		1983		1991/97		
Transect #	1933/34	1983	1991/97	1983	1991/97	1991/97	Transect #	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)
1538				-1.8	-1.9	-2.3	1538			634652.3	4497032.0	634627.1	4497115.0	634621.7	4497132.8
1539				-1.7	-1.8	-2.1	1539			634679.3	4497046.3	634655.0	4497126.2	634650.2	4497142.2
1540				-1.7	-1.7	-2.1	1540			634706.7	4497059.5	634683.1	4497137.1	634678.2	4497153.3
1541				-1.6	-1.6	-1.8	1541			634734.2	4497072.2	634711.1	4497148.2	634707.0	4497161.7
1542				-1.6	-1.6	-1.7	1542			634761.7	4497084.7	634739.1	4497159.2	634735.2	4497172.0
1543				-1.6	-1.5	-1.4	1543			634789.3	4497097.0	634767.2	4497169.8	634764.0	4497180.3
1544				-1.5	-1.5	-1.6	1544			634817.0	4497109.1	634795.5	4497180.0	634791.7	4497192.5
1545	-4.2	-2.9	-2.8	-1.5	-1.5	-1.6	1545	634911.7	4496900.7	634845.1	4497120.0	634823.6	4497190.6	634819.9	4497202.8
1546	-4.4	-3.0	-2.9	-1.5	-1.5	-1.2	1546	634942.4	4496902.9	634873.3	4497130.2	634851.7	4497201.5	634848.8	4497210.8
1547	-4.5	-3.1	-3.0	-1.6	-1.5	-0.9	1547	634973.5	4496903.6	634902.9	4497135.9	634879.6	4497212.9	634877.4	4497219.9
1548	-4.6	-3.3	-3.1	-1.8	-1.6	-0.8	1548	635004.4	4496905.1	634932.3	4497142.4	634907.2	4497225.1	634905.2	4497231.6
1549	-4.7	-3.4	-3.2	-1.9	-1.7	-0.5	1549	635035.6	4496905.7	634961.5	4497149.5	634935.1	4497236.4	634933.9	4497240.2
1550	-4.8	-3.5	-3.2	-2.0	-1.7	-0.1	1550	635066.7	4496906.4	634991.3	4497154.8	634963.3	4497246.8	634963.1	4497247.5
1551	-4.9	-3.6	-3.3	-2.1	-1.7	0.4	1551	635097.6	4496908.0	635021.1	4497159.8	634991.5	4497257.3	634992.3	4497254.5
1552	-5.0	-3.7	-3.3	-2.2	-1.8	0.9	1552	635129.5	4496906.1	635051.4	4497163.3	635019.6	4497267.8	635021.8	4497260.7
1553	-5.1	-3.8	-3.4	-2.4	-1.9	1.3	1553	635161.7	4496903.4	635081.9	4497166.2	635047.8	4497278.2	635050.7	4497268.7
1554	-5.3	-4.0	-3.6	-2.5	-2.0	1.5	1554	635194.1	4496900.1	635111.7	4497171.1	635075.9	4497288.8	635079.3	4497277.8
1555	-5.5	-4.1	-3.7	-2.6	-2.1	1.2	1555	635226.4	4496896.9	635140.8	4497178.5	635104.0	4497299.7	635106.9	4497290.2
1556	-5.7	-4.2	-3.9	-2.6	-2.1	0.9	1556	635258.3	4496895.1	635168.3	4497191.4	635132.0	4497310.8	635134.0	4497304.1
1557	-6.0	-4.4	-4.0	-2.5	-2.1	0.6	1557	635290.1	4496893.6	635196.2	4497202.7	635160.0	4497321.8	635161.4	4497317.1
1558	-6.2	-4.5	-4.1	-2.6	-2.1	0.4	1558	635321.5	4496893.3	635224.5	4497212.8	635188.1	4497332.4	635189.0	4497329.6
1559	-6.3	-4.5	-4.2	-2.6	-2.2	0.3	1559	635351.5	4496897.9	635252.7	4497223.2	635216.2	4497343.2	635216.9	4497341.0
1560	-6.2	-4.5	-4.1	-2.6	-2.2	0.4	1560	635378.2	4496913.3	635281.1	4497232.9	635244.2	4497354.1	635245.2	4497350.9
1561	-6.1	-4.4	-4.1	-2.6	-2.1	0.8	1561	635404.6	4496929.5	635308.6	4497245.3	635272.3	4497365.0	635274.1	4497359.1
1562	-6.0	-4.4	-4.0	-2.5	-2.0	1.1	1562	635431.3	4496944.7	635336.5	4497256.9	635300.6	4497375.0	635303.1	4497366.7
1563	-6.0	-4.3	-3.9	-2.4	-1.9	1.3	1563	635458.2	4496959.6	635363.6	4497270.8	635329.3	4497383.8	635332.2	4497374.1
1564	-6.0	-4.3	-3.8	-2.4	-1.8	1.5	1564	635485.0	4496974.5	635391.5	4497282.1	635357.5	4497394.0	635361.1	4497382.3
1565	-5.9	-4.2	-3.8	-2.3	-1.8	1.5	1565	635511.8	4496989.5	635418.6	4497296.4	635385.8	4497404.2	635389.4	4497392.5
1566	-5.8	-4.1	-3.7	-2.3	-1.8	1.3	1566	635538.0	4497006.3	635446.9	4497306.2	635414.3	4497413.5	635417.2	4497403.9
1567	-5.7	-4.1	-3.7	-2.3	-1.8	1.5	1567	635565.0	4497020.6	635475.5	4497315.4	635442.6	4497423.7	635446.0	4497412.6
1568	-5.8	-4.1	-3.7	-2.2	-1.7	1.4	1568	635593.3	4497030.7	635503.0	4497328.0	635471.1	4497433.0	635474.5	4497422.0
1569	-5.8	-4.1	-3.7	-2.2	-1.7	1.4	1569	635621.7	4497040.5	635530.2	4497341.7	635499.6	4497442.3	635502.8	4497431.9
1570	-5.9	-4.1	-3.7	-2.1	-1.6	1.2	1570	635650.4	4497049.4	635557.3	4497355.7	635527.9	4497452.6	635530.7	4497443.3
1571	-6.0	-4.1	-3.7	-2.0	-1.5	1.2	1571	635679.2	4497057.7	635584.6	4497369.0	635556.3	4497462.3	635559.1	4497452.9
1572	-6.1	-4.2	-3.8	-2.0	-1.5	1.4	1572	635709.5	4497061.1	635613.2	4497378.2	635584.6	4497472.1	635587.8	4497461.6
1573	-6.1	-4.2	-3.8	-2.1	-1.5	2.0	1573	635738.2	4497069.8	635642.9	4497383.5	635612.8	4497482.6	635617.3	4497467.7
1574	-6.0	-4.2	-3.7	-2.2	-1.6	1.8	1574	635765.6	4497082.9	635672.2	4497390.1	635641.3	4497492.0	635645.5	4497478.0
1575	-5.9	-4.1	-3.7	-2.2	-1.6	1.9	1575	635793.6	4497094.0	635701.6	4497396.9	635670.1	4497500.4	635674.5	4497485.9
1576	-5.8	-4.1	-3.7	-2.3	-1.7	2.1	1576	635822.4	4497102.5	635730.8	4497403.9	635698.4	4497510.3	635703.4	4497493.9
1577	-5.9	-4.2	-3.7	-2.3	-1.7	2.1	1577	635852.5	4497106.5	635759.9	4497411.2	635726.8	4497520.1	635731.7	4497504.1
1578	-6.0	-4.3	-3.8	-2.4	-1.7	2.4	1578	635882.8	4497109.9	635789.1	4497418.3	635754.8	4497531.4	635760.3	4497513.1
1579	-6.1	-4.4	-3.8	-2.5	-1.7	3.1	1579	635913.2	4497113.1	635818.3	4497425.4	635782.3	4497543.9	635789.5	4497520.1
1580	-5.8	-4.3	-3.8	-2.6	-1.8	3.2	1580	635939.0	4497131.5	635847.3	4497433.2	635810.8	4497553.4	635818.1	4497529.2
1581	-5.7	-4.2	-3.7	-2.5	-1.7	2.8	1581	635964.0	4497152.4	635875.1	4497444.9	635839.7	4497561.5	635846.2	4497540.0
1582	-5.6	-4.1	-3.6	-2.4	-1.7	2.7	1582	635990.4	4497168.5	635902.9	4497456.6	635868.6	4497569.4	635874.9	4497548.8
1583	-5.5	-4.0	-3.5	-2.4	-1.7	2.7	1583	636017.2	4497183.7	635930.9	4497467.7	635897.1	4497578.9	635903.3	4497558.6
1584	-5.5	-4.0	-3.5	-2.4	-1.7	2.6	1584	636044.6	4497196.5	635958.9	4497478.6	635925.4	4497589.0	635931.4	4497569.3
1585	-5.5	-4.0	-3.5	-2.3	-1.6	2.7	1585	636072.0	4497209.4	635986.1	4497492.3	635953.6	4497599.4	635959.8	4497579.0
1586	-5.4	-3.9	-3.5	-2.3	-1.6	2.7	1586	636099.0	4497224.1	636014.2	4497502.9	635981.5	4497610.7	635987.8	4497589.9
1587	-5.4	-3.9	-3.4	-2.2	-1.5	2.7	1587	636126.5	4497236.5	636041.7	4497515.9	636010.2	4497619.5	636016.3	4497599.3
1588	-5.5	-3.9	-3.4	-2.1	-1.5	2.7	1588	636155.5	4497244.2	636069.2	4497528.4	636039.1	4497627.6	636045.2	4497607.3
1589	-5.6	-3.9	-3.4	-2.1	-1.4	2.6	1589	636184.3	4497252.7	636096.9	4497540.4	636067.7	4497636.6	636073.8	4497616.4
1590	-5.6	-3.9	-3.5	-2.1	-1.4	2.3	1590	636213.8	4497258.9	636125.4	4497549.8	636096.2	4497645.8	636101.6	4497628.2

Table A-1. High-Water Shoreline Position Change – Rockaway Inlet to Moriches Inlet, New York

High-Water Shoreline Position Change Rate (m/yr)						High-Water Shoreline Position (UTM Zone 18, NAD 1983)								
1873/88 to			1933/34 to		1983 to	1873/88		1933/34		1983		1991/97		
Transect #	1933/34	1983	1991/97	1983	1991/97	1991/97	Transect #	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)
1591	-5.7	-3.9	-3.5	-2.0	-1.4	1.9	1591	636242.4	4497267.8	636153.1	4497561.8	636125.0	4497654.4	636129.5	4497639.6
1592	-5.7	-3.9	-3.5	-2.0	-1.4	1.8	1592	636271.5	4497275.2	636181.6	4497571.1	636153.6	4497663.4	636157.7	4497649.7
1593	-5.8	-4.0	-3.6	-2.0	-1.4	1.8	1593	636300.8	4497282.0	636210.1	4497580.5	636182.3	4497672.2	636186.4	4497658.7
1594	-5.9	-4.0	-3.6	-1.9	-1.4	1.5	1594	636330.0	4497289.3	636237.1	4497594.9	636210.5	4497682.5	636213.9	4497671.2
1595	-6.0	-4.0	-3.6	-1.9	-1.4	1.6	1595	636358.7	4497298.1	636264.2	4497608.9	636237.9	4497695.6	636241.7	4497683.1
1596	-6.1	-4.1	-3.6	-1.8	-1.3	1.9	1596	636387.2	4497307.3	636291.7	4497621.7	636265.8	4497707.0	636270.2	4497692.3
1597	-6.2	-4.0	-3.7	-1.7	-1.3	1.3	1597	636415.7	4497316.8	636318.7	4497635.8	636294.6	4497715.4	636297.5	4497705.8
1598	-6.2	-4.0	-3.7	-1.6	-1.3	1.0	1598	636444.0	4497326.7	636346.6	4497647.4	636323.3	4497724.0	636325.7	4497716.0
1599	-6.3	-4.0	-3.7	-1.5	-1.2	0.8	1599	636472.5	4497336.2	636373.7	4497661.2	636351.8	4497733.5	636353.6	4497727.6
1600	-6.4	-4.1	-3.7	-1.5	-1.2	0.8	1600	636501.2	4497344.8	636400.9	4497675.0	636380.0	4497743.9	636381.7	4497738.2
1601	-6.5	-4.1	-3.7	-1.4	-1.1	0.7	1601	636529.4	4497355.3	636428.2	4497688.3	636407.9	4497755.1	636409.5	4497749.9
1602	-6.5	-4.1	-3.7	-1.4	-1.1	0.6	1602	636557.9	4497364.7	636455.6	4497701.4	636435.7	4497766.9	636437.1	4497762.4
1603	-6.6	-4.1	-3.8	-1.3	-1.0	0.5	1603	636585.8	4497375.9	636481.6	4497719.1	636463.4	4497779.0	636464.6	4497775.0
1604	-6.7	-4.1	-3.8	-1.2	-1.0	0.8	1604	636613.8	4497387.2	636508.6	4497733.3	636491.0	4497791.3	636492.9	4497785.0
1605	-6.7	-4.1	-3.8	-1.2	-0.9	1.0	1605	636641.7	4497398.4	636536.2	4497745.6	636518.6	4497803.7	636520.8	4497796.3
1606	-6.8	-4.1	-3.8	-1.2	-0.9	0.8	1606	636669.6	4497409.7	636563.7	4497758.4	636546.7	4497814.5	636548.6	4497808.2
1607	-6.8	-4.1	-3.8	-1.1	-0.8	1.0	1607	636697.6	4497421.0	636590.4	4497773.6	636574.3	4497826.6	636576.6	4497819.2
1608	-6.9	-4.2	-3.8	-1.2	-0.8	1.4	1608	636725.5	4497432.1	636617.7	4497787.2	636600.8	4497842.5	636604.2	4497831.5
1609	-6.8	-4.2	-3.8	-1.3	-0.9	1.7	1609	636753.5	4497443.2	636646.2	4497796.4	636628.0	4497856.3	636631.9	4497843.5
1610	-6.8	-4.2	-3.8	-1.4	-0.9	1.8	1610	636781.5	4497454.2	636674.2	4497807.3	636655.0	4497870.7	636659.2	4497856.7
1611	-6.8	-4.3	-3.8	-1.5	-0.9	2.5	1611	636809.3	4497466.0	636702.6	4497817.4	636681.8	4497885.5	636687.5	4497866.8
1612	-6.7	-4.3	-3.8	-1.6	-0.9	2.8	1612	636836.9	4497478.4	636731.1	4497826.6	636708.9	4497899.7	636715.5	4497878.0
1613	-6.7	-4.3	-3.8	-1.7	-1.0	2.9	1613	636864.4	4497491.1	636759.9	4497835.0	636736.1	4497913.2	636742.8	4497891.3
1614	-6.6	-4.3	-3.8	-1.8	-1.1	2.9	1614	636892.3	4497502.6	636788.6	4497843.9	636763.3	4497927.1	636769.9	4497905.2
1615	-6.6	-4.3	-3.8	-1.8	-1.1	3.4	1615	6369204	4497513.2	636816.3	4497855.9	636790.6	4497940.3	636798.4	4497914.6
1616	-6.6	-4.4	-3.8	-1.9	-1.2	3.1	1616	636948.5	4497523.7	636844.8	4497865.1	636818.1	4497952.9	636825.2	4497929.5
1617	-6.6	-4.4	-3.8	-1.9	-1.2	3.3	1617	636976.7	4497534.3	636873.4	4497874.3	636846.2	4497963.6	636853.8	4497938.7
1618	-6.6	-4.4	-3.8	-1.9	-1.2	3.4	1618	637005.0	4497544.4	636901.7	4497884.3	636874.1	4497975.3	636882.0	4497949.1
1619	-6.6	-4.4	-3.8	-2.0	-1.2	3.7	1619	637033.3	4497554.2	636929.9	4497894.6	636901.5	4497988.2	636910.2	4497959.6
1620	-6.6	-4.4	-3.9	-2.0	-1.2	3.7	1620	637062.1	4497562.8	636958.1	4497905.2	636929.0	4498000.7	636937.6	4497972.3
1621	-6.7	-4.5	-3.9	-2.1	-1.3	3.7	1621	637091.1	4497570.4	636986.1	4497916.2	636956.6	4498013.1	636965.3	4497984.7
1622	-6.8	-4.5	-4.0	-2.0	-1.2	3.7	1622	637120.1	4497578.1	637013.2	4497930.2	636984.2	4498025.7	636992.8	4497997.1
1623	-6.8	-4.6	-4.0	-2.1	-1.3	3.6	1623	637148.0	4497589.5	637041.0	4497941.9	637011.6	4498038.6	637020.1	4498010.7
1624	-6.9	-4.6	-4.0	-2.1	-1.3	3.4	1624	637176.1	4497600.4	637068.6	4497954.2	637039.1	4498051.3	637046.9	4498025.4
1625	-6.9	-4.6	-4.0	-2.1	-1.3	3.4	1625	637204.3	4497610.8	637096.7	4497964.9	637066.8	4498063.2	637074.8	4498037.1
1626	-6.9	-4.6	-4.0	-2.1	-1.3	3.3	1626	637232.4	4497621.4	637124.5	4497976.6	637095.0	4498073.7	637102.7	4498048.4
1627	-6.9	-4.6	-4.0	-2.1	-1.3	3.1	1627	637260.4	4497632.4	637152.3	4497988.1	637123.2	4498084.0	637130.5	4498060.1
1628	-6.9	-4.6	-4.0	-2.0	-1.3	3.1	1628	637288.4	4497643.4	637179.5	4498001.8	637150.7	4498096.5	637158.0	4498072.5
1629	-7.0	-4.6	-4.0	-2.0	-1.3	3.3	1629	637316.2	4497655.2	637206.7	4498015.6	637178.3	4498109.1	637185.9	4498084.2
1630	-7.0	-4.6	-4.1	-2.1	-1.3	3.1	1630	637344.2	4497666.3	637234.9	4498025.8	637205.7	4498122.0	637213.0	4498098.1
1631	-6.9	-4.7	-4.1	-2.2	-1.4	3.4	1631	637372.2	4497677.3	637263.7	4498034.4	637232.6	4498136.9	637240.5	4498110.6
1632	-6.9	-4.7	-4.1	-2.2	-1.4	3.4	1632	637400.2	4497688.3	637291.7	4498045.5	637260.3	4498148.6	637268.1	4498123.0
1633	-6.9	-4.7	-4.1	-2.2	-1.4	3.3	1633	637428.2	4497699.5	637319.6	4498056.8	637288.3	4498159.9	637295.9	4498134.9
1634	-6.9	-4.7	-4.1	-2.2	-1.5	3.3	1634	637456.1	4497710.8	637347.9	4498066.9	637316.0	4498171.8	637323.8	4498146.2
1635	-7.0	-4.7	-4.1	-2.2	-1.4	3.4	1635	637484.0	4497722.0	637374.6	4498082.0	637343.9	4498183.3	637351.8	4498157.1
1636	-7.0	-4.7	-4.1	-2.1	-1.3	3.4	1636	637511.8	4497733.7	637401.7	4498096.3	637371.9	4498194.2	637379.8	4498168.4
1637	-7.0	-4.7	-4.1	-2.2	-1.4	3.8	1637	637539.6	4497745.5	637430.4	4498104.7	637399.1	4498207.8	637408.0	4498178.5
1638	-6.9	-4.7	-4.1	-2.3	-1.4	4.2	1638	637567.2	4497757.7	637459.1	4498113.5	637426.5	4498221.0	637436.3	4498188.6
1639	-6.8	-4.7	-4.1	-2.3	-1.4	4.1	1639	637594.8	4497770.2	637487.8	4498122.4	637454.4	4498232.3	637464.0	4498200.8
1640	-6.8	-4.7	-4.1	-2.3	-1.4	4.0	1640	637622.4	4497782.4	637515.1	4498135.9	637482.4	4498243.3	637491.7	4498212.8
1641	-6.9	-4.7	-4.0	-2.3	-1.4	4.0	1641	637649.7	4497795.8	637542.2	4498149.7	637510.1	4498255.3	637519.4	4498224.7
1642	-6.8	-4.6	-4.0	-2.3	-1.4	4.1	1642	637676.8	4497809.8	637569.8	4498161.9	637537.8	4498267.5	637547.2	4498236.3
1643	-6.8	-4.6	-4.0	-2.3	-1.3	4.2	1643	637704.0	4497823.5	637597.6	4498173.7	637565.5	4498279.3	637575.4	4498247.0

Table A-1. High-Water Shoreline Position Change – Rockaway Inlet to Moriches Inlet, New York

	High-Water Shoreline Position Change Rate (m/yr)						High-Water Shoreline Position (UTM Zone 18, NAD 1983)								
	1873/88 to			1933/34 to		1983 to		1873/88		1933/34		1983		1991/97	
Transect #	1933/34	1983	1991/97	1983	1991/97	1991/97	Transect #	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)
1644	-6.8	-4.6	-4.0	-2.2	-1.4	4.1	1644	637731.6	4497835.8	637625.2	4498186.2	637593.2	4498291.3	637602.9	4498259.6
1645	-6.8	-4.6	-4.0	-2.2	-1.4	4.0	1645	637759.4	4497847.7	637652.7	4498198.8	637620.8	4498303.8	637630.2	4498273.0
1646	-6.7	-4.6	-4.0	-2.3	-1.4	4.2	1646	637786.7	4497860.8	637681.4	4498207.6	637648.5	4498315.7	637658.3	4498283.5
1647	-6.6	-4.6	-3.9	-2.3	-1.4	4.4	1647	637813.4	4497876.3	637709.8	4498217.3	637676.4	4498327.1	637686.5	4498293.8
1648	-6.4	-4.5	-3.9	-2.4	-1.5	4.5	1648	637839.8	4497892.7	637738.8	4498224.9	637704.3	4498338.5	637714.8	4498304.0
1649	-6.3	-4.5	-3.8	-2.5	-1.5	4.4	1649	637866.0	4497909.7	637767.3	4498234.5	637732.2	4498349.8	637742.5	4498315.9
1650	-6.3	-4.4	-3.8	-2.4	-1.4	4.3	1650	637892.5	4497925.5	637794.4	4498248.5	637760.4	4498360.3	637770.5	4498327.2
1651	-6.4	-4.4	-3.8	-2.2	-1.4	4.0	1651	637920.6	4497936.4	637820.3	4498266.3	637788.5	4498371.1	637797.8	4498340.4
1652	-6.5	-4.4	-3.8	-2.1	-1.3	4.1	1652	637948.1	4497948.8	637846.1	4498284.7	637815.8	4498384.5	637825.2	4498353.4
1653	-6.6	-4.4	-3.8	-2.0	-1.2	3.8	1653	637975.6	4497961.5	637872.2	4498301.8	637843.7	4498395.8	637852.5	4498366.7
1654	-6.6	-4.4	-3.8	-1.9	-1.1	3.7	1654	638003.4	4497973.3	637899.1	4498316.5	637871.8	4498406.5	637880.5	4498377.9
1655	-6.7	-4.4	-3.8	-1.9	-1.1	4.3	1655	638031.2	4497984.9	637926.8	4498328.6	637899.3	4498419.2	637909.2	4498386.5
1656	-6.6	-4.4	-3.8	-2.0	-1.1	4.7	1656	638059.1	4497996.5	637955.2	4498338.4	637926.8	4498431.8	637937.6	4498396.1
1657	-6.6	-4.4	-3.7	-2.0	-1.0	5.2	1657	638086.7	4498008.6	637983.6	4498348.0	637954.5	4498443.8	637966.5	4498404.4
1658	-6.5	-4.4	-3.7	-2.1	-1.0	5.2	1658	638114.8	4498019.5	638012.1	4498357.5	637982.8	4498454.0	637995.0	4498413.9
1659	-6.5	-4.4	-3.7	-2.1	-1.0	5.3	1659	638142.6	4498031.3	638040.5	4498367.3	638010.9	4498464.6	638023.2	4498424.1
1660	-6.5	-4.4	-3.7	-2.1	-1.0	5.7	1660	638170.2	4498043.5	638067.9	4498380.2	638038.6	4498476.7	638051.8	4498433.1
1661	-6.5	-4.4	-3.6	-2.1	-0.9	6.2	1661	638197.9	4498055.5	638096.0	4498391.0	638066.1	4498489.3	638080.5	4498441.8
1662	-6.5	-4.4	-3.6	-2.1	-0.9	6.2	1662	638225.6	4498067.7	638123.6	4498403.2	638093.7	4498501.7	638108.1	4498454.1
1663	-6.5	-4.4	-3.6	-2.1	-0.9	6.1	1663	638252.9	4498080.9	638150.9	4498416.5	638121.5	4498513.5	638135.7	4498466.7
1664	-6.5	-4.4	-3.6	-2.1	-0.9	6.4	1664	638279.9	4498095.2	638178.7	4498428.3	638148.8	4498526.8	638163.6	4498478.1
1665	-6.5	-4.4	-3.6	-2.1	-0.9	6.5	1665	638307.4	4498107.9	638205.5	4498443.1	638175.6	4498541.6	638190.8	4498491.5
1666	-6.5	-4.4	-3.6	-2.1	-0.9	6.4	1666	638334.9	4498120.5	638232.4	4498458.0	638203.0	4498554.8	638217.8	4498506.1
1667	-6.6	-4.4	-3.6	-2.0	-0.8	6.1	1667	638362.5	4498132.9	638258.9	4498474.0	638231.1	4498565.6	638245.3	4498518.6
1668	-6.6	-4.4	-3.7	-2.0	-0.9	5.9	1668	638390.5	4498143.9	638287.4	4498483.2	638258.9	4498577.1	638272.6	4498531.9
1669	-6.7	-4.4	-3.7	-1.9	-0.8	5.7	1669	638418.3	4498155.7	638313.3	4498501.4	638286.7	4498588.8	638299.9	4498545.3
1670	-6.8	-4.4	-3.7	-1.8	-0.8	5.5	1670	638446.1	4498167.5	638340.2	4498516.0	638314.5	4498600.6	638327.3	4498558.5
1671	-6.7	-4.4	-3.7	-1.8	-0.8	5.2	1671	638473.8	4498179.5	638368.7	4498525.3	638342.8	4498610.7	638354.8	4498571.0
1672	-6.7	-4.4	-3.7	-1.8	-0.9	4.6	1672	638501.5	4498191.5	638396.7	4498536.5	638371.1	4498620.8	638381.9	4498585.2
1673	-6.7	-4.4	-3.7	-1.8	-0.9	4.9	1673	638529.4	4498202.8	638424.3	4498548.9	638398.5	4498633.7	638409.8	4498596.4
1674	-6.7	-4.4	-3.7	-1.8	-0.9	5.1	1674	638557.1	4498214.7	638451.7	4498561.8	638425.7	4498647.2	638437.7	4498607.9
1675	-6.8	-4.4	-3.7	-1.8	-0.9	4.6	1675	638585.3	4498225.2	638478.8	4498575.6	638453.9	4498657.7	638464.6	4498622.6
1676	-6.8	-4.4	-3.8	-1.7	-0.9	4.1	1676	638613.7	4498235.0	638506.4	4498588.2	638482.4	4498667.0	638492.1	4498635.3
1677	-6.9	-4.4	-3.8	-1.7	-0.9	3.8	1677	638642.0	4498244.9	638534.3	4498599.6	638510.5	4498677.7	638519.4	4498648.7
1678	-7.0	-4.4	-3.8	-1.5	-0.8	3.6	1678	638670.4	4498254.6	638560.6	4498615.9	638538.9	4498687.6	638547.2	4498660.1
1679	-7.0	-4.4	-3.9	-1.5	-0.8	3.3	1679	638698.9	4498264.1	638588.3	4498628.1	638567.2	4498697.5	638574.8	4498672.5
1680	-7.0	-4.4	-3.9	-1.5	-0.9	3.2	1680	638727.0	4498274.9	638617.1	4498636.5	638595.4	4498707.8	638602.8	4498683.4
1681	-7.0	-4.4	-3.8	-1.5	-0.8	3.4	1681	638754.8	4498286.5	638645.1	4498647.5	638623.8	4498717.8	638631.7	4498691.6
1682	-7.0	-4.3	-3.8	-1.4	-0.8	3.0	1682	638782.2	4498299.5	638672.4	4498660.9	638652.3	4498726.9	638659.4	4498703.8
1683	-7.0	-4.3	-3.8	-1.4	-0.8	3.2	1683	638810.4	4498309.9	638700.7	4498671.0	638680.5	4498737.3	638688.0	4498712.8
1684	-7.0	-4.3	-3.8	-1.4	-0.8	3.0	1684	638838.9	4498319.4	638729.3	4498680.1	638709.0	4498747.0	638715.9	4498724.3
1685	-7.1	-4.3	-3.8	-1.3	-0.7	2.7	1685	638867.3	4498329.0	638756.7	4498693.1	638738.1	4498754.1	638744.4	4498733.5
1686	-7.1	-4.3	-3.8	-1.2	-0.7	2.5	1686	638895.7	4498338.7	638784.3	4498705.3	638767.3	4498761.5	638773.1	4498742.3
1687	-7.1	-4.3	-3.8	-1.1	-0.6	2.5	1687	638923.3	4498351.0	638812.1	4498717.2	638795.9	4498770.3	638801.8	4498751.0
1688	-7.1	-4.3	-3.8	-1.1	-0.6	2.6	1688	638951.5	4498361.6	638839.6	4498729.9	638824.3	4498780.0	638830.4	4498760.1
1689	-7.1	-4.2	-3.7	-1.1	-0.6	2.6	1689	638979.4	4498372.8	638868.1	4498739.2	638852.7	4498789.8	638858.7	4498770.1
1690	-7.1	-4.2	-3.7	-1.0	-0.5	2.6	1690	639007.4	4498384.0	638896.3	4498749.5	638881.8	4498797.4	638887.8	4498777.6
1691	-7.1	-4.2	-3.7	-0.9	-0.5	2.3	1691	639035.6	4498394.4	638924.3	4498760.5	638911.4	4498803.0	638916.7	4498785.7
1692	-7.1	-4.2	-3.7	-0.9	-0.4	2.5	1692	639064.1	4498403.8	638952.4	4498771.2	638939.3	4498814.5	638945.1	4498795.4
1693	-7.1	-4.2	-3.6	-1.0	-0.4	3.4	1693	639092.4	4498413.6	638981.2	4498779.8	638966.9	4498826.8	638974.9	4498800.5
1694	-7.1	-4.2	-3.6	-1.1	-0.4	4.1	1694	639120.7	4498423.7	639010.0	4498788.1	638994.7	4498838.4	639004.2	4498807.1
1695	-7.1	-4.2	-3.6	-1.1	-0.3	4.3	1695	639149.3	4498432.9	639038.3	4498798.2	639023.2	4498848.0	639033.1	4498815.2
1696	-7.2	-4.3	-3.6	-1.1	-0.3	4.7	1696	639178.9	4498438.7	639066.6	4498808.4	639051.4	4498858.2	639062.4	4498822.2

Table A-1. High-Water Shoreline Position Change – Rockaway Inlet to Moriches Inlet, New York

	High-Water Shoreline Position Change Rate (m/yr)					
	1873/88 to			1933/34 to		1983 to
Transect #	1933/34	1983	1991/97	1983	1991/97	1991/97
1697	-7.2	-4.3	-3.6	-1.1	-0.2	5.0
1698	-7.3	-4.3	-3.6	-0.9	-0.1	5.1
1699	-7.4	-4.2	-3.6	-0.8	0.0	5.1
1700	-7.3	-4.2	-3.5	-0.7	0.1	4.8
1701	-7.5	-4.2	-3.5	-0.5	0.2	5.0
1702	-7.5	-4.1	-3.5	-0.4	0.3	4.6
1703	-7.4	-4.0	-3.5	-0.2	0.3	3.6
1704	-7.4	-3.9	-3.4	-0.0	0.4	3.1
1705	-7.4	-3.8	-3.4	0.1	0.5	2.7
1706	-7.5	-3.8	-3.3	0.3	0.6	2.5
1707	-7.5	-3.7	-3.3	0.4	0.8	2.6
1708	-7.6	-3.7	-3.3	0.5	0.8	2.9
1709	-7.7	-3.7	-3.2	0.7	1.0	3.2
1710	-7.8	-3.7	-3.3	0.8	1.1	2.8
1711	-7.9	-3.7	-3.2	0.9	1.2	3.2
1712	-7.9	-3.7	-3.2	0.9	1.3	3.8
1713	-8.0	-3.7	-3.2	1.0	1.4	4.2
1714	-8.1	-3.7	-3.1	1.1	1.6	4.5
1715	-8.1	-3.6	-3.0	1.3	1.8	4.8
1716	-8.1	-3.6	-2.9	1.5	2.0	5.1
1717	-8.1	-3.5	-2.8	1.6	2.2	5.3
1718	-8.1	-3.4	-2.8	1.7	2.3	5.8
1719	-8.1	-3.4	-2.7	1.7	2.4	6.5
1720	-8.2	-3.4	-2.7	1.8	2.6	7.2
1721	-8.2	-3.4	-2.5	1.9	2.8	8.5
1722	-8.2	-3.4	-2.4	1.9	3.1	10.0
1723	-8.2	-3.4	-2.3	1.9	3.2	11.1
1724	-8.2	-3.4	-2.3	1.9	3.4	12.3
1725	-8.2	-3.4	-2.2	2.0	3.6	13.4
1726	-8.3	-3.4	-2.1	2.0	3.7	14.3
1727	-8.3	-3.4	-2.0	2.0	3.9	15.5
1728	-8.4	-3.4	-2.0	2.0	4.1	16.9
1729	-8.5	-3.4	-1.9	2.1	4.4	18.2
1730	-8.5	-3.4	-1.7	2.2	4.7	19.9
1731	-8.6	-3.4	-1.6	2.3	5.0	21.3
1732	-8.6	-3.4	-1.5	2.3	5.2	22.9
1733	-8.5	-3.4	-1.4	2.3	5.4	24.4
1734	-8.5	-3.3	-1.3	2.4	5.6	25.4
1735	-8.5	-3.3	-1.2	2.5	5.8	26.2
1736	-8.5	-3.2	-1.0	2.5	6.0	27.3
1737	-8.5	-3.2	-0.9	2.6	6.2	28.3
1738	-8.4	-3.2	-0.8	2.6	6.4	29.2
1739	-8.5	-3.2	-0.7	2.7	6.6	30.4
1740	-8.5	-3.2	-0.7	2.7	6.7	31.5
1741	-8.6	-3.2	-0.6	2.7	6.9	32.5
1742	-8.6	-3.2	-0.6	2.8	7.1	33.5
1743	-8.8	-3.3	-0.5	2.8	7.2	34.7
1744	-8.8	-3.3	-0.5	2.7	7.4	36.0
1745	-8.8	-3.3	-0.4	2.7	7.6	37.4
1746	-8.8	-3.3	-0.4	2.7	7.7	37.9
1747	-8.9	-3.3	-0.3	2.9	7.8	37.9
1748	-8.9	-3.3	-0.3	2.9	7.8	37.8
1749	-8.8	-3.2	-0.3	3.0	7.8	37.6

	High-Water Shoreline Position (UTM Zone 18, NAD 1983)							
	1873/88		1933/34		1983		1991/97	
Transect #	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)
1697	639207.5	4498447.6	639094.9	4498818.1	639079.5	4498868.8	639091.3	4498830.2
1698	639236.4	4498455.9	639121.5	4498834.0	639108.6	4498876.5	639120.5	4498837.2
1699	639264.9	4498465.3	639149.2	4498846.1	639137.8	4498883.5	639149.7	4498844.3
1700	639293.0	4498475.8	639177.8	4498854.9	639167.8	4498887.8	639179.0	4498851.1
1701	639321.5	4498485.4	639204.5	4498870.4	639196.9	4498895.2	639208.5	4498857.1
1702	639349.8	4498495.2	639232.9	4498880.2	639227.1	4498899.2	639237.7	4498864.4
1703	639378.0	4498505.5	639261.3	4498889.8	639258.3	4498899.5	639266.7	4498872.0
1704	639405.8	4498517.5	639289.6	4498900.0	639289.3	4498900.9	639296.5	4498877.0
1705	639434.1	4498527.3	639317.8	4498910.3	639319.5	4498904.7	639325.8	4498884.0
1706	639462.9	4498535.7	639345.3	4498923.0	639349.8	4498908.0	639355.7	4498888.7
1707	639491.5	4498545.0	639373.2	4498934.1	639379.5	4498913.4	639385.6	4498893.4
1708	639520.3	4498553.4	639401.3	4498945.1	639408.5	4498921.3	639415.2	4498899.3
1709	639549.2	4498561.5	639427.8	4498960.9	639437.6	4498928.7	639445.1	4498904.0
1710	639578.4	4498568.4	639455.8	4498972.0	639467.1	4498934.7	639473.7	4498913.2
1711	639607.4	4498576.2	639484.1	4498982.0	639496.2	4498942.1	639503.5	4498918.1
1712	639636.5	4498583.7	639512.4	4498992.0	639525.0	4498950.5	639533.8	4498921.6
1713	639665.7	4498590.6	639540.2	4499003.9	639553.8	4498958.9	639563.6	4498926.6
1714	639694.1	4498600.5	639567.5	4499017.2	639583.7	4498963.8	639594.2	4498929.2
1715	639722.1	4498611.6	639595.0	4499029.7	639614.0	4498967.4	639625.1	4498930.7
1716	639750.2	4498622.3	639622.7	4499041.9	639643.9	4498972.1	639655.8	4498933.1
1717	639778.4	4498632.6	639650.9	4499052.2	639674.3	4498975.2	639686.7	4498934.3
1718	639806.8	4498642.4	639679.3	4499062.0	639704.0	4498980.8	639717.4	4498936.6
1719	639835.4	4498651.3	639708.0	4499070.7	639732.8	4498989.2	639747.9	4498939.5
1720	639864.2	4498659.9	639736.0	4499081.8	639761.6	4498997.3	639778.4	4498942.2
1721	639892.2	4498670.9	639763.7	4499093.7	639790.8	4499004.5	639810.6	4498939.4
1722	639920.2	4498681.8	639791.8	4499104.5	639819.4	4499013.6	639842.6	4498937.1
1723	639948.8	4498690.8	639820.9	4499111.7	639848.0	4499022.8	639873.8	4498937.7
1724	639977.8	4498698.7	639849.5	4499120.9	639876.5	4499032.0	639905.1	4498937.9
1725	640006.4	4498707.7	639877.5	4499132.1	639905.2	4499040.8	639936.3	4498938.3
1726	640035.2	4498716.3	639905.3	4499143.6	639933.9	4499049.4	639967.3	4498939.7
1727	640063.8	4498725.3	639933.5	4499154.2	639962.4	4499058.9	639998.5	4498940.2
1728	640093.1	4498732.0	639961.5	4499165.0	639990.6	4499069.4	640029.8	4498940.4
1729	640121.8	4498740.7	639989.2	4499177.0	640019.1	4499078.8	640061.5	4498939.3
1730	640150.7	4498748.8	640017.0	4499188.9	640048.4	4499085.6	640094.6	4498933.3
1731	640179.6	4498756.9	640045.1	4499199.6	640077.6	4499092.5	640127.1	4498929.8
1732	640208.3	4498765.6	640074.1	4499207.3	640106.2	4499101.6	640159.4	4498926.7
1733	640236.5	4498775.9	640102.5	4499217.0	640135.2	4499109.5	640191.9	4498922.7
1734	640264.8	4498786.1	640131.0	4499226.5	640165.2	4499113.9	640224.1	4498919.8
1735	640293.0	4498796.3	640159.7	4499235.2	640195.1	4499118.5	640256.0	4498918.1
1736	640321.5	4498805.7	640188.6	4499243.3	640224.7	4499124.3	640288.2	4498915.4
1737	640350.0	4498815.3	640217.4	4499251.7	640253.8	4499131.7	640319.7	4498914.8
1738	640378.4	4498824.8	640246.0	4499260.7	640283.4	4499137.7	640351.3	4498914.2
1739	640407.2	4498833.4	640274.5	4499270.1	640312.6	4499144.6	640383.2	4498912.2
1740	640436.2	4498840.9	640302.9	4499279.8	640341.3	4499153.4	640414.6	4498912.2
1741	640465.4	4498848.1	640331.3	4499289.6	640370.1	4499162.0	640445.6	4498913.5
1742	640494.9	4498854.2	640359.3	4499300.5	640398.5	4499171.7	640476.3	4498915.4
1743	640524.6	4498859.8	640387.2	4499311.9	640426.5	4499182.4	640507.2	4498917.1
1744	640553.7	4498867.0	640415.6	4499321.6	640454.6	4499193.3	640538.4	4498917.6
1745	640582.9	4498874.2	640444.2	4499330.8	640483.0	4499203.1	640569.9	4498917.0
1746	640611.6	4498882.8	640472.9	4499339.5	640511.9	4499211.0	640600.1	4498920.7
1747	640640.5	4498891.0	640500.7	4499351.1	640541.6	4499216.6	640629.8	4498926.2
1748	640669.4	4498899.1	640530.4	4499356.6	640571.5	4499221.4	640659.4	4498932.1
1749	640697.9	4498908.7	640559.7	4499363.5	640601.9	4499224.5	640689.3	4498936.7

Table A-1. High-Water Shoreline Position Change – Rockaway Inlet to Moriches Inlet, New York

High-Water Shoreline Position Change Rate (m/yr)							High-Water Shoreline Position (UTM Zone 18, NAD 1983)								
	1873/88 to			1933/34 to		1983 to		1873/88		1933/34		1983		1991/97	
Transect #	1933/34	1983	1991/97	1983	1991/97	1991/97	Transect #	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)
1750	-8.8	-3.1	-0.2	3.1	7.9	36.9	1750	640726.5	4498917.7	640588.6	4499371.4	640633.0	4499225.5	640718.7	4498943.2
1751	-8.8	-3.0	-0.2	3.3	7.9	36.1	1751	640754.5	4498928.8	640616.9	4499381.5	640664.1	4499226.0	640748.0	4498950.1
1752	-8.8	-2.9	-0.2	3.6	8.0	34.8	1752	640782.3	4498940.1	640644.7	4499393.2	640695.7	4499225.5	640776.7	4498958.9
1753	-8.7	-2.8	-0.2	3.7	8.0	33.9	1753	640810.4	4498951.1	640673.5	4499401.5	640726.4	4499227.5	640805.2	4498968.0
1754	-8.6	-2.7	-0.2	3.7	7.9	33.2	1754	640838.3	4498962.2	640703.4	4499406.5	640756.5	4499231.8	640833.6	4498977.9
1755	-8.5	-2.7	-0.1	3.8	7.9	32.4	1755	640866.0	4498974.4	640732.1	4499415.0	640786.8	4499235.1	640862.2	4498987.1
1756	-8.5	-2.6	-0.1	4.0	7.8	31.3	1756	640893.9	4498985.9	640760.5	4499424.8	640817.6	4499236.8	640890.3	4498997.5
1757	-8.5	-2.4	-0.1	4.2	7.9	30.1	1757	640922.0	4498996.5	640789.1	4499433.9	640849.2	4499235.9	640919.2	4499005.6
1758	-8.5	-2.3	-0.1	4.5	7.9	28.9	1758	640950.8	4499005.0	640817.3	4499444.1	640880.7	4499235.7	640947.8	4499014.7
1759	-8.5	-2.3	-0.1	4.6	7.9	27.6	1759	640979.7	4499013.1	640845.8	4499453.8	640911.7	4499236.7	640976.0	4499025.2
1760	-8.5	-2.2	-0.1	4.8	7.8	26.7	1760	641008.2	4499022.2	640874.4	4499462.6	640942.2	4499239.5	641004.4	4499035.0
1761	-8.6	-2.2	-0.2	4.9	7.8	25.9	1761	641038.0	4499027.4	640903.1	4499471.3	640972.5	4499243.0	641032.6	4499045.1
1762	-8.6	-2.2	-0.2	5.0	7.8	24.9	1762	641067.5	4499033.5	640932.2	4499479.0	641002.9	4499246.2	641060.8	4499055.7
1763	-8.6	-2.1	-0.2	5.1	7.7	24.2	1763	641096.6	4499041.1	640961.5	4499485.6	641033.5	4499248.5	641089.8	4499063.4
1764	-8.6	-2.0	-0.2	5.2	7.8	23.7	1764	641125.1	4499050.5	640990.6	4499493.0	641063.9	4499251.7	641119.0	4499070.6
1765	-8.5	-2.0	-0.2	5.2	7.7	22.9	1765	641153.5	4499060.2	641019.4	4499501.4	641094.1	4499255.7	641147.4	4499080.1
1766	-8.5	-1.9	-0.2	5.2	7.7	22.4	1766	641182.0	4499069.6	641049.1	4499506.8	641123.8	4499261.2	641175.8	4499089.8
1767	-8.4	-1.9	-0.2	5.3	7.6	21.7	1767	641210.4	4499079.2	641078.6	4499513.0	641153.7	4499265.8	641204.1	4499099.9
1768	-8.4	-1.9	-0.2	5.3	7.5	21.1	1768	641239.7	4499086.0	641108.0	4499519.5	641183.8	4499270.0	641232.9	4499108.5
1769	-8.3	-1.8	-0.2	5.4	7.4	20.2	1769	641267.9	4499096.3	641137.9	4499524.4	641214.1	4499273.6	641261.0	4499118.9
1770	-8.2	-1.8	-0.2	5.4	7.4	19.4	1770	641296.7	4499104.8	641167.3	4499530.5	641244.2	4499277.5	641289.4	4499128.9
1771	-8.2	-1.7	-0.2	5.4	7.3	18.6	1771	641325.3	4499113.9	641196.9	4499536.6	641274.3	4499281.6	641317.7	4499139.0
1772	-8.1	-1.7	-0.2	5.4	7.2	18.3	1772	641353.9	4499122.9	641226.8	4499541.4	641304.1	4499286.9	641346.6	4499146.9
1773	-8.0	-1.7	-0.2	5.4	7.2	18.0	1773	641382.6	4499131.8	641256.5	4499546.8	641333.3	4499293.8	641375.2	4499156.0
1774	-8.0	-1.6	-0.2	5.3	7.1	17.8	1774	641411.3	4499140.4	641286.4	4499551.4	641362.4	4499301.2	641403.8	4499165.1
1775	-8.0	-1.7	-0.3	5.3	7.0	17.8	1775	641440.7	4499146.7	641315.8	4499558.1	641391.0	4499310.4	641432.3	4499174.6
1776	-7.9	-1.7	-0.3	5.2	7.0	18.2	1776	641470.4	4499152.2	641345.9	4499562.2	641419.5	4499319.8	641461.8	4499180.4
1777	-7.9	-1.7	-0.3	5.1	7.0	18.3	1777	641499.2	4499160.6	641375.1	4499569.2	641447.8	4499330.0	641490.3	4499190.1
1778	-7.9	-1.8	-0.3	5.0	6.9	18.8	1778	641528.1	4499168.9	641404.7	4499575.0	641475.8	4499340.9	641519.4	4499197.4
1779	-7.8	-1.8	-0.3	4.9	6.9	19.1	1779	641556.3	4499179.1	641434.1	4499581.4	641503.4	4499353.1	641547.8	4499207.0
1780	-7.7	-1.8	-0.2	4.7	6.8	20.0	1780	641584.4	4499189.9	641463.5	4499587.8	641530.0	4499369.0	641576.6	4499215.6
1781	-7.6	-1.9	-0.2	4.3	6.8	22.0	1781	641612.7	4499199.7	641493.3	4499592.9	641554.6	4499391.0	641605.7	4499222.8
1782	-7.4	-2.2	-0.2	3.6	6.7	25.3	1782	641640.5	4499211.6	641523.9	4499595.4	641575.6	4499425.2	641634.3	4499231.9
1783	-7.3	-2.7	-0.2	2.3	6.6	32.7	1783	641669.2	4499220.2	641554.4	4499598.2	641587.7	4499488.7	641663.7	4499238.3
1784	-7.2	-2.7	-0.2	2.2	6.5	32.5	1784	641698.5	4499227.2	641585.0	4499600.8	641616.9	4499495.6	641692.5	4499246.7
1785	-7.1	-2.7	-0.2	2.1	6.3	32.2	1785	641726.9	4499236.8	641616.2	4499601.1	641646.1	4499502.7	641721.1	4499256.0
1786	-6.9	-2.7	-0.2	2.0	6.2	31.9	1786	641756.1	4499243.8	641647.2	4499602.2	641675.8	4499508.0	641750.1	4499263.7
1787	-6.8	-2.6	-0.2	2.0	6.0	30.9	1787	641785.1	4499251.5	641678.9	4499601.1	641707.1	4499508.4	641778.9	4499271.9
1788	-6.6	-2.5	-0.2	2.0	5.8	29.3	1788	641814.1	4499259.5	641710.9	4499599.1	641739.6	4499504.6	641807.7	4499280.5
1789	-6.4	-2.4	-0.2	2.0	5.6	27.6	1789	641843.6	4499265.6	641743.4	4499595.2	641772.5	4499499.5	641836.6	4499288.5
1790	-6.2	-2.2	-0.2	2.2	5.4	25.3	1790	641873.2	4499271.1	641775.7	4499592.3	641806.5	4499490.8	641865.4	4499297.0
1791	-6.1	-2.0	-0.3	2.5	5.3	22.4	1791	641902.7	4499277.3	641806.9	4499592.8	641842.3	4499476.2	641894.3	4499305.0
1792	-6.0	-1.8	-0.3	2.9	5.1	18.9	1792	641931.5	4499285.7	641838.0	4499593.5	641879.1	4499458.1	641923.1	4499313.4
1793	-5.8		-0.3		5.0		1793	641960.6	4499293.3	641869.5	4499592.9			641952.1	4499321.2
1794	-5.6		-0.3		4.8		1794	641989.4	4499301.5	641901.3	4499591.5			641981.5	4499327.5
1795	-5.2	1.0	-0.2	7.9	4.5	-16.4	1795	642017.7	4499311.6	641936.7	4499578.3	642049.0	4499208.7	642010.8	4499334.3
1796	-4.7	1.0	-0.2	7.3	4.1	-15.2	1796	642045.8	4499322.4	641971.8	4499566.0	642075.7	4499224.0	642040.3	4499340.4
1797	-4.5	1.0	-0.1	7.1	4.1	-14.3	1797	642073.6	4499334.0	642002.7	4499567.5	642103.3	4499236.3	642070.0	4499345.8
1798	-4.3	1.0	-0.0	6.9	4.0	-13.4	1798	642101.6	4499345.1	642033.4	4499569.5	642131.4	4499247.0	642100.2	4499349.6
1799	-4.2	1.0	0.0	6.7	4.0	-12.6	1799	642129.7	4499355.8	642064.6	4499570.0	642159.7	4499256.9	642130.5	4499353.2
1800	-4.0	1.0	0.1	6.5	3.9	-11.7	1800	642158.2	4499365.0	642095.8	4499570.5	642188.2	4499266.5	642160.9	4499356.3
1801	-3.8	1.0	0.1	6.3	3.9	-10.9	1801	642186.8	4499374.2	642127.2	4499570.6	642216.6	4499276.2	642191.2	4499359.9
1802	-3.6	1.0	0.2	6.0	3.8	-10.0	1802	642215.4	4499383.3	642159.0	4499568.8	642244.7	4499287.0	642221.5	4499363.2

Table A-1. High-Water Shoreline Position Change – Rockaway Inlet to Moriches Inlet, New York

	High-Water Shoreline Position Change Rate (m/yr)						High-Water Shoreline Position (UTM Zone 18, NAD 1983)								
	1873/88 to			1933/34 to		1983 to		1873/88		1933/34		1983		1991/97	
Transect #	1933/34	1983	1991/97	1983	1991/97	1991/97	Transect #	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)
1803	-3.4	1.0	0.2	5.7	3.6	-9.2	1803	642244.3	4499391.3	642191.6	4499564.8	642272.8	4499297.7	642251.3	4499368.3
1804	-3.2	0.9	0.2	5.4	3.5	-8.5	1804	642273.6	4499398.1	642223.8	4499562.1	642300.9	4499308.2	642281.3	4499372.9
1805	-2.9	0.9	0.3	5.1	3.3	-7.6	1805	642302.5	4499406.3	642257.2	4499555.2	642329.2	4499318.3	642311.5	4499376.5
1806	-2.7	0.9	0.3	4.8	3.2	-6.8	1806	642331.8	4499413.0	642288.9	4499554.2	642357.8	4499327.4	642342.1	4499379.1
1807	-2.6	0.8	0.4	4.6	3.2	-5.5	1807	642360.9	4499420.4	642320.2	4499554.2	642385.4	4499339.7	642372.5	4499382.1
1808	-2.6	0.8	0.4	4.5	3.2	-4.4	1808	642389.9	4499428.3	642349.3	4499561.7	642412.7	4499353.0	642402.6	4499386.4
1809	-2.6	0.7	0.4	4.4	3.3	-3.2	1809	642418.9	4499435.8	642378.1	4499570.1	642440.2	4499365.7	642432.7	4499390.3
1810	-2.6	0.7	0.5	4.3	3.4	-1.9	1810	642448.4	4499442.1	642406.9	4499578.7	642468.2	4499376.9	642463.9	4499391.2
1811	-2.8	0.6	0.5	4.3	3.6	-0.6	1811	642478.0	4499447.7	642434.7	4499590.4	642496.3	4499387.4	642495.0	4499391.8
1812	-3.1	0.6	0.6	4.7	4.1	0.2	1812	642508.0	4499452.4	642458.8	4499614.3	642525.8	4499393.6	642526.3	4499391.9
1813	-3.4	0.6	0.6	5.1	4.4	0.4	1813	642536.9	4499460.4	642483.1	4499637.4	642555.8	4499398.2	642556.7	4499395.0
1814	-3.7	0.7	0.6	5.5	4.8	0.2	1814	642567.2	4499463.7	642508.6	4499656.7	642586.9	4499399.1	642587.4	4499397.5
1815	-4.0	0.7	0.7	5.9	5.1	-0.1	1815	642597.1	4499468.6	642534.1	4499675.9	642618.7	4499397.5	642618.6	4499397.9
1816	-4.1	0.8	0.8	6.3	5.4	0.0	1816	642626.4	4499475.5	642561.9	4499687.7	642650.9	4499394.8	642650.9	4499394.6
1817	-4.2	0.9	0.9	6.6	5.6	0.0	1817	642654.6	4499485.6	642589.5	4499699.9	642682.9	4499392.7	642682.9	4499392.6
1818	-4.2	1.0	1.0	6.8	5.9	0.8	1818	642682.7	4499496.5	642617.3	4499711.8	642713.6	4499394.7	642715.4	4499388.7
1819	-4.2	1.1	1.1	6.9	6.2	1.6	1819	642711.3	4499505.6	642645.7	4499721.5	642744.3	4499396.9	642748.1	4499384.4
1820	-4.2	1.2	1.3	7.1	6.4	2.5	1820	642740.2	4499513.5	642674.3	4499730.4	642775.2	4499398.4	642781.0	4499379.2
1821	-4.2	1.2	1.4	7.2	6.7	3.4	1821	642769.3	4499521.0	642703.5	4499737.7	642806.2	4499399.4	642814.2	4499373.2
1822	-4.2	1.3	1.5	7.4	6.9	4.3	1822	642798.1	4499529.3	642732.1	4499746.7	642837.0	4499401.5	642847.0	4499368.4
1823	-4.3	1.4	1.5	7.7	7.0	3.0	1823	642827.5	4499535.8	642760.2	4499757.3	642869.4	4499397.9	642876.4	4499375.0
1824	-4.3	1.5	1.4	8.0	6.8	-0.4	1824	642857.1	4499541.8	642789.4	4499764.4	642902.7	4499391.4	642901.8	4499394.6
1825	-4.4	1.6	1.3	8.2	6.7	-2.8	1825	642887.4	4499545.2	642819.0	4499770.1	642935.8	4499385.9	642929.3	4499407.3
1826	-4.3	1.7	1.3	8.3	6.6	-3.7	1826	642916.6	4499552.3	642848.4	4499776.8	642965.9	4499389.9	642957.4	4499417.9
1827	-4.4						1827	642945.6	4499560.1	642876.9	4499786.2				
1828	-4.4						1828	642974.6	4499567.8	642905.8	4499794.1				
1829	-4.4						1829	643003.7	4499575.0	642934.1	4499804.3				
1830	-4.4						1830	643032.6	4499583.1	642962.9	4499812.4				
1831	-4.4						1831	643061.2	4499592.3	642992.3	4499818.9				
1832	-4.4						1832	643090.3	4499599.5	643021.9	4499824.9				
1833	-4.3						1833	643118.9	4499608.7	643051.6	4499830.1				
1834							1834	643148.2	4499615.6						
1835							1835							643259.8	4498006.6
1836						1.8	1836					643281.6	4498033.4	643289.4	4498013.2
1837						1.6	1837					643312.5	4498036.7	643319.4	4498019.0
1838						1.4	1838					643343.6	4498039.5	643349.6	4498024.1
1839						1.0	1839					643375.0	4498041.6	643379.5	4498030.1
1840						0.6	1840					643406.3	4498043.8	643409.0	4498036.8
1841						0.3	1841					643437.7	4498045.9	643439.1	4498042.2
1842						0.2	1842					643468.7	4498049.0	643469.6	4498046.7
1843						0.3	1843					643499.9	4498051.4	643501.0	4498048.6
1844						0.7	1844					643531.2	4498053.9	643534.1	4498046.3
1845						1.2	1845					643562.6	4498055.8	643568.0	4498042.1
1846						1.7	1846					643593.7	4498058.7	643601.0	4498040.0
1847						2.0	1847					643625.3	4498060.2	643634.1	4498037.7
1848						2.5	1848					643656.7	4498062.2	643667.6	4498034.2
1849						3.2	1849					643687.8	4498065.1	643701.6	4498029.6
1850						3.4	1850					643719.8	4498065.7	643734.6	4498027.5
1851						3.1	1851					643752.8	4498063.6	643766.3	4498028.9
1852						2.6	1852					643785.4	4498062.6	643796.9	4498033.1
1853						2.4	1853					643816.8	4498064.6	643827.3	4498037.5
1854						2.5	1854					643847.1	4498069.4	643858.1	4498041.2
1855						2.2	1855					643879.1	4498070.0	643888.7	4498045.3

Table A-1. High-Water Shoreline Position Change – Rockaway Inlet to Moriches Inlet, New York

	High-Water Shoreline Position Change Rate (m/yr)						High-Water Shoreline Position (UTM Zone 18, NAD 1983)								
	1873/88 to			1933/34 to		1983 to		1873/88		1933/34		1983		1991/97	
Transect #	1933/34	1983	1991/97	1983	1991/97	1991/97	Transect #	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)
1856						1.5	1856					643912.4	4498067.1	643919.1	4498049.9
1857						1.1	1857					643945.0	4498066.2	643949.8	4498053.9
1858				15.5	12.6	0.7	1858			643701.6	4498772.9	643977.4	4498065.5	643980.6	4498057.3
1859				13.1	10.6	0.5	1859			643777.1	4498662.0	644009.5	4498065.8	644011.7	4498060.1
1860				11.6	9.4	0.4	1860			643834.8	4498596.4	644041.1	4498067.3	644042.9	4498062.7
1861				10.3	8.4	0.5	1861			643889.1	4498539.8	644072.3	4498069.9	644074.5	4498064.3
1862				9.7	7.9	0.6	1862			643930.8	4498515.4	644103.7	4498072.0	644106.1	4498065.7
1863				9.6	7.9	0.8	1863			643964.8	4498510.7	644135.7	4498072.6	644139.0	4498064.0
1864				9.6	8.0	1.1	1864			643996.3	4498512.5	644168.0	4498072.3	644172.8	4498060.0
1865				9.6	8.0	1.4	1865			644028.6	4498512.3	644199.8	4498073.3	644205.7	4498058.2
1866				9.3	7.7	1.3	1866			644066.8	4498497.1	644231.5	4498074.6	644237.2	4498059.9
1867				8.3	6.9	1.1	1867			644115.1	4498455.6	644262.8	4498076.9	644267.4	4498065.0
1868				7.6	6.2	0.8	1868			644159.5	4498424.3	644294.0	4498079.4	644297.6	4498070.1
1869				7.1	5.9	0.8	1869			644199.0	4498405.5	644325.3	4498081.6	644328.6	4498073.2
1870				6.7	5.6	1.1	1870			644236.3	4498392.6	644356.2	4498085.2	644360.9	4498073.1
1871				6.5	5.5	1.6	1871			644271.9	4498384.0	644386.9	4498089.0	644393.7	4498071.5
1872				6.3	5.4	1.7	1872			644305.8	4498379.5	644417.5	4498092.9	644424.7	4498074.4
1873				6.1	5.3	1.7	1873			644339.4	4498375.9	644448.4	4498096.3	644456.0	4498076.9
1874				6.0	5.2	2.2	1874			644372.4	4498373.8	644479.0	4498100.3	644488.4	4498076.3
1875				5.8	5.2	2.6	1875			644406.3	4498369.4	644509.7	4498104.4	644521.1	4498075.1
1876				5.6	5.1	2.8	1876			644441.1	4498362.9	644541.4	4498105.5	644553.7	4498074.1
1877				5.5	5.0	3.1	1877			644475.9	4498356.1	644573.3	4498106.4	644586.8	4498071.6
1878				5.3	5.0	3.6	1878			644510.6	4498349.9	644605.1	4498107.4	644620.6	4498067.5
1879				5.1	4.9	3.9	1879			644545.9	4498341.7	644637.0	4498108.1	644653.8	4498065.0
1880				4.9	4.7	4.1	1880			644581.9	4498332.1	644668.5	4498110.0	644686.3	4498064.2
1881				4.7	4.6	4.1	1881			644617.2	4498324.0	644700.6	4498110.2	644718.5	4498064.3
1882				4.5	4.3	3.8	1882			644653.3	4498314.1	644732.7	4498110.5	644749.3	4498067.8
1883				4.3	4.2	3.6	1883			644687.9	4498307.8	644764.1	4498112.5	644779.8	4498072.1
1884				4.1	4.0	3.4	1884			644722.5	4498301.8	644795.6	4498114.2	644810.5	4498076.1
1885				4.0	3.8	3.1	1885			644756.6	4498297.0	644827.1	4498116.1	644840.6	4498081.5
1886				3.9	3.7	2.9	1886			644789.2	4498295.9	644858.2	4498119.0	644871.0	4498086.2
1887				3.8	3.6	2.8	1887			644821.3	4498296.1	644889.1	4498122.1	644901.5	4498090.5
1888				3.8	3.6	3.0	1888			644852.8	4498297.9	644919.9	4498125.7	644932.9	4498092.6
1889				3.7	3.6	3.3	1889			644885.3	4498297.2	644950.9	4498128.8	644965.1	4498092.5
1890				3.6	3.6	3.6	1890			644918.3	4498295.1	644982.3	4498130.9	644998.0	4498090.7
1891				3.5	3.6	3.9	1891			644950.7	4498294.7	645013.7	4498133.0	645030.5	4498089.9
1892				3.5	3.5	3.8	1892			644983.3	4498293.6	645045.0	4498135.2	645061.8	4498092.3
1893				3.3	3.4	3.5	1893			645017.5	4498288.5	645076.7	4498136.5	645092.1	4498097.1
1894				3.2	3.2	3.5	1894			645052.2	4498282.1	645108.2	4498138.3	645123.3	4498099.5
1895				3.0	3.1	3.5	1895			645087.0	4498275.2	645139.8	4498139.9	645155.0	4498101.0
1896				2.8	2.9	3.3	1896			645121.9	4498268.4	645171.5	4498141.3	645186.0	4498104.1
1897				2.5	2.7	3.4	1897			645157.6	4498259.5	645202.5	4498144.2	645217.3	4498106.2
1898				2.3	2.6	3.8	1898			645191.6	4498254.8	645232.8	4498149.0	645249.3	4498106.9
1899				2.3	2.6	4.1	1899			645223.8	4498254.9	645263.7	4498152.4	645281.4	4498107.1
1900				2.2	2.7	4.4	1900			645255.2	4498256.8	645294.9	4498154.9	645314.0	4498106.1
1901				2.2	2.6	4.5	1901			645288.3	4498254.5	645326.5	4498156.5	645346.0	4498106.5
1902				2.2	2.6	4.6	1902			645320.2	4498255.4	645358.4	4498157.3	645378.6	4498105.6
1903				2.2	2.7	4.8	1903			645351.9	4498256.7	645390.2	4498158.4	645411.2	4498104.4
1904				2.2	2.7	4.6	1904			645383.2	4498258.8	645422.1	4498159.1	645442.3	4498107.2
1905				2.3	2.7	4.2	1905			645413.5	4498263.8	645454.5	4498158.7	645472.6	4498112.1
1906				2.4	2.6	3.5	1906			645444.7	4498266.5	645486.6	4498158.9	645501.7	4498120.1
1907				2.3	2.4	2.8	1907			645476.9	4498266.4	645518.5	4498159.5	645530.7	4498128.3
1908				2.4	2.4	2.1	1908			645508.2	4498268.6	645551.5	4498157.6	645560.5	4498134.4

Table A-1. High-Water Shoreline Position Change – Rockaway Inlet to Moriches Inlet, New York

High-Water Shoreline Position Change Rate (m/yr)							High-Water Shoreline Position (UTM Zone 18, NAD 1983)									
	1873/88 to			1933/34 to		1983 to		1873/88		1933/34		1983		1991/97	
Transect #	1933/34	1983	1991/97	1983	1991/97	1991/97	Transect #	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)
1909				2.5	2.3	1.4	1909			645540.3	4498268.8	645585.1	4498154.1	645591.1	4498138.5
1910				2.7	2.2	0.5	1910			645572.4	4498269.1	645619.7	4498147.9	645621.7	4498142.8
1911				2.8	2.1	-0.8	1911			645605.0	4498268.1	645654.8	4498140.4	645651.2	4498149.6
1912				2.9	1.9	-2.2	1912			645638.6	4498264.5	645689.9	4498133.1	645680.2	4498157.8
1913				2.9	1.7	-3.3	1913			645671.7	4498262.3	645723.2	4498130.0	645709.1	4498166.4
1914				3.0	1.5	-4.3	1914			645704.6	4498260.4	645757.1	4498125.9	645738.5	4498173.6
1915				3.0	1.5	-4.8	1915			645736.5	4498261.1	645789.4	4498125.6	645768.6	4498179.0
1916				2.9	1.4	-4.9	1916			645768.4	4498262.0	645820.5	4498128.4	645798.9	4498183.7
1917				2.8	1.3	-4.8	1917			645800.2	4498262.9	645850.2	4498134.8	645829.2	4498186.6
1918				2.7	1.3	-4.7	1918			645832.4	4498263.0	645880.4	4498139.8	645860.1	4498191.9
1919				2.6	1.1	-4.7	1919			645866.8	4498257.3	645912.4	4498140.3	645892.1	4498192.5
1920				2.6	1.1	-5.1	1920			645900.0	4498254.9	645945.8	4498137.3	645923.4	4498194.8
1921				2.6	1.1	-5.2	1921			645932.4	4498254.2	645978.5	4498136.0	645955.7	4498194.5
1922				2.6	1.2	-4.6	1922			645964.5	4498254.6	646010.2	4498137.3	645990.2	4498188.7
1923				2.5	1.1	-4.4	1923			645996.9	4498253.9	646041.3	4498140.2	646022.2	4498189.0
1924				2.4	1.2	-4.1	1924			646028.2	4498256.3	646071.5	4498145.2	646053.6	4498191.1
1925				2.4	1.1	-4.0	1925			646058.4	4498261.5	646101.0	4498152.1	646083.7	4498196.7
1926				2.4	1.2	-3.9	1926			646087.9	4498268.3	646130.4	4498159.3	646113.6	4498202.4
1927				2.2	1.0	-3.8	1927			646120.6	4498267.0	646160.1	4498165.8	646143.7	4498207.9
1928				2.0	0.9	-3.7	1928			646155.1	4498261.1	646190.0	4498171.7	646173.9	4498212.9
1929				1.7	0.8	-3.3	1929			646189.0	4498256.8	646220.0	4498177.3	646205.6	4498214.2
1930				1.5	0.8	-2.4	1930			646222.9	4498252.5	646250.3	4498182.2	646240.0	4498208.6
1931				1.4	0.6	-2.7	1931			646255.6	4498251.2	646280.5	4498187.3	646268.6	4498217.8
1932				1.4	0.5	-3.1	1932			646287.1	4498253.0	646311.0	4498191.5	646297.7	4498225.8
1933				1.3	0.4	-3.3	1933			646318.2	4498255.9	646341.4	4498196.3	646326.9	4498233.4
1934				1.3	0.3	-3.8	1934			646349.6	4498257.8	646371.9	4498200.7	646355.3	4498243.1
1935				1.2	0.1	-4.2	1935			646381.1	4498259.7	646401.9	4498206.3	646383.7	4498253.0
1936				1.0	-0.0	-4.3	1936			646413.9	4498258.0	646431.5	4498212.9	646413.0	4498260.5
1937				0.8	-0.2	-4.2	1937			646446.6	4498256.8	646461.3	4498219.0	646443.1	4498265.8
1938				0.7	-0.2	-3.9	1938			646478.8	4498256.7	646491.3	4498224.7	646474.1	4498268.8
1939				0.5	-0.3	-3.7	1939			646512.7	4498252.5	646521.3	4498230.4	646505.3	4498271.4
1940				0.3	-0.3	-3.1	1940			646545.2	4498251.7	646551.3	4498236.1	646537.6	4498271.2
1941				0.2	-0.4	-2.8	1941			646577.7	4498250.8	646582.0	4498239.9	646569.8	4498271.0
1942				0.1	-0.4	-2.4	1942			646610.7	4498248.9	646613.1	4498242.6	646602.9	4498268.9
1943				0.1	-0.4	-2.2	1943			646643.2	4498248.0	646644.3	4498245.3	646634.6	4498270.2
1944				-0.1	-0.5	-2.2	1944			646676.6	4498245.0	646675.5	4498247.9	646665.7	4498272.9
1945				-0.2	-0.6	-2.4	1945			646710.8	4498239.9	646707.0	4498249.7	646696.5	4498276.5
1946				-0.3	-0.7	-2.5	1946			646744.0	4498237.4	646738.7	4498250.9	646727.8	4498278.9
1947				-0.4	-0.8	-2.8	1947			646776.9	4498235.4	646770.7	4498251.5	646758.5	4498282.8
1948				-0.4	-0.9	-3.2	1948			646809.2	4498235.3	646802.9	4498251.4	646788.9	4498287.4
1949				-0.4	-1.0	-3.5	1949			646842.9	4498231.5	646835.2	4498251.2	646819.9	4498290.4
1950				-0.5	-1.1	-3.4	1950			646876.0	4498229.1	646866.7	4498253.1	646851.8	4498291.2
1951				-0.6	-1.2	-3.4	1951			646907.8	4498230.1	646896.6	4498258.8	646881.9	4498296.7
1952				-0.8	-1.2	-3.0	1952			646939.7	4498231.0	646925.3	4498267.7	646912.4	4498301.0
1953				-1.0	-1.3	-2.6	1953			646972.4	4498229.7	646954.4	4498275.8	646943.0	4498304.9
1954				-1.1	-1.4	-2.4	1954			647004.1	4498230.9	646983.9	4498282.7	646973.6	4498309.1
1955				-1.1	-1.3	-2.2	1955			647033.5	4498238.1	647014.1	4498287.7	647004.7	4498312.0
1956				-1.0	-1.2	-1.9	1956			647062.7	4498245.7	647044.5	4498292.5	647036.4	4498313.3
1957				-1.0			1957			647092.4	4498252.1	647074.6	4498297.7		
1958				-1.1	-0.4	2.5	1958			647123.5	4498255.0	647104.5	4498303.7	647115.3	4498276.0
1959				-1.1	-0.4	2.3	1959			647153.5	4498260.7	647133.9	4498310.9	647144.0	4498285.0
1960				-1.1	-0.4	2.5	1960			647183.5	4498266.2	647163.5	4498317.7	647174.3	4498289.8
1961				-1.2	-0.4	2.7	1961			647214.1	4498270.3	647193.1	4498324.1	647205.0	4498293.7

Table A-1. High-Water Shoreline Position Change – Rockaway Inlet to Moriches Inlet, New York

High-Water Shoreline Position Change Rate (m/yr)						High-Water Shoreline Position (UTM Zone 18, NAD 1983)									
1873/88 to			1933/34 to		1983 to		1873/88		1933/34		1983		1991/97		
Transect #	1933/34	1983	1991/97	1983	1991/97	1991/97	Transect #	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)
1962				-1.2	-0.5	2.8	1962			647244.9	4498274.0	647222.9	4498330.4	647234.9	4498299.6
1963				-1.4	-0.6	2.5	1963			647277.0	4498274.3	647252.9	4498336.0	647263.9	4498307.9
1964				-1.4	-0.7	2.2	1964			647308.0	4498277.3	647283.1	4498341.2	647292.7	4498316.7
1965				-1.5	-0.8	2.1	1965			647338.8	4498280.8	647313.1	4498346.9	647322.2	4498323.5
1966				-1.5	-0.8	2.0	1966			647370.3	4498282.7	647343.1	4498352.5	647352.0	4498329.7
1967				-1.5	-0.9	2.0	1967			647400.2	4498288.5	647372.9	4498358.5	647381.5	4498336.6
1968				-1.6	-0.9	1.9	1968			647430.9	4498292.5	647403.0	4498364.1	647411.3	4498342.7
1969				-1.5	-0.9	2.0	1969			647460.9	4498296.1	647433.4	4498368.6	647442.1	4498346.3
1970				-1.5	-0.7	2.7	1970			647491.3	4498302.8	647464.0	4498372.8	647475.9	4498342.2
1971				-1.5	-0.5	3.5	1971			647521.4	4498308.0	647494.3	4498377.6	647509.6	4498338.3
1972				-1.5	-0.4	3.8	1972			647550.8	4498315.2	647524.5	4498382.8	647541.1	4498340.2
1973				-1.5	-0.4	4.0	1973			647580.2	4498322.4	647554.4	4498388.7	647571.6	4498344.6
1974				-1.4	-0.4	4.1	1974			647609.7	4498329.3	647584.2	4498394.8	647601.9	4498349.2
1975				-1.4	-0.3	4.3	1975			647639.1	4498336.4	647614.4	4498400.0	647632.9	4498352.5
1976				-1.4	-0.2	4.4	1976			647668.7	4498343.3	647644.7	4498404.7	647663.9	4498355.4
1977				-1.3	-0.2	4.3	1977			647698.3	4498349.9	647675.4	4498408.7	647694.2	4498360.3
1978				-1.2	-0.3	3.7	1978			647727.7	4498357.1	647706.3	4498411.9	647722.2	4498371.0
1979				-1.2	-0.4	2.9	1979			647758.7	4498360.2	647737.2	4498415.2	647749.8	4498383.1
1980				-1.2	-0.5	2.7	1980			647789.0	4498364.9	647767.0	4498421.5	647778.9	4498391.0
1981				-1.2	-0.5	2.4	1981			647818.3	4498372.4	647797.3	4498426.4	647807.5	4498400.0
1982				-1.1	-0.5	2.0	1982			647847.2	4498380.8	647827.6	4498431.0	647836.3	4498409.0
1983				-1.1	-0.5	1.9	1983			647876.5	4498388.3	647857.7	4498436.6	647865.7	4498416.0
1984				-1.0	-0.5	1.7	1984			647905.9	4498395.5	647887.8	4498441.9	647895.1	4498423.1
1985				-1.0	-0.5	1.7	1985			647935.9	4498401.2	647917.4	4498448.5	647924.7	4498429.9
1986				-1.1	-0.5	1.7	1986			647966.1	4498406.2	647947.3	4498454.4	647954.9	4498434.9
1987				-1.0	-0.5	1.8	1987			647995.6	4498413.1	647977.7	4498459.0	647985.6	4498438.8
1988				-1.0	-0.4	2.0	1988			648025.8	4498418.4	648008.3	4498463.2	648016.8	4498441.3
1989				-0.9	-0.4	1.9	1989			648055.4	4498424.9	648039.1	4498466.9	648047.3	4498445.7
1990				-0.8	-0.3	1.6	1990			648084.4	4498433.1	648070.4	4498469.2	648077.4	4498451.1
1991				-0.7	-0.3	1.4	1991			648113.6	4498440.8	648101.2	4498472.6	648107.2	4498457.3
1992				-0.7	-0.3	1.3	1992			648144.0	4498445.6	648130.7	4498479.5	648136.5	4498464.8
1993				-0.9	-0.4	1.8	1993			648174.3	4498450.3	648158.3	4498491.4	648166.3	4498471.0
1994				-1.0	-0.3	2.5	1994			648203.4	4498458.3	648185.8	4498503.5	648196.6	4498475.8
1995				-1.0	-0.2	3.0	1995			648231.6	4498468.6	648213.8	4498514.3	648227.0	4498480.5
1996				-1.0	-0.1	3.5	1996			648259.8	4498478.8	648242.1	4498524.3	648257.4	4498485.0
1997				-1.0	-0.0	4.0	1997			648288.3	4498488.3	648270.6	4498533.8	648287.8	4498489.6
1998				-1.1	0.0	4.5	1998			648317.3	4498496.6	648298.5	4498544.7	648318.2	4498494.2
1999				-1.1	0.1	5.0	1999			648346.3	4498504.7	648326.6	4498555.3	648348.6	4498499.0
2000				-1.1	0.2	5.5	2000			648375.1	4498513.4	648354.9	4498565.2	648378.7	4498504.2
2001				-1.1	0.2	5.7	2001			648403.9	4498522.2	648384.0	4498573.3	648408.9	4498509.4
2002				-1.2	0.2	6.0	2002			648434.6	4498526.0	648413.1	4498581.3	648439.1	4498514.6
2003				-1.3	0.2	6.4	2003			648465.3	4498529.9	648441.4	4498591.2	648469.1	4498520.2
2004				-1.4	0.2	6.8	2004			648494.8	4498536.9	648469.1	4498602.8	648498.8	4498526.5
2005				-1.5	0.2	7.2	2005			648523.5	4498545.9	648496.8	4498614.3	648528.2	4498533.7
2006				-1.5	0.3	7.5	2006			648552.2	4498554.7	648525.0	4498624.6	648557.7	4498540.7
2007				-1.5	0.3	7.6	2007			648580.7	4498564.3	648554.3	4498632.1	648587.4	4498547.1
2008				-1.4	0.3	7.4	2008			648608.9	4498574.5	648584.1	4498638.2	648616.2	4498555.7
2009				-1.4	0.3	7.3	2009			648638.2	4498581.9	648613.3	4498645.7	648645.0	4498564.4
2010				-1.4	0.3	7.3	2010			648667.3	4498589.8	648642.4	4498653.7	648674.2	4498572.2
2011				-1.5	0.3	7.5	2011			648697.6	4498594.8	648671.3	4498662.2	648703.9	4498578.6
2012				-1.6	0.2	7.7	2012			648729.0	4498596.8	648700.3	4498670.5	648733.7	4498584.9
2013				-1.7	0.1	7.8	2013			648760.1	4498599.6	648729.4	4498678.3	648763.3	4498591.4
2014				-1.8	0.1	7.8	2014			648790.2	4498605.0	648758.4	4498686.5	648792.6	4498598.8

Table A-1. High-Water Shoreline Position Change – Rockaway Inlet to Moriches Inlet, New York

High-Water Shoreline Position Change Rate (m/yr)						
	1873/88 to			1933/34 to		1983 to
Transect #	1933/34	1983	1991/97	1983	1991/97	1991/97
2015				-1.8	0.1	7.8
2016				-1.8	0.0	7.6
2017				-1.8	0.0	7.5
2018				-1.8	0.0	7.4
2019	-5.2	-3.7	-2.6	-1.8	-0.1	7.1
2020	-5.1	-3.6	-2.6	-1.8	-0.1	6.8
2021	-5.1	-3.6	-2.6	-1.8	-0.1	6.6
2022	-5.2	-3.6	-2.6	-1.7	-0.1	6.3
2023	-5.2	-3.5	-2.6	-1.5	-0.0	6.1
2024	-5.2	-3.5	-2.6	-1.4	-0.0	5.5
2025	-5.1	-3.4	-2.5	-1.3	-0.1	5.0
2026	-5.1	-3.3	-2.5	-1.2	-0.1	4.5
2027	-5.0	-3.3	-2.5	-1.1	-0.1	3.9
2028	-4.9	-3.2	-2.5	-1.1	-0.2	3.3
2029	-4.8	-3.1	-2.5	-1.1	-0.3	3.0
2030	-4.7	-3.0	-2.5	-1.1	-0.4	2.5
2031	-4.7	-3.0	-2.5	-1.0	-0.4	1.8
2032	-4.6	-2.9	-2.5	-0.9	-0.5	1.2
2033	-4.6	-2.9	-2.5	-0.8	-0.5	0.7
2034	-4.6	-2.9	-2.5	-0.8	-0.5	0.5
2035	-4.6	-2.9	-2.6	-0.9	-0.6	0.7
2036	-4.6	-3.0	-2.6	-1.0	-0.6	0.9
2037	-4.5	-3.0	-2.6	-1.2	-0.7	0.9
2038	-4.4	-3.0	-2.6	-1.2	-0.8	1.0
2039	-4.4	-3.0	-2.6	-1.2	-0.8	0.7
2040	-4.4	-2.9	-2.6	-1.2	-0.8	0.5
2041	-4.3	-2.9	-2.6	-1.2	-0.9	0.1
2042	-4.3	-2.9	-2.6	-1.2	-1.0	0.1
2043	-4.2	-2.9	-2.6	-1.3	-1.0	0.1
2044	-4.1	-2.9	-2.6	-1.3	-1.1	-0.1
2045	-4.1	-2.9	-2.6	-1.4	-1.2	-0.3
2046	-4.0	-2.9	-2.6	-1.5	-1.3	-0.4
2047	-4.0	-2.9	-2.6	-1.5	-1.3	-0.5
2048	-4.0	-2.8	-2.6	-1.4	-1.2	-0.3
2049	-4.0	-2.8	-2.5	-1.3	-1.1	-0.2
2050	-4.0	-2.8	-2.5	-1.3	-1.1	-0.2
2051	-3.9	-2.7	-2.5	-1.4	-1.2	-0.4
2052	-3.9	-2.7	-2.5	-1.3	-1.2	-0.8
2053	-3.9	-2.7	-2.6	-1.3	-1.3	-1.2
2054	-3.9	-2.7	-2.6	-1.2	-1.3	-1.3
2055	-3.9	-2.7	-2.5	-1.2	-1.2	-1.3
2056	-3.9	-2.6	-2.5	-1.2	-1.2	-1.3
2057	-4.0	-2.7	-2.5	-1.1	-1.2	-1.5
2058	-4.0	-2.7	-2.6	-1.1	-1.2	-1.7
2059	-4.1	-2.7	-2.6	-1.1	-1.2	-1.9
2060	-4.1	-2.7	-2.6	-1.1	-1.2	-2.0
2061	-4.1	-2.7	-2.7	-1.1	-1.2	-2.0
2062	-4.2	-2.8	-2.7	-1.1	-1.2	-1.9
2063	-4.2	-2.7	-2.6	-1.0	-1.1	-1.7
2064	-4.1	-2.7	-2.6	-1.0	-1.1	-1.6
2065	-4.1	-2.7	-2.6	-1.0	-1.1	-1.5
2066	-4.1	-2.7	-2.6	-1.0	-1.1	-1.4
2067	-4.0	-2.7	-2.6	-1.1	-1.2	-1.5

High-Water Shoreline Position (UTM Zone 18, NAD 1983)								
	1873/88		1933/34		1983		1991/97	
Transect #	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)
2015			648820.2	4498610.8	648787.6	4498694.2	648821.4	4498607.5
2016			648849.7	4498617.5	648817.0	4498701.5	648850.2	4498616.2
2017			648878.9	4498625.2	648846.6	4498708.2	648879.4	4498624.0
2018			648908.4	4498632.1	648876.5	4498714.1	648908.5	4498631.8
2019	649049.9	4498351.9	648938.9	4498636.5	648906.6	4498719.4	648937.6	4498640.0
2020	649079.2	4498359.4	648969.0	4498641.9	648936.8	4498724.5	648966.5	4498648.5
2021	649108.7	4498366.3	648998.6	4498648.7	648966.9	4498730.0	648995.5	4498656.5
2022	649137.3	4498375.4	649027.0	4498658.3	648997.2	4498734.8	649024.8	4498664.0
2023	649166.2	4498384.0	649055.0	4498669.1	649027.8	4498738.9	649054.2	4498671.3
2024	649194.7	4498393.5	649083.4	4498678.8	649058.9	4498741.7	649083.0	4498679.8
2025	649222.4	4498405.0	649112.5	4498686.7	649089.9	4498744.8	649111.5	4498689.4
2026	649250.5	4498415.6	649142.3	4498692.9	649120.9	4498747.8	649140.4	4498697.8
2027	649280.2	4498421.8	649172.3	4498698.6	649152.6	4498749.1	649169.5	4498705.9
2028	649307.8	4498433.6	649203.0	4498702.5	649183.6	4498752.3	649198.1	4498715.0
2029	649335.6	4498444.9	649233.8	4498706.0	649214.0	4498757.0	649227.1	4498723.2
2030	649364.2	4498454.2	649263.7	4498711.9	649244.8	4498760.5	649255.6	4498732.7
2031	649393.3	4498462.2	649293.2	4498718.8	649276.1	4498762.6	649283.9	4498742.8
2032	649421.3	4498472.9	649323.3	4498724.3	649307.3	4498765.2	649312.5	4498751.9
2033	649449.8	4498482.4	649351.8	4498733.7	649337.6	4498770.2	649340.8	4498761.9
2034	649479.0	4498490.0	649379.9	4498744.2	649366.5	4498778.5	649368.8	4498772.7
2035	649508.1	4498498.0	649409.6	4498750.8	649393.8	4498791.3	649397.0	4498783.0
2036	649537.1	4498506.3	649439.3	4498757.0	649421.2	4498803.5	649425.2	4498793.3
2037	649566.1	4498514.5	649469.9	4498761.3	649449.4	4498813.8	649453.5	4498803.3
2038	649595.0	4498523.0	649500.2	4498766.0	649478.4	4498822.0	649482.6	4498811.3
2039	649624.4	4498530.1	649530.0	4498772.3	649508.7	4498826.7	649511.8	4498819.0
2040	649653.0	4498539.2	649559.4	4498779.5	649538.8	4498832.2	649540.9	4498827.0
2041	649681.1	4498549.9	649589.5	4498784.8	649568.3	4498839.2	649568.8	4498837.9
2042	649710.1	4498557.9	649619.0	4498791.7	649597.1	4498847.9	649597.4	4498847.1
2043	649738.7	4498567.2	649648.6	4498798.4	649626.1	4498856.2	649626.5	4498855.0
2044	649767.1	4498576.9	649678.3	4498804.7	649655.1	4498864.2	649654.6	4498865.7
2045	649795.5	4498586.8	649708.3	4498810.4	649683.8	4498873.2	649682.4	4498876.8
2046	649824.1	4498595.9	649738.7	4498814.9	649712.4	4498882.4	649710.8	4498886.7
2047	649853.0	4498604.4	649768.1	4498822.1	649741.4	4498890.8	649739.4	4498895.8
2048	649880.9	4498615.6	649794.9	4498836.2	649770.6	4498898.5	649769.3	4498901.7
2049	649909.1	4498625.8	649824.2	4498843.6	649800.5	4498904.4	649799.5	4498907.0
2050	649938.0	4498634.1	649853.0	4498852.2	649829.9	4498911.5	649829.1	4498913.6
2051	649965.8	4498645.4	649883.1	4498857.6	649859.0	4498919.5	649857.3	4498923.8
2052	649995.0	4498653.1	649912.2	4498865.6	649888.4	4498926.6	649884.8	4498935.7
2053	650024.0	4498661.3	649940.7	4498875.0	649917.8	4498933.7	649912.8	4498946.5
2054	650053.2	4498669.2	649969.5	4498883.8	649947.3	4498940.6	649941.5	4498955.6
2055	650081.0	4498680.4	649997.8	4498893.8	649976.7	4498947.8	649970.9	4498962.7
2056	650109.2	4498690.6	650026.5	4498902.7	650006.1	4498955.1	650000.3	4498970.0
2057	650139.6	4498695.2	650055.0	4498912.2	650035.5	4498962.3	650028.9	4498979.2
2058	650169.6	4498700.9	650083.7	4498921.3	650064.5	4498970.5	650057.3	4498989.0
2059	650199.1	4498707.8	650112.4	4498930.1	650093.3	4498979.1	650085.1	4499000.2
2060	650228.3	4498715.4	650140.7	4498940.2	650122.0	4498988.0	650113.5	4499010.0
2061	650257.8	4498722.3	650169.3	4498949.5	650150.5	4498997.7	650141.9	4499019.6
2062	650286.8	4498730.5	650197.7	4498959.2	650178.9	4499007.4	650170.8	4499028.1
2063	650314.7	4498741.8	650225.8	4498969.7	650207.9	4499015.6	650200.6	4499034.4
2064	650343.0	4498751.8	650254.5	4498978.6	650237.2	4499023.1	650230.0	4499041.5
2065	650371.4	4498761.3	650283.9	4498985.8	650266.2	4499031.2	650259.9	4499047.4
2066	650400.1	4498770.3	650313.0	4498993.8	650294.8	4499040.5	650288.9	4499055.6
2067	650428.4	4498780.4	650342.6	4499000.3	650323.5	4499049.4	650316.9	4499066.5

Table A-1. High-Water Shoreline Position Change – Rockaway Inlet to Moriches Inlet, New York

	High-Water Shoreline Position Change Rate (m/yr)						High-Water Shoreline Position (UTM Zone 18, NAD 1983)							
	1873/88 to			1933/34 to		1983 to	1873/88		1933/34		1983		1991/97	
Transect #	1933/34	1983	1991/97	1983	1991/97	1991/97	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)
2068	-4.0	-2.6	-2.6	-1.0	-1.2	-2.0	650456.1	4498791.9	650371.6	4499008.7	650353.2	4499055.9	650344.6	4499077.8
2069	-3.9	-2.6	-2.5	-1.0	-1.2	-2.1	650483.8	4498803.6	650400.2	4499017.8	650382.6	4499062.9	650373.7	4499085.8
2070	-3.9	-2.6	-2.5	-1.0	-1.2	-1.8	650511.4	4498815.3	650428.9	4499026.8	650411.2	4499072.3	650403.3	4499092.5
2071	-3.8	-2.5	-2.5	-1.0	-1.2	-1.7	650539.2	4498826.5	650458.1	4499034.6	650439.7	4499081.8	650432.1	4499101.1
2072	-3.6	-2.5	-2.4	-1.1	-1.3	-1.8	650566.0	4498840.4	650488.5	4499039.3	650468.3	4499091.0	650460.5	4499111.1
2073	-3.5	-2.5	-2.4	-1.2	-1.3	-1.9	650593.5	4498852.4	650518.7	4499044.3	650497.0	4499099.9	650489.0	4499120.5
2074	-3.5	-2.4	-2.4	-1.2	-1.3	-2.0	650621.2	4498863.9	650546.8	4499054.9	650525.8	4499108.6	650517.3	4499130.4
2075	-3.4	-2.4	-2.4	-1.2	-1.3	-1.9	650648.9	4498875.6	650575.2	4499064.6	650554.6	4499117.3	650546.2	4499138.9
2076	-3.4	-2.4	-2.3	-1.1	-1.3	-2.0	650676.4	4498887.6	650603.0	4499075.9	650583.4	4499126.1	650574.8	4499148.2
2077	-3.4	-2.3	-2.3	-1.1	-1.3	-2.0	650703.3	4498901.2	650631.5	4499085.4	650612.1	4499135.1	650603.6	4499156.9
2078	-3.3	-2.3	-2.3	-1.1	-1.3	-1.8	650731.0	4498912.7	650661.1	4499092.1	650640.7	4499144.3	650633.0	4499164.1
2079	-3.3	-2.3	-2.2	-1.1	-1.2	-1.6	650759.4	4498922.5	650689.7	4499101.2	650669.4	4499153.3	650662.7	4499170.5
2080	-3.2	-2.3	-2.2	-1.2	-1.2	-1.3	650787.7	4498932.4	650719.5	4499107.4	650697.9	4499162.7	650692.5	4499176.7
2081	-3.1	-2.3	-2.2	-1.3	-1.2	-1.1	650815.6	4498943.6	650749.0	4499114.3	650726.5	4499172.1	650721.8	4499184.1
2082	-3.1	-2.2	-2.1	-1.3	-1.2	-1.1	650842.6	4498956.9	650777.3	4499124.4	650755.1	4499181.4	650750.5	4499193.0
2083	-2.9	-2.2	-2.1	-1.3	-1.3	-1.1	650870.2	4498968.6	650807.3	4499130.0	650783.9	4499190.0	650779.1	4499202.2
2084	-2.9	-2.2	-2.1	-1.3	-1.3	-1.2	650897.9	4498980.1	650836.1	4499138.6	650813.0	4499198.0	650807.8	4499211.3
2085	-2.8	-2.1	-2.1	-1.4	-1.4	-1.4	650925.9	4498990.9	650865.8	4499145.1	650841.9	4499206.5	650835.7	4499222.4
2086	-2.7	-2.1	-2.1	-1.4	-1.4	-1.5	650953.9	4499001.6	650895.4	4499151.8	650870.1	4499216.7	650863.7	4499233.1
2087	-2.6	-2.1	-2.0	-1.5	-1.5	-1.5	650980.6	4499015.8	650925.0	4499158.3	650898.6	4499226.2	650892.0	4499243.2
2088	-2.5	-2.1	-2.0	-1.5	-1.5	-1.5	651008.7	4499026.3	650954.2	4499166.0	650927.7	4499234.0	650921.0	4499251.3
2089	-2.5	-2.0	-2.0	-1.5	-1.5	-1.7	651036.9	4499036.7	650983.0	4499174.8	650956.9	4499241.7	650949.7	4499260.2
2090	-2.5	-2.0	-2.0	-1.4	-1.5	-1.8	651064.3	4499048.9	651011.1	4499185.2	650986.1	4499249.4	650978.4	4499269.3
2091	-2.4	-1.9	-1.9	-1.4	-1.5	-1.8	651091.3	4499062.1	651039.9	4499194.0	651015.3	4499257.3	651007.5	4499277.2
2092	-2.3	-1.9	-1.9	-1.4	-1.5	-1.9	651118.5	4499075.0	651069.1	4499201.6	651044.5	4499264.9	651036.4	4499285.7
2093	-2.3	-1.8	-1.8	-1.3	-1.4	-1.7	651145.7	4499087.8	651097.4	4499211.7	651073.6	4499272.8	651066.1	4499292.0
2094	-2.2	-1.8	-1.8	-1.3	-1.4	-1.5	651173.9	4499098.3	651126.3	4499220.3	651102.5	4499281.4	651095.8	4499298.4
2095	-2.2	-1.8	-1.8	-1.4	-1.4	-1.4	651202.0	4499108.7	651155.7	4499227.5	651131.3	4499289.9	651125.3	4499305.4
2096	-2.1	-1.8	-1.7	-1.3	-1.4	-1.4	651230.3	4499118.7	651184.4	4499236.5	651160.5	4499297.6	651154.5	4499313.0
2097	-2.1	-1.7	-1.7	-1.3	-1.3	-1.3	651258.0	4499130.2	651212.7	4499246.4	651190.1	4499304.5	651184.2	4499319.5
2098	-2.1	-1.7	-1.7	-1.2	-1.2	-1.4	651285.5	4499142.2	651240.0	4499258.9	651219.4	4499311.9	651213.1	4499327.9
2099	-2.2	-1.7	-1.7	-1.1	-1.2	-1.6	651313.1	4499154.1	651267.1	4499272.1	651248.4	4499320.1	651241.2	4499338.4
2100	-2.1	-1.6	-1.6	-1.0	-1.2	-1.9	651339.4	4499169.2	651295.3	4499282.4	651277.5	4499328.1	651269.1	4499349.4
2101	-2.0	-1.5	-1.6	-1.0	-1.2	-2.1	651366.7	4499181.8	651324.7	4499289.5	651306.5	4499336.0	651297.4	4499359.6
2102	-1.9	-1.5	-1.6	-1.1	-1.3	-2.3	651394.9	4499192.1	651354.8	4499294.9	651335.7	4499343.9	651325.6	4499369.7
2103	-1.8	-1.5	-1.6	-1.2	-1.4	-2.3	651423.2	4499202.0	651384.9	4499300.3	651364.3	4499353.1	651354.3	4499378.8
2104	-1.7	-1.5	-1.6	-1.2	-1.4	-2.3	651451.3	4499212.5	651414.7	4499306.3	651393.0	4499362.2	651383.1	4499387.4
2105	-1.6	-1.5	-1.5	-1.3	-1.5	-2.2	651478.6	4499225.0	651444.0	4499313.9	651420.9	4499373.0	651411.5	4499397.2
2106	-1.6	-1.5	-1.5	-1.3	-1.4	-2.1	651505.4	4499238.9	651471.6	4499325.7	651448.6	4499384.7	651439.6	4499407.7
2107	-1.6	-1.5	-1.5	-1.3	-1.5	-2.0	651533.4	4499249.7	651499.7	4499336.2	651476.0	4499396.8	651467.5	4499418.8
2108	-1.6	-1.5	-1.5	-1.3	-1.4	-1.7	651562.1	4499258.8	651526.9	4499349.0	651503.5	4499408.9	651496.0	4499428.2
2109	-1.7	-1.5	-1.5	-1.3	-1.4	-1.7	651590.4	4499268.8	651554.5	4499360.8	651532.0	4499418.5	651524.5	4499437.6
2110	-1.7	-1.5	-1.5	-1.2	-1.3	-1.9	651617.6	4499281.5	651582.2	4499372.4	651560.9	4499427.0	651552.5	4499448.4
2111	-1.6	-1.4	-1.5	-1.2	-1.4	-2.2	651644.6	4499294.8	651609.8	4499384.1	651589.0	4499437.3	651579.5	4499461.8
2112	-1.7	-1.4	-1.5	-1.1	-1.4	-2.6	651672.4	4499306.2	651637.1	4499396.6	651617.8	4499446.2	651606.5	4499475.1
2113	-1.7	-1.4	-1.5	-1.0	-1.3	-2.8	651700.4	4499316.9	651664.3	4499409.4	651646.8	4499454.4	651634.6	4499485.7
2114	-1.7	-1.3	-1.5	-0.9	-1.3	-2.9	651727.4	4499330.2	651691.7	4499421.7	651675.3	4499464.0	651662.7	4499496.1
2115	-1.7	-1.3	-1.5	-0.9	-1.3	-2.9	651755.1	4499341.9	651719.1	4499434.1	651703.3	4499474.7	651690.7	4499506.9
2116	-1.7	-1.3	-1.5	-0.9	-1.3	-2.7	651782.2	4499354.8	651746.5	4499446.4	651730.7	4499487.0	651718.7	4499517.6
2117	-1.7	-1.3	-1.5	-0.9	-1.2	-2.5	651810.8	4499364.0	651773.9	4499458.6	651758.1	4499499.2	651747.3	4499527.0
2118	-1.8	-1.4	-1.5	-0.9	-1.1	-2.2	651839.7	4499372.6	651801.4	4499470.7	651785.9	4499510.5	651776.2	4499535.4
2119	-1.8	-1.4	-1.4	-0.9	-1.1	-2.1	651867.8	4499383.1	651829.8	4499480.5	651813.9	4499521.2	651805.0	4499544.1
2120	-1.7	-1.4	-1.4	-0.9	-1.1	-1.9	651895.7	4499394.2	651858.5	4499489.5	651842.3	4499531.1	651833.8	4499552.9

Table A-1. High-Water Shoreline Position Change – Rockaway Inlet to Moriches Inlet, New York

	High-Water Shoreline Position Change Rate (m/yr)						High-Water Shoreline Position (UTM Zone 18, NAD 1983)							
	1873/88 to			1933/34 to		1983 to	1873/88		1933/34		1983		1991/97	
Transect #	1933/34	1983	1991/97	1983	1991/97	1991/97	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)
2121	-1.7	-1.3	-1.4	-0.9	-1.1	-1.8	651922.5	4499407.9	651886.7	4499499.8	651870.6	4499541.0	651862.6	4499561.6
2122	-1.7	-1.3	-1.4	-0.9	-1.1	-1.8	651951.8	4499415.5	651915.8	4499507.8	651899.0	4499550.8	651891.2	4499570.7
2123	-1.6	-1.3	-1.4	-1.0	-1.1	-1.7	651978.3	4499429.9	651944.6	4499516.5	651927.2	4499561.0	651919.7	4499580.3
2124	-1.5	-1.3	-1.3	-1.0	-1.2	-1.8	652004.2	4499446.1	651972.8	4499526.8	651954.8	4499573.0	651946.9	4499593.1
2125	-1.5	-1.3	-1.3	-1.0	-1.2	-1.9	652032.1	4499457.1	652000.8	4499537.4	651982.4	4499584.7	651974.2	4499605.8
2126	-1.5	-1.3	-1.3	-1.0	-1.2	-2.0	652059.9	4499468.6	652028.4	4499549.2	652010.4	4499595.5	652001.7	4499617.8
2127	-1.5	-1.3	-1.3	-1.0	-1.2	-1.9	652087.2	4499481.1	652056.2	4499560.5	652038.2	4499606.6	652030.0	4499627.7
2128	-1.3	-1.2	-1.2	-1.0	-1.2	-1.7	652112.7	4499498.1	652084.5	4499570.5	652066.0	4499617.9	652058.8	4499636.4
2129	-1.2	-1.1	-1.2	-1.1	-1.2	-1.6	652138.6	4499514.3	652113.1	4499579.9	652093.8	4499629.2	652086.7	4499647.6
2130	-1.1	-1.1	-1.2	-1.1	-1.2	-1.6	652165.6	4499527.8	652141.7	4499589.0	652121.4	4499641.0	652114.6	4499658.4
2131	-1.0	-1.1	-1.1	-1.2	-1.2	-1.4	652190.8	4499545.6	652170.5	4499597.7	652149.2	4499652.4	652143.1	4499668.0
2132	-0.9	-1.1	-1.1	-1.2	-1.3	-1.5	652218.5	4499557.3	652198.7	4499607.9	652176.8	4499664.1	652170.5	4499680.3
2133	-1.1	-1.1	-1.2	-1.2	-1.3	-1.4	652248.8	4499562.1	652226.4	4499619.6	652204.3	4499676.1	652198.2	4499691.9
2134	-1.1	-1.2	-1.2	-1.3	-1.3	-1.3	652277.4	4499571.3	652255.0	4499628.7	652232.1	4499687.4	652226.4	4499702.2
2135	-1.1	-1.2	-1.2	-1.3	-1.3	-1.4	652306.4	4499579.5	652283.4	4499638.5	652260.4	4499697.6	652254.4	4499713.0
2136	-1.1	-1.2	-1.2	-1.3	-1.3	-1.5	652335.1	4499588.4	652311.6	4499648.8	652289.1	4499706.4	652282.8	4499722.7
2137	-1.1	-1.2	-1.2	-1.3	-1.3	-1.3	652363.0	4499599.6	652340.1	4499658.1	652317.7	4499715.6	652312.1	4499730.2
2138	-1.0	-1.1	-1.1	-1.3	-1.2	-1.0	652390.4	4499611.7	652368.9	4499667.1	652345.8	4499726.3	652341.4	4499737.6
2139	-1.0	-1.1	-1.1	-1.3	-1.2	-0.8	652418.4	4499622.5	652398.1	4499674.6	652374.3	4499735.6	652370.9	4499744.3
2140	-0.9	-1.1	-1.0	-1.4	-1.2	-0.4	652446.5	4499633.1	652428.0	4499680.5	652403.2	4499744.3	652401.3	4499749.1
2141	-0.8	-1.1	-1.0	-1.4	-1.2	-0.0	652474.6	4499643.7	652457.7	4499686.9	652432.1	4499752.7	652432.0	4499752.9
2142	-0.8	-1.1	-0.9	-1.4	-1.0	0.6	652503.1	4499653.2	652486.2	4499696.6	652460.9	4499761.3	652463.5	4499754.7
2143	-0.8	-1.1	-0.8	-1.4	-0.9	1.2	652531.1	4499664.0	652515.0	4499705.3	652489.7	4499770.1	652494.8	4499757.0
2144	-0.8	-1.1	-0.8	-1.4	-0.8	1.6	652559.4	4499673.8	652542.6	4499717.1	652518.4	4499779.1	652525.1	4499761.8
2145	-0.8	-1.0	-0.8	-1.3	-0.7	1.9	652587.7	4499683.9	652570.7	4499727.4	652547.1	4499788.0	652555.2	4499767.3
2146	-0.8	-1.0	-0.7	-1.3	-0.7	1.8	652615.6	4499694.9	652599.3	4499736.7	652576.1	4499796.1	652584.2	4499775.5
2147	-0.8	-1.0	-0.7	-1.3	-0.7	1.7	652644.0	4499704.6	652627.6	4499746.6	652605.2	4499804.2	652612.6	4499785.2
2148	-0.8	-1.0	-0.7	-1.2	-0.7	1.6	652672.3	4499714.6	652656.0	4499756.4	652633.9	4499813.1	652640.8	4499795.4
2149	-0.7	-1.0	-0.7	-1.3	-0.7	1.6	652699.4	4499727.8	652684.5	4499766.0	652661.6	4499824.7	652668.5	4499807.1
2150	-0.7	-1.0	-0.8	-1.4	-0.8	1.3	652727.1	4499739.3	652713.2	4499774.8	652689.0	4499837.1	652694.6	4499822.6
2151	-0.6	-1.0	-0.8	-1.4	-1.0	0.9	652755.3	4499749.6	652741.5	4499785.0	652716.3	4499849.6	652720.3	4499839.3
2152	-0.7	-1.0	-0.8	-1.5	-1.0	0.9	652783.9	4499758.8	652769.8	4499794.9	652743.9	4499861.4	652747.8	4499851.4
2153	-0.7	-1.1	-0.8	-1.5	-1.0	1.1	652812.8	4499767.3	652798.7	4499803.4	652771.5	4499873.2	652776.1	4499861.4
2154	-0.7	-1.1	-0.8	-1.6	-1.0	1.3	652841.6	4499776.1	652827.4	4499812.3	652799.2	4499884.8	652804.8	4499870.3
2155	-0.6	-1.1	-0.8	-1.6	-1.0	1.5	652869.5	4499787.0	652856.1	4499821.3	652827.2	4499895.4	652833.7	4499878.8
2156	-0.6	-1.1	-0.8	-1.7	-1.0	1.6	652897.0	4499799.0	652884.9	4499830.1	652855.6	4499905.3	652862.5	4499887.5
2157	-0.6	-1.0	-0.8	-1.6	-0.9	1.6	652924.8	4499810.3	652912.2	4499842.8	652884.3	4499914.2	652891.4	4499896.1
2158	-0.6	-1.0	-0.7	-1.5	-0.9	1.7	652952.9	4499820.9	652939.8	4499854.5	652913.4	4499922.2	652920.6	4499903.7
2159	-0.7	-1.0	-0.7	-1.4	-0.8	1.8	652980.9	4499831.6	652967.0	4499867.2	652942.4	4499930.3	652950.1	4499910.6
2160	-0.7	-1.0	-0.7	-1.3	-0.6	1.8	653009.0	4499842.2	652993.7	4499881.3	652971.5	4499938.4	652979.5	4499917.8
2161	-0.8	-0.9	-0.7	-1.2	-0.6	1.9	653037.0	4499852.9	653020.8	4499894.4	653000.3	4499947.0	653008.7	4499925.6
2162	-0.8	-0.9	-0.7	-1.1	-0.5	1.9	653065.5	4499862.3	653048.8	4499905.2	653029.1	4499955.8	653037.1	4499935.2
2163	-0.8	-0.9	-0.7	-1.1	-0.5	1.7	653094.0	4499871.9	653076.5	4499916.6	653057.8	4499964.6	653065.1	4499946.0
2164	-0.9	-0.9	-0.7	-1.0	-0.5	1.4	653122.6	4499881.0	653103.9	4499929.1	653086.9	4499972.7	653092.9	4499957.2
2165	-0.9	-0.9	-0.7	-0.8	-0.5	1.1	653150.7	4499891.6	653131.1	4499941.9	653116.4	4499979.6	653121.1	4499967.5
2166	-0.9	-0.8	-0.7	-0.8	-0.4	0.9	653177.9	4499904.4	653159.4	4499952.0	653145.8	4499986.7	653149.6	4499977.0
2167	-0.9	-0.8	-0.6	-0.6	-0.4	0.6	653206.2	4499914.3	653187.3	4499963.0	653176.1	4499991.6	653178.7	4499985.0
2168	-0.9	-0.7	-0.6	-0.5	-0.4	0.1	653234.3	4499925.1	653215.1	4499974.3	653206.1	4499997.3	653206.5	4499996.3
2169	-0.9	-0.7	-0.7	-0.5	-0.4	0.1	653262.0	4499936.5	653242.5	4499986.4	653233.6	4500009.3	653233.9	4500008.7
2170	-0.9	-0.8	-0.6	-0.6	-0.4	0.3	653290.1	4499947.1	653270.7	4499996.8	653260.8	4500022.1	653262.1	4500018.8
2171	-0.8	-0.8	-0.6	-0.7	-0.4	0.6	653317.8	4499958.6	653299.7	4500004.9	653288.0	4500035.0	653290.5	4500028.6
2172	-0.8	-0.7	-0.6	-0.7	-0.5	0.6	653345.0	4499971.4	653328.5	4500013.8	653315.8	4500046.2	653318.3	4500039.9
2173	-0.8	-0.7	-0.6	-0.7	-0.5	0.4	653372.8	4499982.8	653356.6	4500024.3	653344.0	4500056.5	653345.5	4500052.6

Table A-1. High-Water Shoreline Position Change – Rockaway Inlet to Moriches Inlet, New York

High-Water Shoreline Position Change Rate (m/yr)						
		1873/88 to		1933/34 to		1983 to
Transect #	1933/34	1983	1991/97	1983	1991/97	1991/97
2174	-0.7	-0.7	-0.6	-0.7	-0.5	0.2
2175	-0.7	-0.7	-0.6	-0.7	-0.5	0.3
2176	-0.7	-0.7	-0.6	-0.7	-0.5	0.2
2177	-0.7	-0.7	-0.6	-0.6	-0.5	0.0
2178	-0.7	-0.6	-0.6	-0.5	-0.4	-0.0
2179	-0.6	-0.5	-0.5	-0.4	-0.4	-0.2
2180	-0.6	-0.5	-0.5	-0.4	-0.4	-0.2
2181	-0.6	-0.5	-0.4	-0.4	-0.3	0.4
2182	-0.7	-0.5	-0.4	-0.4	-0.1	1.3
2183	-0.7	-0.6	-0.3	-0.4	0.1	2.5
2184	-0.6	-0.6	-0.2	-0.5	0.3	3.4
2185	-0.7	-0.5	-0.1	-0.4	0.4	3.5
2186	-0.7	-0.6	-0.2	-0.4	0.3	3.4
2187	-0.7	-0.6	-0.2	-0.4	0.3	3.2
2188	-0.7	-0.6	-0.2	-0.4	0.3	2.9
2189	-0.7	-0.6	-0.2	-0.4	0.3	2.7
2190	-0.8	-0.6	-0.3	-0.4	0.3	2.7
2191	-0.7	-0.6	-0.2	-0.4	0.3	3.1
2192	-0.8	-0.6	-0.2	-0.5	0.4	3.8
2193	-0.8	-0.7	-0.1	-0.5	0.6	4.8
2194	-0.8	-0.7	-0.1	-0.5	0.7	5.8
2195	-0.8	-0.7	0.0	-0.6	0.8	6.5
2196	-0.8	-0.7	0.1	-0.5	1.0	7.3
2197	-0.8	-0.7	0.2	-0.6	1.1	7.7
2198	-0.8	-0.7	0.2	-0.5	1.1	7.8
2199	-0.8	-0.6	0.2	-0.4	1.2	7.5
2200	-0.8	-0.6	0.2	-0.4	1.2	7.6
2201	-0.9	-0.7	0.2	-0.4	1.2	7.8
2202	-0.9	-0.7	0.2	-0.5	1.2	8.0
2203	-0.9	-0.7	0.2	-0.5	1.2	8.0
2204	-0.8	-0.7	0.2	-0.5	1.1	7.8
2205	-0.8	-0.7	0.1	-0.6	1.0	7.4
2206	-0.7	-0.7	0.1	-0.6	0.9	7.1
2207	-0.7	-0.7	0.1	-0.7	0.8	6.9
2208	-0.8	-0.7	0.1	-0.7	0.8	7.0
2209	-0.8	-0.8	0.0	-0.7	0.8	6.9
2210	-0.8	-0.8	-0.0	-0.7	0.7	6.8
2211	-0.8	-0.8	-0.1	-0.7	0.7	6.5
2212	-0.8	-0.8	-0.1	-0.7	0.6	6.1
2213	-0.8	-0.8	-0.1	-0.7	0.5	5.7
2214	-0.7	-0.7	-0.1	-0.7	0.4	5.3
2215	-0.7	-0.7	-0.2	-0.7	0.4	4.9
2216	-0.7	-0.7	-0.2	-0.8	0.3	4.6
2217	-0.6	-0.7	-0.2	-0.8	0.2	4.2
2218	-0.6	-0.7	-0.2	-0.8	0.1	3.9
2219	-0.6	-0.7	-0.3	-0.9	0.1	3.8
2220	-0.5	-0.7	-0.3	-0.9	-0.0	3.6
2221	-0.4	-0.7	-0.3	-1.0	-0.2	3.2
2222	-0.5	-0.7	-0.3	-0.9	-0.2	2.5
2223	-0.5	-0.7	-0.4	-0.9	-0.3	2.0
2224	-0.4	-0.6	-0.4	-0.8	-0.4	1.5
2225	-0.4	-0.6	-0.4	-0.8	-0.4	1.3
2226	-0.4	-0.6	-0.4	-0.8	-0.4	1.3

High-Water Shoreline Position (UTM Zone 18, NAD 1983)								
	1873/88		1933/34		1983		1991/97	
Transect #	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)
2174	653400.5	4499994.3	653384.6	4500035.1	653372.2	4500066.7	653373.1	4500064.5
2175	653428.6	4500004.7	653413.0	4500044.8	653400.4	4500077.0	653401.5	4500074.2
2176	653456.7	4500015.2	653441.4	4500054.5	653429.2	4500085.7	653429.9	4500083.9
2177	653484.5	4500026.5	653469.2	4500065.9	653458.6	4500093.0	653458.7	4500092.7
2178	653512.2	4500038.0	653496.7	4500077.8	653487.9	4500100.3	653487.8	4500100.7
2179	653539.0	4500051.8	653525.6	4500086.2	653517.8	4500106.2	653517.2	4500107.9
2180	653566.7	4500063.4	653554.8	4500094.0	653547.9	4500111.6	653547.0	4500114.0
2181	653595.4	4500072.3	653582.6	4500105.2	653575.6	4500123.2	653577.2	4500119.2
2182	653623.1	4500084.0	653609.2	4500119.5	653602.5	4500136.8	653608.0	4500122.6
2183	653651.5	4500093.8	653636.8	4500131.5	653629.0	4500151.5	653639.9	4500123.5
2184	653678.8	4500106.3	653665.2	4500141.1	653656.5	4500163.5	653671.1	4500125.9
2185	653706.1	4500118.9	653692.2	4500154.4	653684.7	4500173.7	653700.0	4500134.5
2186	653735.3	4500126.6	653720.0	4500165.9	653712.5	4500184.9	653727.2	4500147.3
2187	653763.7	4500136.2	653748.1	4500176.4	653741.1	4500194.3	653755.0	4500158.6
2188	653792.2	4500145.7	653776.9	4500185.0	653769.7	4500203.5	653782.4	4500170.9
2189	653820.4	4500156.1	653804.8	4500196.1	653798.4	4500212.5	653810.2	4500182.1
2190	653849.1	4500165.0	653833.0	4500206.3	653826.6	4500222.8	653838.4	4500192.3
2191	653877.2	4500175.6	653861.6	4500215.6	653854.0	4500235.0	653867.4	4500200.7
2192	653906.7	4500182.5	653890.6	4500223.8	653881.8	4500246.3	653898.5	4500203.6
2193	653936.7	4500188.1	653918.7	4500234.3	653909.8	4500257.0	653930.9	4500203.0
2194	653965.5	4500196.7	653947.8	4500242.2	653938.2	4500266.9	653963.3	4500202.4
2195	653994.3	4500205.6	653977.1	4500249.6	653967.2	4500275.0	653995.6	4500202.1
2196	654022.8	4500215.1	654005.4	4500259.7	653996.2	4500283.2	654028.1	4500201.3
2197	654052.1	4500222.4	654035.3	4500265.7	654024.9	4500292.2	654058.6	4500205.7
2198	654081.1	4500230.6	654063.6	4500275.5	654054.6	4500298.5	654088.6	4500211.3
2199	654109.7	4500240.0	654092.0	4500285.2	654085.2	4500302.8	654118.0	4500218.6
2200	654138.1	4500249.6	654120.7	4500294.2	654114.0	4500311.5	654147.0	4500226.8
2201	654166.9	4500258.4	654148.5	4500305.5	654141.6	4500323.3	654175.5	4500236.4
2202	654195.9	4500266.5	654177.4	4500314.0	654169.0	4500335.6	654203.7	4500246.6
2203	654224.4	4500276.1	654206.2	4500322.8	654197.0	4500346.4	654232.0	4500256.5
2204	654253.2	4500284.9	654235.5	4500330.0	654226.0	4500354.7	654259.9	4500267.6
2205	654281.9	4500293.8	654265.5	4500335.9	654255.0	4500362.8	654287.4	4500279.6
2206	654310.1	4500303.9	654294.9	4500343.0	654283.5	4500372.2	654314.5	4500292.7
2207	654338.8	4500313.1	654323.6	4500351.9	654311.8	4500382.1	654342.1	4500304.6
2208	654367.8	4500321.2	654351.3	4500363.5	654339.5	4500393.7	654369.9	4500315.8
2209	654397.0	4500328.8	654379.8	4500373.0	654367.3	4500405.0	654397.4	4500327.8
2210	654425.9	4500337.3	654408.7	4500381.5	654395.7	4500414.8	654425.1	4500339.4
2211	654455.0	4500345.2	654437.7	4500389.7	654424.7	4500423.1	654453.1	4500350.2
2212	654484.0	4500353.5	654467.4	4500396.2	654454.2	4500429.8	654480.9	4500361.5
2213	654513.2	4500361.2	654496.9	4500402.9	654483.8	4500436.5	654508.5	4500373.2
2214	654542.0	4500370.0	654526.3	4500410.2	654513.2	4500443.8	654536.1	4500385.0
2215	654570.7	4500378.8	654555.4	4500418.2	654542.4	4500451.4	654563.7	4500396.8
2216	654599.3	4500388.1	654584.4	4500426.3	654571.0	4500460.8	654591.0	4500409.3
2217	654627.1	4500399.5	654613.3	4500434.9	654599.9	4500469.1	654618.1	4500422.5
2218	654655.6	4500409.0	654642.5	4500442.5	654628.3	4500478.9	654645.4	4500435.1
2219	654684.0	4500418.6	654671.6	4500450.5	654656.2	4500489.8	654672.7	4500447.6
2220	654711.6	4500430.3	654700.6	4500458.5	654684.4	4500500.3	654699.9	4500460.4
2221	654739.4	4500441.7	654730.3	4500465.2	654712.9	4500509.6	654727.0	4500473.4
2222	654769.0	4500448.5	654759.3	4500473.1	654743.1	4500514.9	654754.1	4500486.5
2223	654798.5	4500455.2	654788.5	4500480.9	654772.4	4500522.2	654781.1	4500499.9
2224	654825.8	4500467.8	654816.9	4500490.7	654801.9	4500529.2	654808.5	4500512.2
2225	654854.1	4500477.9	654844.9	4500501.5	654831.1	4500536.8	654836.7	4500522.4
2226	654883.0	4500486.3	654874.2	4500509.0	654859.7	4500546.2	654865.1	4500532.2

Table A-1. High-Water Shoreline Position Change – Rockaway Inlet to Moriches Inlet, New York

	High-Water Shoreline Position Change Rate (m/yr)						High-Water Shoreline Position (UTM Zone 18, NAD 1983)							
	1873/88 to			1933/34 to		1983 to	1873/88		1933/34		1983		1991/97	
Transect #	1933/34	1983	1991/97	1983	1991/97	1991/97	Transect #	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)
2227	-0.4	-0.6	-0.4	-0.8	-0.4	1.1	2227	654911.8	4500495.1	654902.5	4500518.8	654888.8	4500554.1	654893.5	4500541.9
2228	-0.4	-0.5	-0.4	-0.7	-0.4	0.9	2228	654939.3	4500507.1	654931.2	4500527.8	654918.2	4500561.2	654922.1	4500551.2
2229	-0.3	-0.5	-0.4	-0.7	-0.4	0.7	2229	654966.6	4500519.6	654960.1	4500536.2	654947.6	4500568.4	654950.8	4500560.2
2230	-0.2	-0.5	-0.4	-0.7	-0.5	0.7	2230	654994.6	4500530.3	654989.7	4500543.0	654976.7	4500576.4	654979.5	4500569.1
2231	-0.2	-0.5	-0.4	-0.8	-0.5	0.5	2231	655023.3	4500539.4	655019.6	4500548.9	655005.3	4500585.6	655007.6	4500579.8
2232	-0.1	-0.5	-0.4	-0.9	-0.6	0.4	2232	655051.4	4500549.9	655048.6	4500557.2	655033.5	4500596.0	655035.3	4500591.2
2233	-0.1	-0.5	-0.4	-0.8	-0.6	0.3	2233	655080.0	4500559.2	655077.1	4500566.7	655062.5	4500604.1	655063.7	4500601.0
2234	-0.2	-0.4	-0.4	-0.8	-0.6	0.2	2234	655108.9	4500567.7	655105.7	4500575.8	655091.8	4500611.4	655092.6	4500609.6
2235	-0.2	-0.4	-0.4	-0.7	-0.5	0.1	2235	655137.6	4500576.6	655133.6	4500586.9	655121.1	4500619.0	655121.7	4500617.4
2236	-0.2	-0.4	-0.4	-0.7	-0.6	-0.0	2236	655166.2	4500585.9	655162.3	4500595.8	655150.4	4500626.4	655150.2	4500626.9
2237	-0.1	-0.4	-0.4	-0.7	-0.6	-0.1	2237	655194.7	4500595.3	655191.7	4500603.1	655178.6	4500636.6	655178.1	4500638.0
2238	-0.2	-0.4	-0.4	-0.8	-0.7	-0.3	2238	655223.8	4500603.3	655220.6	4500611.4	655206.7	4500647.2	655205.3	4500650.7
2239	-0.2	-0.4	-0.5	-0.8	-0.7	-0.6	2239	655252.8	4500611.5	655249.5	4500620.0	655235.6	4500655.7	655233.1	4500662.0
2240	-0.2	-0.5	-0.5	-0.8	-0.8	-0.6	2240	655281.9	4500619.4	655278.4	4500628.5	655263.9	4500665.6	655261.1	4500672.8
2241	-0.2	-0.5	-0.5	-0.9	-0.8	-0.6	2241	655310.8	4500627.9	655307.4	4500636.7	655291.8	4500676.8	655288.9	4500683.9
2242	-0.2	-0.5	-0.5	-0.9	-0.9	-0.8	2242	655340.0	4500635.6	655336.6	4500644.4	655320.0	4500687.0	655316.6	4500695.7
2243	-0.2	-0.6	-0.6	-1.0	-1.0	-0.9	2243	655369.5	4500642.4	655365.5	4500652.9	655348.1	4500697.5	655344.3	4500707.0
2244	-0.2	-0.6	-0.6	-1.0	-1.0	-0.9	2244	655398.2	4500651.4	655393.8	4500662.7	655376.2	4500708.0	655372.4	4500717.5
2245	-0.2	-0.6	-0.6	-1.0	-1.0	-1.0	2245	655426.9	4500660.4	655422.6	4500671.4	655405.3	4500715.8	655400.9	4500727.2
2246	-0.2	-0.5	-0.6	-0.9	-1.0	-1.3	2246	655455.9	4500668.8	655450.9	4500681.6	655434.7	4500723.0	655429.2	4500737.3
2247	-0.3	-0.5	-0.6	-0.9	-1.0	-1.4	2247	655485.0	4500676.5	655478.9	4500692.2	655463.7	4500731.2	655457.5	4500747.2
2248	-0.4	-0.6	-0.7	-0.8	-1.0	-1.6	2248	655514.5	4500683.6	655507.0	4500702.8	655493.0	4500738.7	655485.9	4500756.9
2249	-0.4	-0.6	-0.7	-0.7	-0.9	-1.9	2249	655544.0	4500690.5	655535.0	4500713.5	655522.4	4500746.0	655514.3	4500766.6
2250	-0.5	-0.6	-0.7	-0.7	-0.9	-1.9	2250	655573.5	4500697.4	655563.8	4500722.3	655551.8	4500753.2	655543.4	4500774.5
2251	-0.5	-0.6	-0.7	-0.6	-0.9	-1.8	2251	655602.6	4500705.4	655592.2	4500731.9	655581.0	4500760.9	655573.1	4500781.0
2252	-0.5	-0.5	-0.7	-0.6	-0.8	-1.8	2252	655631.7	4500713.3	655620.2	4500742.9	655610.4	4500767.8	655602.6	4500788.0
2253	-0.6	-0.5	-0.7	-0.4	-0.7	-1.9	2253	655660.9	4500720.9	655648.1	4500753.9	655640.4	4500773.6	655632.2	4500794.5
2254	-0.6	-0.5	-0.6	-0.4	-0.7	-1.9	2254	655690.2	4500728.5	655676.7	4500762.9	655670.5	4500779.0	655662.4	4500799.8
2255	-0.6	-0.5	-0.6	-0.3	-0.6	-1.9	2255	655718.8	4500737.6	655706.3	4500769.6	655700.5	4500784.6	655692.2	4500805.9
2256	-0.6	-0.4	-0.6	-0.2	-0.6	-1.8	2256	655746.7	4500748.6	655734.9	4500779.0	655730.5	4500790.1	655722.5	4500810.6
2257	-0.6	-0.4	-0.5	-0.1	-0.4	-1.8	2257	655775.5	4500757.3	655763.5	4500788.2	655762.0	4500792.0	655754.2	4500812.1
2258	-0.6	-0.3		0.1			2258	655804.7	4500765.1	655792.1	4500797.5	655792.9	4500796.3		
2259	-0.6	-0.3	-0.2	0.1	0.1	0.3	2259	655833.5	4500773.9	655820.4	4500807.4	655821.8	4500803.8	655823.1	4500800.5
2260	-0.6	-0.3	-0.3	0.1	0.1	0.2	2260	655862.4	4500782.2	655849.1	4500816.3	655850.1	4500813.8	655850.9	4500811.7
2261	-0.6	-0.3	-0.3	0.0	0.0	0.1	2261	655891.2	4500791.0	655878.2	4500824.4	655878.2	4500824.2	655878.7	4500823.2
2262	-0.6	-0.3	-0.3	0.1	0.0	-0.1	2262	655919.5	4500800.9	655906.5	4500834.3	655907.8	4500830.9	655907.3	4500832.4
2263	-0.6	-0.3	-0.3	0.1	0.1	-0.1	2263	655947.5	4500811.7	655934.4	4500845.3	655937.0	4500838.7	655936.5	4500839.9
2264	-0.7	-0.2	-0.2	0.3	0.2	-0.1	2264	655976.0	4500821.3	655962.1	4500857.0	655967.2	4500843.8	655966.7	4500845.1
2265	-0.7	-0.2	-0.2	0.4	0.3	0.2	2265	656004.4	4500831.0	655990.6	4500866.5	655997.4	4500849.1	655998.1	4500847.3
2266	-0.6	-0.2	-0.2	0.4	0.3	-0.2	2266	656032.9	4500840.5	656019.5	4500874.8	656027.0	4500855.7	656026.2	4500857.7
2267	-0.6	-0.2	-0.2	0.4	0.3	-0.1	2267	656061.3	4500850.4	656048.4	4500883.3	656055.4	4500865.4	656054.8	4500867.0
2268	-0.6	-0.2	-0.2	0.4	0.3	-0.2	2268	656090.4	4500858.3	656077.8	4500890.6	656083.9	4500874.7	656083.3	4500876.5
2269	-0.6	-0.2	-0.2	0.3	0.2	-0.3	2269	656119.5	4500866.2	656107.5	4500897.0	656112.9	4500883.2	656111.7	4500886.2
2270	-0.5	-0.2	-0.2	0.3	0.2	-0.4	2270	656147.8	4500876.0	656136.6	4500904.8	656141.7	4500891.9	656140.1	4500895.9
2271	-0.4	-0.1	-0.2	0.2	0.1	-0.4	2271	656176.0	4500886.4	656166.8	4500910.0	656170.4	4500900.7	656168.6	4500905.3
2272	-0.4	-0.1	-0.2	0.2	0.1	-0.6	2272	656204.9	4500894.9	656196.0	4500917.7	656199.6	4500908.5	656197.1	4500915.0
2273	-0.4	-0.1	-0.2	0.3	0.1	-0.9	2273	656233.5	4500904.1	656224.4	4500927.4	656229.5	4500914.5	656225.4	4500924.7
2274	-0.4	-0.1	-0.2	0.3	0.0	-1.1	2274	656261.8	4500914.1	656253.4	4500935.7	656259.0	4500921.3	656254.1	4500934.0
2275	-0.3	-0.0	-0.2	0.3	0.0	-1.1	2275	656289.6	4500925.3	656282.5	4500943.6	656288.0	4500929.4	656283.2	4500941.9
2276	-0.3	0.0	-0.1	0.3	0.0	-1.2	2276	656317.1	4500937.5	656311.3	4500962.2	656317.1	4500937.5	656311.9	4500950.7
2277	-0.2	0.0	-0.1	0.3	0.0	-1.3	2277	656345.4	4500947.4	656340.6	4500959.6	656346.5	4500944.6	656340.8	4500959.2
2278	-0.2	0.0	-0.1	0.4	0.0	-1.5	2278	656374.8	4500954.6	656369.9	4500967.3	656376.4	4500950.4	656370.0	4500967.0
2279	-0.3	0.1	-0.1	0.4	0.0	-1.7	2279	656404.1	4500962.0	656398.8	4500975.7	656406.6	4500955.8	656399.3	4500974.3

Table A-1. High-Water Shoreline Position Change – Rockaway Inlet to Moriches Inlet, New York

High-Water Shoreline Position Change Rate (m/yr)						High-Water Shoreline Position (UTM Zone 18, NAD 1983)								
1873/88 to			1933/34 to		1983 to	1873/88			1933/34			1983		1991/97
Transect #	1933/34	1983	1991/97	1983	1991/97	1991/97	Transect #	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)
2280	-0.3	0.1	-0.1	0.5	0.1	-1.8	2280	656432.5	4500971.8	656427.0	4500985.9	656436.3	4500962.0	656428.6	4500981.9
2281	-0.3	0.1	-0.1	0.6	0.1	-1.9	2281	656461.4	4500980.2	656455.9	4500994.4	656465.9	4500968.7	656457.8	4500989.5
2282	-0.3	0.1	-0.1	0.6	0.1	-1.9	2282	656490.1	4500989.2	656484.5	4501003.6	656495.5	4500975.4	656487.3	4500996.5
2283	-0.3	0.2	-0.1	0.7	0.2	-1.8	2283	656519.1	4500997.5	656513.4	4501012.0	656525.0	4500982.4	656517.0	4501002.8
2284	-0.2	0.2	-0.0	0.6	0.2	-1.7	2284	656547.9	4501006.1	656543.0	4501018.8	656554.1	4500990.4	656546.5	4501009.7
2285	-0.2	0.2	-0.0	0.6	0.1	-1.9	2285	656576.9	4501014.3	656572.9	4501024.6	656583.9	4500996.5	656575.6	4501017.8
2286	-0.2	0.2	-0.1	0.6	0.1	-2.1	2286	656606.8	4501020.2	656602.4	4501031.6	656613.6	4501002.7	656604.7	4501025.6
2287	-0.3	0.2	-0.1	0.6	0.1	-2.1	2287	656636.7	4501026.2	656631.0	4501040.9	656642.4	4501011.6	656633.4	4501034.5
2288	-0.3	0.1	-0.1	0.6	0.1	-2.3	2288	656666.1	4501033.5	656659.9	4501049.3	656671.3	4501020.0	656661.4	4501045.5
2289	-0.3	0.1	-0.1	0.7	0.0	-2.6	2289	656695.2	4501041.2	656688.9	4501057.5	656700.4	4501027.9	656689.1	4501056.9
2290	-0.3	0.1	-0.2	0.7	-0.0	-2.9	2290	656724.4	4501049.0	656718.0	4501065.3	656729.8	4501035.2	656717.2	4501067.3
2291	-0.3	0.1	-0.2	0.6	-0.1	-3.1	2291	656753.5	4501056.9	656747.4	4501072.5	656758.8	4501043.4	656745.3	4501078.1
2292	-0.3	0.1	-0.2	0.6	-0.2	-3.2	2292	656782.5	4501065.2	656777.0	4501079.3	656787.3	4501052.9	656773.5	4501088.3
2293	-0.2	0.1	-0.2	0.5	-0.2	-3.2	2293	656811.2	4501074.0	656806.4	4501086.5	656815.7	4501062.6	656801.7	4501098.6
2294	-0.2	0.1	-0.2	0.5	-0.2	-3.3	2294	656839.6	4501083.9	656835.3	4501094.9	656844.1	4501072.3	656829.9	4501108.8
2295	-0.2	0.1	-0.2	0.5	-0.3	-3.3	2295	656868.5	4501092.4	656864.0	4501104.0	656872.5	4501082.1	656858.1	4501119.0
2296	-0.2	0.1	-0.3	0.5	-0.3	-3.4	2296	656897.6	4501100.3	656892.5	4501113.4	656900.7	4501092.2	656886.1	4501129.7
2297	-0.3	0.1	-0.3	0.4	-0.3	-3.5	2297	656926.6	4501108.5	656921.1	4501122.6	656929.0	4501102.4	656913.9	4501141.0
2298	-0.3	0.0	-0.3	0.4	-0.3	-3.4	2298	656955.7	4501116.5	656949.9	4501131.2	656957.3	4501112.4	656942.4	4501150.5
2299	-0.3	0.0	-0.3	0.4	-0.4	-3.3	2299	656984.6	4501124.9	656978.7	4501139.9	656985.4	4501122.9	656971.1	4501159.6
2300	-0.2	0.0	-0.3	0.3	-0.4	-3.2	2300	657013.1	4501134.5	657008.1	4501147.1	657013.5	4501133.3	656999.5	4501169.2
2301	-0.2	0.0	-0.3	0.3	-0.4	-3.1	2301	657041.5	4501144.0	657036.5	4501157.0	657041.9	4501143.1	657028.3	4501177.9
2302	-0.2	0.0	-0.3	0.3	-0.4	-3.0	2302	657070.2	4501153.2	657065.3	4501165.6	657070.2	4501153.2	657057.0	4501186.9
2303	-0.2	-0.0	-0.3	0.3	-0.4	-2.9	2303	657098.4	4501163.3	657093.8	4501175.2	657098.2	4501163.9	657085.5	4501196.4
2304	-0.2	-0.0	-0.3	0.2	-0.4	-2.8	2304	657126.8	4501173.2	657122.2	4501184.9	657126.2	4501174.8	657113.8	4501206.4
2305	-0.2	-0.0	-0.3	0.2	-0.4	-2.7	2305	657154.5	4501184.6	657151.3	4501192.8	657154.2	4501185.3	657142.4	4501215.7
2306	-0.1	0.0	-0.3	0.1	-0.4	-2.5	2306	657183.1	4501194.0	657181.1	4501199.1	657183.0	4501194.1	657172.0	4501222.4
2307	-0.0	0.0	-0.2	0.1	-0.4	-2.3	2307	657211.5	4501203.6	657210.7	4501205.7	657211.8	4501202.8	657202.0	4501228.0
2308	0.0	0.0	-0.2	0.0	-0.4	-1.9	2308	657240.0	4501213.1	657240.0	4501213.2	657240.2	4501212.6	657232.1	4501233.3
2309	0.0	-0.0	-0.2	-0.1	-0.4	-1.5	2309	657268.5	4501222.5	657268.4	4501220.3	657268.3	4501223.0	657261.6	4501240.2
2310	0.1	-0.0	-0.2	-0.1	-0.4	-1.4	2310	657296.7	4501232.9	657298.5	4501228.3	657296.2	4501234.3	657290.3	4501249.4
2311	0.1	-0.0	-0.2	-0.2	-0.5	-1.5	2311	657325.5	4501241.6	657328.3	4501234.4	657324.4	4501244.4	657317.9	4501261.1
2312	0.2	-0.0	-0.2	-0.3	-0.5	-1.6	2312	657354.4	4501250.0	657357.6	4501241.8	657352.8	4501254.1	657345.7	4501272.5
2313	0.1	-0.0	-0.2	-0.3	-0.6	-1.8	2313	657383.0	4501259.4	657385.7	4501252.2	657381.3	4501263.6	657373.6	4501283.4
2314	0.2	-0.0	-0.2	-0.3	-0.6	-2.0	2314	657411.4	4501269.1	657415.5	4501258.5	657409.9	4501272.9	657401.4	4501294.8
2315	0.2	-0.0	-0.2	-0.3	-0.6	-2.1	2315	657439.7	4501278.9	657443.7	4501268.7	657439.0	4501280.9	657429.7	4501304.8
2316	0.2	-0.0	-0.2	-0.3	-0.7	-2.3	2316	657468.0	4501288.9	657472.6	4501277.1	657467.8	4501289.6	657457.8	4501315.1
2317	0.1	-0.0	-0.3	-0.2	-0.6	-2.2	2317	657497.3	4501296.4	657500.0	4501289.7	657496.0	4501299.8	657486.4	4501324.4
2318	0.1	-0.1	-0.3	-0.2	-0.6	-2.2	2318	657526.6	4501303.9	657527.8	4501300.9	657524.4	4501309.5	657515.1	4501333.5
2319	0.0	-0.1	-0.3	-0.2	-0.6	-2.3	2319	657555.8	4501311.5	657555.9	4501311.2	657553.1	4501318.4	657543.3	4501343.5
2320	0.0	-0.1	-0.3	-0.2	-0.7	-2.4	2320	657585.0	4501319.2	657586.0	4501316.7	657581.8	4501327.4	657571.2	4501354.7
2321	0.1	-0.1	-0.3	-0.3	-0.7	-2.4	2321	657614.1	4501327.2	657615.2	4501324.4	657609.9	4501338.1	657599.5	4501364.7
2322	0.1	-0.1	-0.3	-0.3	-0.7	-2.3	2322	657642.7	4501336.5	657643.9	4501333.5	657638.1	4501348.2	657628.1	4501374.0
2323	0.1	-0.1	-0.3	-0.3	-0.7	-2.5	2323	657670.7	4501347.1	657672.1	4501343.7	657666.8	4501357.2	657656.2	4501384.5
2324	0.0	-0.1	-0.3	-0.3	-0.7	-2.6	2324	657699.3	4501356.4	657700.2	4501354.2	657695.8	4501365.4	657684.3	4501394.9
2325	0.0	-0.1	-0.4	-0.2	-0.7	-2.8	2325	657728.1	4501365.2	657728.4	4501364.3	657724.9	4501373.5	657712.8	4501404.5
2326	0.0	-0.1	-0.4	-0.2	-0.7	-2.9	2326	657756.9	4501373.8	657757.1	4501373.5	657753.4	4501382.8	657740.7	4501415.4
2327	-0.1	-0.1	-0.4	-0.2	-0.7	-2.9	2327	657786.1	4501381.5	657785.1	4501384.3	657782.1	4501391.8	657769.5	4501424.3
2328	-0.1	-0.1	-0.4	-0.1	-0.6	-2.6	2328	657815.5	4501388.8	657813.0	4501395.2	657810.8	4501400.8	657799.4	4501430.2
2329	-0.2	-0.1	-0.3	-0.1	-0.5	-2.0	2329	657844.4	4501397.2	657841.1	4501405.8	657838.9	4501411.3	657830.3	4501433.5
2330	-0.2	-0.2	-0.3	-0.1	-0.3	-1.2	2330	657873.3	4501405.7	657869.3	4501416.0	657867.3	4501421.1	657861.9	4501434.9
2331	-0.2	-0.2	-0.2	-0.1	-0.2	-0.7	2331	657902.2	4501414.1	657897.8	4501425.5	657895.9	4501430.2	657893.1	4501437.5
2332	-0.2	-0.2	-0.2	-0.1	-0.1	-0.2	2332	657930.7	4501423.7	657926.2	4501435.1	657924.7	4501439.1	657923.6	4501441.8

Table A-1. High-Water Shoreline Position Change – Rockaway Inlet to Moriches Inlet, New York

	High-Water Shoreline Position Change Rate (m/yr)						High-Water Shoreline Position (UTM Zone 18, NAD 1983)							
	1873/88 to			1933/34 to		1983 to	1873/88		1933/34		1983		1991/97	
Transect #	1933/34	1983	1991/97	1983	1991/97	1991/97	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)
2333	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	657958.6	4501434.8	657955.6	4501442.4	657953.5	4501447.9	657953.1	4501448.8
2334	-0.1	-0.1	-0.1	-0.1	-0.1	-0.3	657985.5	4501448.4	657983.7	4501453.0	657982.3	4501456.5	657981.1	4501459.5
2335	-0.0	-0.1	-0.1	-0.1	-0.2	-0.7	658013.0	4501460.2	658012.6	4501461.5	658010.9	4501465.7	658008.0	4501473.2
2336	0.0	-0.0	-0.2	-0.1	-0.3	-1.2	658041.3	4501470.3	658041.4	4501470.1	658039.6	4501474.6	658034.4	4501488.1
2337	0.0	-0.0	-0.2	-0.1	-0.4	-1.8	658069.3	4501481.1	658069.9	4501479.5	658068.2	4501483.9	658060.5	4501503.6
2338	0.0	-0.0	-0.2	-0.1	-0.5	-2.2	658097.3	4501491.9	658098.2	4501489.7	658096.6	4501493.7	658086.9	4501518.6
2339	0.0	-0.0	-0.3	-0.1	-0.6	-2.5	658125.4	4501502.3	658125.8	4501501.3	658124.5	4501504.7	658113.6	4501532.7
2340	0.0	-0.0	-0.3	-0.1	-0.6	-2.8	658154.2	4501511.1	658154.5	4501510.4	658152.7	4501514.9	658140.7	4501545.8
2341	0.0	-0.0	-0.3	-0.1	-0.7	-3.0	658183.0	4501519.9	658183.3	4501519.0	658181.3	4501524.1	658168.2	4501557.9
2342	0.1	-0.0	-0.3	-0.1	-0.7	-3.2	658210.5	4501531.8	658212.4	4501527.1	658209.9	4501533.3	658196.2	4501568.6
2343	0.1	0.0	-0.3	-0.2	-0.8	-3.2	658238.6	4501542.5	658241.6	4501534.8	658238.6	4501542.4	658224.7	4501578.1
2344	0.2	0.0	-0.3	-0.2	-0.8	-3.3	658266.6	4501553.1	658270.7	4501542.7	658267.2	4501551.5	658253.0	4501588.2
2345	0.2	0.0	-0.3	-0.2	-0.8	-3.2	658295.1	4501562.6	658299.4	4501551.7	658295.1	4501562.7	658281.0	4501598.8
2346	0.2	-0.0	-0.3	-0.3	-0.9	-3.2	658323.1	4501573.5	658327.7	4501561.6	658322.6	4501574.7	658308.9	4501609.9
2347	0.2	-0.0	-0.3	-0.3	-0.9	-3.1	658351.3	4501583.8	658356.0	4501571.7	658350.7	4501585.2	658337.0	4501620.3
2348	0.2	-0.0	-0.3	-0.3	-0.9	-3.2	658379.2	4501594.6	658384.2	4501582.0	658378.8	4501595.8	658365.0	4501631.1
2349	0.3	0.0	-0.3	-0.3	-0.9	-3.1	658406.9	4501606.4	658412.2	4501592.8	658406.8	4501606.5	658393.3	4501641.1
2350	0.3	0.0	-0.3	-0.3	-0.8	-3.0	658434.1	4501619.1	658439.7	4501604.8	658434.6	4501617.7	658421.7	4501650.8
2351	0.3	0.0	-0.3	-0.3	-0.8	-2.8	658462.3	4501629.3	658467.8	4501615.2	658462.6	4501628.5	658450.6	4501659.4
2352	0.3	-0.0	-0.3	-0.3	-0.8	-2.5	658491.3	4501637.5	658496.6	4501623.9	658490.6	4501639.3	658479.7	4501667.4
2353	0.3	-0.0	-0.3	-0.4	-0.8	-2.3	658520.1	4501646.2	658525.4	4501632.8	658518.5	4501650.2	658508.6	4501675.9
2354	0.3	-0.1	-0.3	-0.5	-0.8	-2.1	658548.8	4501655.2	658554.8	4501639.8	658546.5	4501661.2	658537.3	4501684.6
2355	0.3	-0.1	-0.2	-0.5	-0.8	-1.9	658576.8	4501666.1	658583.7	4501648.3	658574.5	4501671.9	658566.4	4501692.7
2356	0.3	-0.1	-0.3	-0.5	-0.8	-1.9	658605.2	4501675.8	658611.9	4501658.6	658602.5	4501682.7	658594.4	4501703.4
2357	0.3	-0.1	-0.3	-0.6	-0.8	-2.0	658634.2	4501683.9	658640.5	4501667.8	658630.5	4501693.4	658622.0	4501715.3
2358	0.3	-0.1	-0.3	-0.6	-0.9	-2.1	658662.9	4501692.9	658668.5	4501678.6	658658.4	4501704.5	658649.3	4501727.8
2359	0.2	-0.1	-0.3	-0.5	-0.9	-2.2	658691.8	4501701.5	658695.8	4501691.1	658686.5	4501715.0	658677.1	4501739.2
2360	0.2	-0.2	-0.4	-0.6	-0.9	-2.2	658720.6	4501710.0	658725.5	4501697.7	658714.7	4501725.3	658705.3	4501749.4
2361	0.3	-0.1	-0.3	-0.6	-0.9	-2.1	658748.1	4501722.1	658753.5	4501708.5	658742.6	4501736.2	658733.5	4501759.6
2362	0.2	-0.1	-0.3	-0.6	-0.9	-1.9	658775.9	4501733.4	658781.0	4501720.3	658770.5	4501747.3	658762.0	4501769.0
2363	0.2	-0.1	-0.3	-0.5	-0.7	-1.6	658804.0	4501743.9	658807.6	4501734.7	658798.4	4501758.3	658791.5	4501775.9
2364	0.2	-0.2	-0.3	-0.6	-0.7	-1.3	658832.9	4501752.5	658836.6	4501742.9	658826.2	4501769.7	658820.7	4501783.7
2365	0.2	-0.2	-0.3	-0.6	-0.8	-1.4	658861.3	4501762.1	658865.3	4501751.9	658854.5	4501779.5	658848.3	4501795.6
2366	0.2	-0.2	-0.3	-0.6	-0.9	-1.9	658889.3	4501773.1	658894.1	4501760.6	658883.2	4501788.6	658875.0	4501809.6
2367	0.2	-0.1	-0.4	-0.6	-0.9	-2.3	658917.2	4501784.0	658922.4	4501770.7	658912.1	4501797.0	658902.1	4501822.7
2368	0.3	-0.1	-0.4	-0.6	-1.0	-2.6	658945.6	4501793.8	658951.2	4501779.4	658941.2	4501805.0	658929.9	4501834.1
2369	0.3	-0.1	-0.4	-0.6	-0.9	-2.5	658974.2	4501802.8	658979.6	4501789.0	658969.7	4501814.4	658958.9	4501842.2
2370	0.2	-0.1	-0.3	-0.5	-0.9	-2.1	659002.9	4501812.0	659007.8	4501799.3	658998.2	4501824.1	658988.8	4501848.1
2371	0.2	-0.1	-0.3	-0.5	-0.8	-1.7	659031.4	4501821.4	659036.0	4501809.7	659026.7	4501833.5	659019.2	4501852.7
2372	0.2	-0.1	-0.2	-0.5	-0.7	-1.2	659059.6	4501831.6	659064.5	4501819.2	659055.2	4501843.0	659049.9	4501856.5
2373	0.3	-0.1	-0.2	-0.5	-0.5	-0.6	659087.5	4501842.8	659093.0	4501828.7	659083.6	4501852.6	659081.0	4501859.4
2374	0.2	-0.1	-0.1	-0.5	-0.4	-0.2	659115.9	4501852.5	659121.0	4501839.4	659112.2	4501862.0	659111.5	4501863.6
2375	0.3	-0.1	-0.1	-0.6	-0.4	0.3	659144.8	4501860.8	659150.9	4501845.3	659140.6	4501871.6	659142.1	4501868.0
2376	0.3	-0.1	-0.0	-0.6	-0.3	0.7	659173.4	4501870.2	659179.2	4501855.2	659169.4	4501880.5	659172.6	4501872.2
2377	0.2	-0.1	0.0	-0.5	-0.2	1.1	659201.9	4501879.5	659206.8	4501867.2	659198.2	4501889.2	659202.9	4501877.1
2378	0.2	-0.1	0.1	-0.5	-0.1	1.3	659230.7	4501888.4	659235.2	4501876.7	659227.2	4501897.4	659232.7	4501883.1
2379	0.2	-0.1	0.1	-0.4	-0.1	1.3	659258.9	4501898.6	659263.6	4501886.6	659256.2	4501905.5	659261.8	4501891.2
2380	0.2	-0.1	0.0	-0.4	-0.1	0.9	659287.8	4501907.0	659292.0	4501896.4	659284.8	4501914.7	659288.9	4501904.2
2381	0.2	-0.1	-0.1	-0.4	-0.2	0.4	659317.2	4501914.3	659320.3	4501906.2	659313.4	4501923.9	659315.2	4501919.5
2382	0.1	-0.1	-0.1	-0.4	-0.3	0.1	659346.2	4501922.4	659349.0	4501915.3	659341.9	4501933.4	659342.4	4501932.3
2383	0.1	-0.1	-0.1	-0.4	-0.3	0.0	659375.3	4501930.3	659377.1	4501925.8	659370.7	4501942.3	659370.6	4501942.4
2384	0.0	-0.1	-0.1	-0.3	-0.3	-0.1	659404.8	4501937.4	659405.7	4501935.1	659399.7	4501950.5	659399.0	4501952.1
2385	0.0	-0.2	-0.2	-0.3	-0.3	-0.2	659434.3	4501944.2	659434.4	4501944.1	659428.4	4501959.3	659427.8	4501961.0

Table A-1. High-Water Shoreline Position Change – Rockaway Inlet to Moriches Inlet, New York

High-Water Shoreline Position Change Rate (m/yr)							High-Water Shoreline Position (UTM Zone 18, NAD 1983)							
1873/88 to			1933/34 to		1983 to		1873/88		1933/34		1983		1991/97	
Transect #	1933/34	1983	1991/97	1983	1991/97	1991/97	Transect #	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)
2386	-0.0	-0.2	-0.2	-0.3	-0.3	-0.2	2386	659463.4	4501952.3	659462.9	4501953.5	659457.2	4501968.1	659456.5	4501970.0
2387	-0.0	-0.2	-0.2	-0.3	-0.3	-0.1	2387	659492.4	4501960.3	659491.9	4501961.8	659486.0	4501976.8	659485.5	4501978.1
2388	-0.1	-0.2	-0.2	-0.3	-0.3	0.1	2388	659522.3	4501966.3	659521.1	4501969.3	659515.1	4501984.7	659515.5	4501983.9
2389	-0.1	-0.2	-0.1	-0.3	-0.2	0.3	2389	659552.0	4501972.8	659549.2	4501979.8	659544.7	4501991.6	659545.8	4501988.8
2390	-0.1	-0.2	-0.1	-0.2	-0.1	0.5	2390	659580.5	4501982.2	659578.1	4501988.4	659574.2	4501998.4	659576.2	4501993.4
2391	-0.1	-0.2	0.0	-0.2	0.2	1.6	2391	659609.9	4501988.5	659607.3	4501996.1	659603.7	4502005.3	659610.7	4501987.3
2392	-0.1	-0.2	0.2	-0.2	0.5	3.1	2392	659639.3	4501996.7	659636.2	4502004.6	659633.2	4502012.2	659646.5	4501978.1
2393	-0.1	-0.2	0.2	-0.2	0.5	3.5	2393	659688.5	4502004.3	659686.3	4502010.0	659662.8	4502019.0	659677.8	4501980.3
2394	-0.1	-0.1	0.2	-0.2	0.5	3.6	2394	659697.9	4502011.5	659696.4	4502015.3	659692.3	4502025.8	659708.0	4501985.7
2395	0.0	-0.1	0.3	-0.3	0.5	3.9	2395	659727.0	4502019.4	659727.2	4502018.9	659721.6	4502033.2	659738.8	4501989.2
2396	0.1	-0.1	0.3	-0.4	0.5	4.2	2396	659756.1	4502027.5	659757.5	4502023.8	659750.9	4502040.7	659769.1	4501994.0
2397	0.1	-0.1	0.3	-0.3	0.6	4.3	2397	659785.3	4502035.0	659786.4	4502032.3	659780.9	4502046.3	659799.5	4501998.7
2398	0.0	-0.1	0.3	-0.3	0.6	4.4	2398	659815.5	4502040.3	659815.9	4502039.3	659810.6	4502052.8	659829.6	4502004.1
2399	0.1	-0.1	0.3	-0.4	0.6	4.4	2399	659844.2	4502049.2	659846.4	4502043.4	659840.1	4502059.7	659859.1	4502011.0
2400	0.2	-0.1	0.4	-0.3	0.7	4.7	2400	659871.8	4502061.0	659875.0	4502052.8	659869.6	4502066.5	659890.0	4502014.3
2401	0.1	-0.1	0.5	-0.2	0.8	5.1	2401	659900.5	4502069.8	659902.7	4502064.4	659898.6	4502074.7	659920.8	4502018.0
2402	0.0	-0.1	0.5	-0.1	0.9	5.1	2402	659929.8	4502077.3	659929.9	4502077.0	659927.6	4502082.9	659949.8	4502026.0
2403	0.0	-0.1	0.5	-0.1	0.9	5.2	2403	659958.5	4502086.2	659958.5	4502086.4	659956.8	4502090.7	659979.2	4502033.2
2404	0.0	-0.0	0.5	-0.1	0.9	5.1	2404	659987.1	4502095.5	659987.5	4502094.7	659986.0	4502098.4	660008.0	4502041.9
2405	-0.0	-0.0	0.5	-0.1	0.9	4.9	2405	660016.6	4502102.5	660016.2	4502103.4	660015.0	4502106.7	660036.1	4502052.5
2406	0.0	-0.0	0.4	-0.1	0.8	4.7	2406	660045.5	4502111.0	660045.8	4502110.2	660044.0	4502114.8	660064.5	4502062.2
2407	0.0	-0.0	0.4	-0.1	0.8	4.6	2407	660074.5	4502119.2	660075.2	4502117.4	660073.2	4502122.5	660093.0	4502071.7
2408	0.0	-0.1	0.4	-0.2	0.8	4.5	2408	660103.9	4502126.3	660104.4	4502125.0	660101.8	4502131.6	660121.6	4502081.0
2409	0.0	-0.1	0.4	-0.2	0.7	4.6	2409	660133.3	4502133.5	660134.1	4502131.5	660130.3	4502141.3	660150.2	4502090.1
2410	0.0	-0.1	0.4	-0.3	0.7	4.7	2410	660162.6	4502141.0	660163.1	4502139.6	660158.6	4502151.3	660178.8	4502099.4
2411	-0.0	-0.1	0.4	-0.2	0.7	4.7	2411	660191.2	4502150.1	660191.0	4502150.7	660186.9	4502161.2	660207.2	4502109.2
2412	-0.0	-0.1	0.4	-0.2	0.7	4.6	2412	660219.9	4502159.2	660219.2	4502161.1	660215.0	4502171.7	660235.2	4502120.0
2413	-0.2	-0.2	0.3	-0.2	0.8	4.6	2413	660249.1	4502166.8	660245.9	4502175.0	660243.1	4502182.2	660263.1	4502130.9
2414	-0.2	-0.2	0.3	-0.2	0.8	4.5	2414	660277.9	4502175.6	660274.0	4502185.7	660271.3	4502192.4	660291.1	4502141.6
2415	-0.2	-0.2	0.3	-0.2	0.7	4.4	2415	660306.7	4502184.3	660302.9	4502194.0	660299.7	4502202.1	660319.0	4502152.7
2416	-0.2	-0.2	0.3	-0.2	0.7	4.3	2416	660335.3	4502193.5	660331.1	4502204.4	660327.9	4502212.4	660346.6	4502164.7
2417	-0.3	-0.2	0.2	-0.2	0.7	4.3	2417	660364.8	4502200.4	660359.2	4502214.9	660355.8	4502223.5	660374.4	4502175.8
2418	-0.4	-0.3	0.2	-0.2	0.7	4.2	2418	660394.6	4502206.5	660387.3	4502225.5	660384.4	4502232.9	660402.6	4502186.1
2419	-0.4	-0.3	0.2	-0.1	0.7	4.1	2419	660424.0	4502213.7	660415.5	4502235.6	660413.1	4502241.7	660430.8	4502196.3
2420	-0.5	-0.3	0.1	-0.1	0.7	4.1	2420	660453.0	4502222.0	660443.2	4502247.1	660441.3	4502251.9	660459.3	4502205.9
2421	-0.6	-0.3	0.1	-0.0	0.8	4.2	2421	660482.1	4502230.0	660470.2	4502260.4	660469.9	4502261.3	660488.0	4502214.8
2422	-0.6	-0.3	0.1	-0.0	0.8	4.0	2422	660511.3	4502237.7	660499.1	4502269.0	660498.9	4502269.3	660516.4	4502224.6
2423	-0.6	-0.3	0.1	0.0	0.8	3.8	2423	660540.4	4502245.6	660527.5	4502278.7	660527.6	4502278.3	660544.3	4502235.7
2424	-0.7	-0.4	0.1	0.1	0.8	3.7	2424	660569.9	4502252.6	660554.9	4502291.0	660555.9	4502288.4	660572.1	4502247.0
2425	-0.8	-0.4	0.0	0.1	0.8	3.7	2425	660598.9	4502260.7	660582.4	4502303.0	660584.1	4502298.7	660600.1	4502257.6
2426	-0.8	-0.4	0.0	0.1	0.8	3.6	2426	660627.4	4502270.2	660610.5	4502313.6	660612.5	4502308.4	660628.0	4502268.6
2427	-0.8	-0.4	0.0	0.1	0.7	3.5	2427	660655.7	4502280.1	660639.5	4502321.7	660640.8	4502318.4	660655.9	4502279.6
2428	-0.8	-0.4	0.0	0.1	0.7	3.5	2428	660684.1	4502290.1	660667.8	4502331.7	660668.6	4502329.7	660684.0	4502290.3
2429	-0.8	-0.4	-0.0	0.1	0.8	3.5	2429	660712.5	4502299.6	660694.8	4502345.2	660696.4	4502341.1	660711.8	4502301.6
2430	-0.8	-0.5	-0.1	-0.0	0.7	3.5	2430	660741.7	4502307.3	660724.4	4502351.8	660724.1	4502352.6	660739.5	4502313.1
2431	-0.8	-0.5	-0.1	-0.0	0.7	3.6	2431	660770.4	4502316.3	660752.5	4502362.3	660752.1	4502363.4	660767.7	4502323.2
2432	-0.9	-0.5	-0.1	-0.1	0.7	3.7	2432	660799.6	4502324.1	660781.1	4502371.5	660780.0	4502374.3	660796.0	4502333.2
2433	-0.9	-0.5	-0.1	-0.1	0.6	3.7	2433	660828.6	4502332.4	660810.1	4502379.6	660808.0	4502385.0	660824.1	4502343.7
2434	-0.9	-0.6	-0.2	-0.2	0.6	3.6	2434	660857.7	4502340.3	660839.2	4502387.7	660835.7	4502396.6	660851.4	4502356.5
2435	-0.9	-0.6	-0.2	-0.3	0.5	3.6	2435	660886.6	4502348.8	660867.9	4502396.7	660863.3	4502408.5	660878.8	4502368.7
2436	-0.9	-0.6	-0.2	-0.3	0.5	3.7	2436	660914.4	4502359.9	660896.1	4502407.0	660891.4	4502418.9	660907.4	4502377.8
2437	-0.8	-0.6	-0.2	-0.3	0.5	3.8	2437	660942.5	4502370.5	660924.9	4502415.7	660919.7	4502428.8	660936.2	4502386.7
2438	-0.8	-0.6	-0.2	-0.3	0.5	3.8	2438	660971.3	4502379.2	660954.1	4502423.4	660948.1	4502438.6	660964.7	4502396.2

Table A-1. High-Water Shoreline Position Change – Rockaway Inlet to Moriches Inlet, New York

	High-Water Shoreline Position Change Rate (m/yr)					
	1873/88 to			1933/34 to		1983 to
Transect #	1933/34	1983	1991/97	1983	1991/97	1991/97
2439	-0.8	-0.6	-0.2	-0.3	0.5	3.8
2440	-0.9	-0.6	-0.2	-0.3	0.5	3.6
2441	-0.8	-0.6	-0.2	-0.3	0.4	3.3
2442	-0.9	-0.6	-0.2	-0.2	0.5	3.1
2443	-0.9	-0.6	-0.2	-0.2	0.5	3.0
2444	-0.8	-0.5	-0.2	-0.2	0.5	2.9
2445	-0.9	-0.5	-0.2	-0.1	0.5	2.7
2446	-0.9	-0.5	-0.2	0.0	0.5	2.5
2447	-0.9	-0.5	-0.2	0.1	0.5	2.4
2448	-1.0	-0.5	-0.2	0.2	0.5	2.1
2449	-0.9	-0.4	-0.2	0.2	0.5	1.9
2450	-0.9	-0.4	-0.2	0.2	0.5	1.8
2451	-0.9	-0.4	-0.2	0.3	0.5	1.6
2452	-0.9	-0.3	-0.1	0.3	0.6	1.7
2453	-0.8	-0.3	-0.1	0.4	0.7	1.9
2454	-0.8	-0.2	0.0	0.5	0.8	2.0
2455	-0.9	-0.2	0.0	0.7	1.0	2.1
2456	-1.0	-0.2	0.1	0.8	1.1	2.3
2457	-1.0	-0.2	0.1	0.9	1.2	2.4
2458	-0.9	-0.1	0.1	0.8	1.1	2.3
2459	-0.8	-0.1	0.1	0.8	1.1	2.2
2460	-0.8	-0.1	0.1	0.8	1.0	2.1
2461	-0.8	-0.1	0.1	0.8	1.0	1.9
2462	-0.7	-0.0	0.2	0.8	1.0	1.9
2463	-0.6	-0.0	0.2	0.7	0.9	1.9
2464	-0.7	-0.0	0.2	0.7	0.9	1.9
2465	-0.7	-0.1	0.1	0.7	0.9	1.9
2466	-0.6	-0.0	0.1	0.7	0.9	1.6
2467	-0.7	-0.0	0.1	0.7	0.8	1.2
2468	-0.7	-0.1	0.1	0.8	0.8	1.1
2469	-0.7	-0.0	0.1	0.7	0.7	0.8
2470	-0.6	-0.0	0.0	0.7	0.7	0.5
2471	-0.7	-0.0	0.0	0.8	0.7	0.2
2472	-0.6	0.0	-0.0	0.8	0.6	-0.1
2473	-0.7	-0.0	-0.0	0.8	0.6	-0.4
2474	-0.6	-0.0	-0.1	0.7	0.5	-0.4
2475	-0.5	0.0	-0.0	0.6	0.4	-0.4
2476	-0.5	0.0	-0.1	0.6	0.4	-0.7
2477	-0.5	-0.0	-0.1	0.6	0.3	-0.8
2478	-0.5	-0.0	-0.1	0.5	0.3	-0.7
2479	-0.5	-0.1	-0.1	0.4	0.2	-0.5
2480	-0.5	-0.1	-0.1	0.4	0.2	-0.4
2481	-0.5	-0.1	-0.1	0.4	0.2	-0.3
2482	-0.5	-0.1	-0.1	0.3	0.2	-0.1
2483	-0.6	-0.2	-0.1	0.3	0.3	0.3
2484	-0.6	-0.2	-0.1	0.3	0.3	0.5
2485	-0.5	-0.2	-0.1	0.3	0.4	0.6
2486	-0.5	-0.2	-0.1	0.3	0.4	0.9
2487	-0.5	-0.2	-0.0	0.2	0.4	1.3
2488	-0.5	-0.2	0.0	0.2	0.5	1.7
2489	-0.5	-0.2	0.0	0.2	0.5	2.0
2490	-0.5	-0.2	0.0	0.2	0.6	2.3
2491	-0.5	-0.2	0.0	0.1	0.6	2.4

	High-Water Shoreline Position (UTM Zone 18, NAD 1983)							
	1873/88		1933/34		1983		1991/97	
Transect #	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)
2439	661000.3	4502387.4	660982.4	4502433.3	660976.7	4502447.9	660993.1	4502405.9
2440	661029.5	4502395.0	661011.3	4502441.8	661005.8	4502455.9	661021.5	4502415.6
2441	661058.2	4502404.0	661040.2	4502450.3	661035.1	4502463.4	661049.6	4502426.3
2442	661086.7	4502413.6	661067.7	4502462.2	661064.1	4502471.5	661077.7	4502436.7
2443	661115.1	4502423.4	661095.9	4502472.6	661092.9	4502480.2	661106.0	4502446.6
2444	661142.8	4502434.8	661124.9	4502480.8	661122.1	4502487.9	661134.9	4502455.2
2445	661171.1	4502444.9	661152.5	4502492.6	661151.6	4502494.9	661163.2	4502465.2
2446	661199.0	4502456.0	661180.6	4502503.1	661180.6	4502503.0	661191.4	4502475.5
2447	661227.8	4502464.7	661208.3	4502514.5	661209.6	4502511.3	661219.8	4502485.0
2448	661256.8	4502472.8	661236.5	4502524.9	661239.2	4502518.0	661248.3	4502494.6
2449	661284.4	4502484.6	661264.6	4502535.3	661268.6	4502525.2	661276.7	4502504.4
2450	661312.5	4502495.0	661293.8	4502543.1	661297.7	4502533.1	661305.4	4502513.2
2451	661341.5	4502503.3	661322.4	4502552.3	661327.5	4502539.3	661334.3	4502521.8
2452	661370.0	4502512.7	661351.2	4502560.9	661357.2	4502545.6	661364.4	4502527.1
2453	661397.2	4502525.5	661380.2	4502569.4	661386.8	4502552.2	661394.9	4502531.5
2454	661425.1	4502536.6	661407.4	4502582.0	661416.4	4502559.0	661425.0	4502536.9
2455	661453.7	4502545.9	661433.8	4502596.9	661445.7	4502566.4	661454.8	4502542.9
2456	661482.0	4502555.8	661460.7	4502610.6	661474.8	4502574.4	661484.9	4502548.5
2457	661510.0	4502566.6	661489.0	4502620.5	661504.2	4502581.5	661514.4	4502555.3
2458	661538.2	4502577.0	661519.9	4502623.8	661534.0	4502587.8	661543.8	4502562.6
2459	661567.2	4502585.2	661549.9	4502629.6	661563.7	4502594.1	661573.1	4502570.1
2460	661595.7	4502594.5	661579.1	4502637.2	661592.8	4502602.0	661601.8	4502578.9
2461	661624.3	4502603.9	661607.6	4502646.8	661621.8	4502610.2	661630.0	4502589.2
2462	661652.0	4502615.3	661636.8	4502654.4	661650.6	4502618.9	661658.7	4502598.2
2463	661680.2	4502625.6	661666.8	4502660.1	661679.1	4502628.4	661687.5	4502606.8
2464	661709.4	4502633.4	661695.5	4502669.1	661707.7	4502637.7	661715.9	4502616.6
2465	661738.4	4502641.6	661724.3	4502677.8	661736.3	4502647.0	661744.4	4502626.2
2466	661766.8	4502651.3	661753.7	4502684.9	661765.6	4502654.3	661772.5	4502636.8
2467	661795.8	4502659.5	661781.4	4502696.5	661794.6	4502662.6	661799.9	4502649.0
2468	661825.1	4502667.0	661809.5	4502706.9	661823.0	4502672.3	661827.6	4502660.5
2469	661852.8	4502678.4	661838.8	4502714.4	661851.4	4502682.0	661854.8	4502673.4
2470	661880.9	4502689.1	661867.1	4502724.4	661880.0	4502691.3	661882.1	4502685.8
2471	661909.0	4502699.6	661895.1	4502735.1	661908.6	4502700.6	661909.5	4502698.3
2472	661937.2	4502709.8	661923.5	4502745.0	661937.3	4502709.6	661936.6	4502711.2
2473	661966.1	4502718.3	661952.2	4502753.8	661965.9	4502718.8	661964.3	4502722.8
2474	661994.5	4502728.0	661980.8	4502763.1	661993.9	4502729.4	661992.0	4502734.4
2475	662021.9	4502740.4	662010.8	4502768.7	662022.1	4502739.7	662020.3	4502744.3
2476	662050.8	4502748.9	662039.9	4502776.6	662050.9	4502748.4	662048.1	4502755.7
2477	662080.0	4502756.5	662068.8	4502785.3	662079.2	4502758.4	662076.0	4502766.8
2478	662108.8	4502765.2	662098.5	4502791.6	662107.2	4502769.3	662104.3	4502776.7
2479	662137.7	4502773.6	662127.8	4502799.0	662134.8	4502781.0	662132.6	4502786.6
2480	662166.0	4502783.5	662156.0	4502809.2	662162.6	4502792.4	662160.9	4502796.7
2481	662194.4	4502793.4	662184.5	4502818.8	662190.6	4502803.0	662189.4	4502806.3
2482	662223.5	4502801.3	662212.7	4502828.9	662218.3	4502814.8	662218.0	4502815.5
2483	662252.8	4502808.8	662240.5	4502840.4	662245.6	4502827.1	662246.8	4502824.1
2484	662279.8	4502822.0	662268.1	4502852.0	662273.6	4502838.0	662275.6	4502832.9
2485	662307.4	4502833.9	662296.3	4502862.5	662301.6	4502848.7	662304.2	4502842.2
2486	662335.8	4502843.6	662324.6	4502872.3	662329.6	4502859.5	662333.3	4502850.0
2487	662363.3	4502855.8	662353.1	4502881.8	662357.4	4502870.9	662362.9	4502856.8
2488	662391.1	4502867.0	662381.2	4502892.3	662385.0	4502882.7	662392.2	4502864.3
2489	662420.3	4502874.7	662409.8	4502901.6	662412.8	4502893.9	662421.4	4502871.8
2490	662449.5	4502882.3	662438.5	4502910.5	662441.1	4502903.8	662451.1	4502878.3
2491	662478.1	4502891.6	662467.0	4502920.0	662469.6	4502913.4	662479.9	4502887.1

Table A-1. High-Water Shoreline Position Change – Rockaway Inlet to Moriches Inlet, New York

High-Water Shoreline Position Change Rate (m/yr)						High-Water Shoreline Position (UTM Zone 18, NAD 1983)								
1873/88 to			1933/34 to		1983 to	1873/88		1933/34		1983		1991/97		
Transect #	1933/34	1983	1991/97	1983	1991/97	1991/97	Transect #	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)
2492	-0.5	-0.2	0.0	0.1	0.5	2.2	2492	662506.4	4502901.5	662495.7	4502929.2	662497.9	4502923.3	662507.4	4502899.0
2493	-0.5	-0.2	0.0	0.1	0.5	2.0	2493	662534.0	4502913.3	662524.2	4502938.5	662526.2	4502933.4	662535.0	4502910.9
2494	-0.5	-0.2	0.0	0.2	0.5	1.9	2494	662561.5	4502925.6	662551.9	4502950.0	662554.7	4502942.8	662562.9	4502922.0
2495	-0.4	-0.2	0.1	0.2	0.5	1.9	2495	662589.3	4502936.8	662579.9	4502960.8	662583.4	4502951.9	662591.4	4502931.2
2496	-0.4	-0.2	0.1	0.2	0.5	1.9	2496	662617.7	4502946.4	662608.9	4502969.0	662611.8	4502961.7	662619.9	4502940.8
2497	-0.4	-0.2	0.1	0.1	0.5	2.0	2497	662645.8	4502957.0	662638.3	4502976.2	662639.5	4502973.1	662648.3	4502950.5
2498	-0.3	-0.1	0.1	0.0	0.4	2.2	2498	662673.2	4502969.4	662667.6	4502983.7	662667.5	4502983.9	662677.1	4502959.4
2499	-0.3	-0.1	0.1	0.0	0.5	2.2	2499	662701.4	4502979.5	662695.4	4502994.9	662695.9	4502993.8	662705.4	4502969.2
2500	-0.2	-0.2	0.1	-0.1	0.4	2.2	2500	662730.1	4502988.7	662725.3	4503000.7	662724.2	4503003.7	662733.7	4502979.2
2501	-0.2	-0.1	0.1	-0.1	0.4	2.1	2501	662758.4	4502998.4	662754.1	4503009.6	662753.0	4503012.4	662762.2	4502988.8
2502	-0.2	-0.1	0.1	0.0	0.4	2.0	2502	662786.9	4503007.9	662781.8	4503021.1	662781.9	4503020.9	662790.4	4502999.1
2503	-0.2	-0.1	0.1	0.0	0.3	1.7	2503	662815.4	4503017.5	662810.8	4503029.3	662811.2	4503028.4	662818.3	4503010.0
2504	-0.2	-0.1	0.1	0.0	0.3	1.4	2504	662843.8	4503027.2	662839.9	4503037.2	662840.6	4503035.5	662846.8	4503019.5
2505	-0.2	-0.1	0.1	0.0	0.3	1.3	2505	662872.5	4503036.2	662868.8	4503045.8	662869.3	4503044.4	662875.0	4503029.9
2506	-0.1	-0.1	0.1	-0.0	0.2	1.2	2506	662900.9	4503046.1	662898.2	4503052.8	662897.9	4503053.7	662902.9	4503040.9
2507	-0.1	-0.1	0.0	-0.0	0.2	1.0	2507	662929.3	4503055.8	662926.9	4503061.9	662926.5	4503062.9	662930.9	4503051.6
2508	-0.1	-0.0	0.1	0.0	0.2	0.9	2508	662956.6	4503068.3	662954.9	4503072.7	662955.2	4503071.8	662959.2	4503061.6
2509	-0.1	-0.0	0.1	0.1	0.2	0.8	2509	662984.1	4503080.4	662982.6	4503083.8	662983.8	4503081.0	662987.1	4503072.5
2510	-0.0	0.0	0.1	0.1	0.2	0.6	2510	663012.7	4503089.7	663011.8	4503092.0	663012.6	4503089.8	663015.2	4503083.2
2511	0.0	0.0	0.1	0.0	0.1	0.5	2511	663040.8	4503100.0	663041.0	4503099.5	663041.4	4503098.6	663043.4	4503093.3
2512	0.0	0.0	0.1	0.0	0.1	0.4	2512	663068.8	4503110.8	663069.8	4503108.4	663069.8	4503108.3	663071.5	4503104.0
2513	0.1	0.0	0.1	-0.0	0.0	0.3	2513	663096.9	4503121.5	663098.3	4503117.8	663098.0	4503118.7	663099.3	4503115.3
2514	0.1	0.0	0.0	-0.0	-0.0	-0.1	2514	663125.2	4503131.4	663127.2	4503126.2	663126.9	4503127.0	663126.6	4503127.9
2515	0.1	0.1	0.0	0.0	-0.1	-0.4	2515	663153.2	4503142.0	663155.0	4503137.7	663155.4	4503136.4	663153.8	4503140.6
2516	0.1	0.1	0.0	0.0	-0.1	-0.5	2516	663180.8	4503154.0	663183.1	4503148.0	663183.3	4503147.6	663181.1	4503153.1
2517	0.2	0.1	0.0	-0.0	-0.1	-0.6	2517	663208.2	4503166.2	663211.5	4503157.8	663211.4	4503158.1	663208.8	4503164.8
2518	0.2	0.1	0.0	-0.0	-0.2	-0.7	2518	663236.3	4503176.7	663240.5	4503165.9	663239.8	4503167.9	663236.8	4503175.4
2519	0.2	0.1	0.0	-0.1	-0.2	-0.8	2519	663264.6	4503186.7	663269.1	4503175.2	663268.1	4503177.9	663264.6	4503186.9
2520	0.2	0.1	-0.0	-0.1	-0.3	-1.0	2520	663293.2	4503196.0	663298.1	4503183.6	663296.3	4503188.0	663292.0	4503199.2
2521	0.3	0.1	-0.0	-0.2	-0.4	-1.1	2521	663321.5	4503206.0	663327.8	4503189.8	663324.6	4503198.0	663320.0	4503209.9
2522	0.3	0.1	-0.0	-0.2	-0.4	-1.1	2522	663349.9	4503215.8	663356.2	4503199.6	663353.1	4503207.6	663348.1	4503220.3
2523	0.3	0.1	-0.1	-0.2	-0.4	-1.3	2523	663378.6	4503224.8	663384.9	4503209.6	663381.7	4503216.9	663376.0	4503231.5
2524	0.4	0.1	-0.1	-0.2	-0.5	-1.5	2524	663406.5	4503235.8	663414.3	4503215.7	663410.2	4503226.4	663403.5	4503243.4
2525	0.4	0.1	-0.1	-0.3	-0.5	-1.4	2525	663434.5	4503246.6	663443.2	4503224.1	663438.2	4503237.0	663432.1	4503252.6
2526	0.4	0.1	-0.1	-0.3	-0.5	-1.2	2526	663463.4	4503255.1	663471.2	4503234.9	663466.3	4503247.6	663461.1	4503260.9
2527	0.3	0.1	-0.1	-0.3	-0.4	-1.0	2527	663492.3	4503263.4	663499.0	4503246.2	663494.3	4503258.4	663490.1	4503269.2
2528	0.3	0.1	-0.0	-0.3	-0.4	-0.8	2528	663520.6	4503273.3	663527.3	4503256.3	663522.5	4503268.7	663519.0	4503277.6
2529	0.3	0.1	-0.0	-0.3	-0.4	-0.6	2529	663548.9	4503283.5	663556.0	4503265.3	663551.0	4503278.1	663548.3	4503284.9
2530	0.3	0.1	0.0	-0.2	-0.2	-0.2	2530	663577.3	4503293.3	663583.5	4503277.2	663579.5	4503287.5	663578.7	4503289.6
2531	0.3	0.1	0.1	-0.2	-0.1	0.3	2531	663605.6	4503303.1	663611.4	4503288.2	663607.9	4503297.2	663609.3	4503293.8
2532	0.3	0.1	0.1	-0.2	-0.0	0.7	2532	663634.1	4503312.6	663640.0	4503297.5	663636.2	4503307.3	663639.3	4503299.4
2533	0.2	0.0	0.1	-0.3	-0.0	1.0	2533	663663.4	4503320.2	663668.6	4503306.8	663664.1	4503318.5	663668.3	4503307.6
2534	0.2	-0.0	0.1	-0.3	-0.1	0.9	2534	663692.6	4503327.7	663697.4	4503315.6	663692.3	4503328.6	663696.0	4503319.0
2535	0.1	-0.0	0.0	-0.3	-0.1	0.7	2535	663722.3	4503334.4	663725.3	4503326.6	663720.7	4503338.4	663723.6	4503330.9
2536	0.1	-0.1	-0.0	-0.3	-0.1	0.5	2536	663751.3	4503342.3	663753.6	4503336.7	663748.8	4503348.8	663751.1	4503343.0
2537	0.1	-0.1	-0.0	-0.3	-0.2	0.4	2537	663779.9	4503351.7	663782.9	4503344.1	663776.9	4503359.3	663778.6	4503355.1
2538	0.2	-0.1	-0.0	-0.4	-0.2	0.4	2538	663807.9	4503362.3	663812.1	4503351.7	663805.1	4503369.5	663807.0	4503364.9
2539	0.1	-0.1	-0.0	-0.3	-0.2	0.4	2539	663836.6	4503371.4	663838.6	4503366.3	663833.4	4503379.8	663835.0	4503375.5
2540	-0.0	-0.1	-0.1	-0.2	-0.1	0.3	2540	663865.6	4503379.7	663865.1	4503380.9	663861.5	4503390.0	663862.8	4503386.9
2541	-0.1	-0.1	-0.1	-0.2	-0.1	0.3	2541	663893.9	4503389.7	663892.7	4503392.7	663889.7	4503400.4	663890.9	4503397.4
2542	-0.1	-0.1	-0.1	-0.2	-0.1	0.2	2542	663922.4	4503399.2	663920.9	4503402.9	663918.0	4503410.3	663919.1	4503407.7
2543	-0.1	-0.1	-0.1	-0.2	-0.1	0.1	2543	663951.0	4503408.4	663950.0	4503410.9	663946.6	4503419.7	663947.1	4503418.3
2544	-0.0	-0.1	-0.1	-0.2	-0.2	0.0	2544	663979.1	4503418.9	663978.5	4503420.3	663975.2	4503428.8	663975.3	4503428.7

Table A-1. High-Water Shoreline Position Change – Rockaway Inlet to Moriches Inlet, New York

High-Water Shoreline Position Change Rate (m/yr)						High-Water Shoreline Position (UTM Zone 18, NAD 1983)									
1873/88 to			1933/34 to		1983 to	1873/88		1933/34		1983		1991/97			
Transect #	1933/34	1983	1991/97	1983	1991/97	Transect #	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)
2545	-0.1	-0.1	-0.1	-0.1	-0.1	2545	664008.2	4503426.8	664005.8	4503432.9	664003.5	4503439.0	664003.2	4503439.8
2546	-0.2	-0.2	-0.2	-0.1	-0.3	2546	664038.0	4503433.0	664033.4	4503444.8	664031.5	4503449.7	664030.1	4503453.2
2547	-0.2	-0.2	-0.2	-0.2	-0.3	2547	664066.8	4503441.6	664061.9	4503454.4	664059.1	4503461.4	664057.7	4503465.1
2548	-0.3	-0.2	-0.2	-0.1	-0.5	2548	664094.1	4503454.2	664088.7	4503468.0	664087.5	4503471.1	664085.3	4503476.9
2549	-0.2	-0.1	-0.2	-0.0	-0.8	2549	664121.0	4503468.0	664116.8	4503478.5	664116.2	4503480.2	664112.7	4503489.0
2550	-0.2	-0.1	-0.2	-0.1	-1.0	2550	664148.7	4503479.5	664145.5	4503487.6	664144.4	4503490.4	664140.3	4503501.0
2551	-0.2	-0.1	-0.2	-0.0	-1.2	2551	664177.0	4503489.3	664173.5	4503498.4	664172.7	4503500.4	664167.5	4503513.8
2552	-0.2	-0.1	-0.2	0.0	-1.5	2552	664203.8	4503503.3	664200.3	4503512.2	664201.0	4503510.5	664194.4	4503527.4
2553	-0.2	-0.1	-0.2	0.1	-1.8	2553	664231.1	4503515.8	664228.0	4503523.8	664229.1	4503520.8	664221.2	4503541.2
2554	-0.2	-0.1	-0.2	0.1	-1.9	2554	664259.4	4503525.7	664256.1	4503536.7	664257.2	4503531.4	664248.9	4503552.8
2555	-0.1	-0.0	-0.2	0.1	-2.0	2555	664286.4	4503539.3	664283.3	4503547.2	664285.5	4503541.4	664276.9	4503563.5
2556	-0.1	0.0	-0.2	0.1	-2.1	2556	664313.6	4503551.9	664312.3	4503555.2	664313.9	4503551.1	664304.9	4503574.3
2557	-0.0	0.0	-0.2	0.1	-2.3	2557	664342.0	4503561.8	664341.2	4503563.8	664342.3	4503560.9	664332.3	4503586.6
2558	-0.0	-0.0	-0.3	0.0	-2.4	2558	664370.9	4503570.2	664370.2	4503572.0	664370.4	4503571.4	664360.1	4503598.0
2559	-0.1	-0.0	-0.3	-0.0	-2.3	2559	664399.6	4503579.0	664398.6	4503581.7	664398.2	4503582.6	664388.3	4503608.1
2560	-0.0	-0.0	-0.3	0.0	-2.4	2560	664426.8	4503591.9	664426.2	4503593.5	664426.2	4503593.6	664415.9	4503619.9
2561	-0.1	-0.0	-0.3	0.0	-2.4	2561	664455.5	4503601.0	664454.1	4503604.5	664454.1	4503604.6	664443.5	4503631.6
2562	-0.2	-0.1	-0.3	0.0	-2.5	2562	664485.7	4503606.1	664481.9	4503615.7	664482.0	4503615.7	664471.0	4503643.7
2563	-0.3	-0.2	-0.4	0.0	-2.5	2563	664515.9	4503611.2	664509.4	4503627.9	664509.9	4503626.6	664498.9	4503654.9
2564	-0.4	-0.2	-0.4	0.1	-2.5	2564	664545.6	4503617.7	664536.5	4503641.0	664538.2	4503636.7	664527.5	4503664.1
2565	-0.6	-0.2	-0.4	0.2	-2.1	2565	664574.7	4503625.5	664562.9	4503655.8	664565.8	4503648.3	664556.8	4503671.4
2566	-0.6	-0.3	-0.4	0.2	-1.6	2566	664603.7	4503633.7	664590.6	4503667.4	664593.6	4503659.7	664586.8	4503677.2
2567	-0.7	-0.3	-0.4	0.2	-1.1	2567	664633.6	4503639.8	664617.7	4503680.6	664621.4	4503670.9	664616.8	4503682.7
2568	-0.9	-0.4	-0.4	0.3	-0.9	2568	664663.9	4503644.6	664644.7	4503693.8	664649.2	4503682.2	664645.5	4503691.7
2569	-1.0	-0.4	-0.4	0.3	-0.4	2569	664691.7	4503655.9	664671.3	4503708.2	664676.8	4503693.9	664675.1	4503698.5
2570	-1.0	-0.4	-0.3	0.3	0.1	2570	664719.2	4503668.0	664698.6	4503720.6	664704.5	4503705.7	664704.7	4503705.1
2571	-1.0	-0.4	-0.3	0.3	0.4	2571	664747.0	4503679.1	664726.1	4503732.8	664731.8	4503718.1	664733.4	4503714.1
2572	-1.0	-0.4	-0.3	0.4	0.4	2572	664774.1	4503692.2	664752.9	4503746.6	664759.4	4503730.1	664761.2	4503725.3
2573	-1.0	-0.4	-0.3	0.4	0.1	2573	664800.9	4503706.1	664779.7	4503760.4	664786.9	4503741.9	664787.3	4503741.0
2574	-0.9	-0.4	-0.3	0.3	-0.2	2574	664828.2	4503718.8	664808.9	4503768.3	664814.4	4503754.1	664813.3	4503756.8
2575	-0.9	-0.3	-0.3	0.4	-0.3	2575	664855.2	4503732.1	664835.5	4503782.5	664841.7	4503766.6	664840.3	4503770.1
2576	-0.9	-0.3	-0.3	0.4	-0.5	2576	664881.9	4503746.1	664862.5	4503795.8	664869.2	4503778.8	664866.9	4503784.5
2577	-0.9	-0.3	-0.3	0.5	-0.7	2577	664908.4	4503760.7	664889.3	4503809.6	664896.6	4503791.0	664893.5	4503799.1
2578	-0.9	-0.3	-0.3	0.5	-0.7	2578	664934.8	4503775.6	664916.0	4503823.9	664924.0	4503803.3	664920.9	4503811.4
2579	-0.8	-0.2	-0.3	0.4	-0.7	2579	664961.0	4503791.1	664944.3	4503833.9	664951.6	4503815.0	664946.7	4503822.4
2580	-0.7	-0.2	-0.3	0.5	-0.7	2580	664987.3	4503806.0	664971.4	4503846.9	664979.4	4503826.3	664976.5	4503833.9
2581	-0.8	-0.2	-0.2	0.5	-0.8	2581	665014.2	4503819.6	664998.2	4503860.7	665007.1	4503837.9	665003.8	4503846.3
2582	-0.7	-0.1	-0.2	0.5	-0.6	2582	665040.2	4503835.7	665025.4	4503873.5	665034.6	4503850.0	665032.0	4503856.7
2583	-0.6	-0.1	-0.1	0.5	-0.5	2583	665066.1	4503851.8	665053.1	4503885.1	665062.0	4503862.3	665060.0	4503867.4
2584	-0.6	-0.1	-0.1	0.5	-0.3	2584	665093.3	4503864.5	665080.5	4503897.4	665088.7	4503876.4	665087.3	4503880.0
2585	-0.6	-0.1	-0.2	0.4	-0.2	2585	665120.9	4503876.4	665107.8	4503909.9	665115.5	4503890.4	665114.4	4503893.0
2586	-0.6	-0.2	-0.2	0.4	-0.3	2586	665148.9	4503887.2	665135.9	4503920.6	665142.5	4503903.6	665141.0	4503907.3
2587	-0.6	-0.2	-0.2	0.4	-0.7	2587	665176.8	4503898.3	665163.1	4503933.4	665169.5	4503916.9	665166.3	4503925.2
2588	-0.6	-0.2	-0.3	0.3	-1.1	2588	665204.3	4503910.3	665190.9	4503944.5	665196.5	4503930.3	665191.9	4503942.1
2589	-0.6	-0.2	-0.3	0.3	-1.3	2589	665231.4	4503923.4	665219.2	4503954.5	665223.7	4503943.1	665218.1	4503957.5
2590	-0.5	-0.2	-0.3	0.2	-1.5	2590	665259.1	4503934.9	665247.6	4503964.4	665250.7	4503956.3	665244.4	4503972.5
2591	-0.6	-0.2	-0.4	0.2	-1.6	2591	665286.7	4503946.6	665274.5	4503977.9	665278.0	4503969.1	665270.8	4503987.3
2592	-0.6	-0.2	-0.4	0.2	-1.7	2592	665314.0	4503959.1	665301.5	4503991.3	665305.0	4503982.4	665297.4	4504001.9
2593	-0.6	-0.3	-0.4	0.2	-1.7	2593	665342.1	4503969.8	665328.5	4504004.7	4503996.2	665324.2	4504015.6	
2594	-0.6	-0.3	-0.4	0.1	-1.6	2594	665369.7	4503981.5	665356.4	4504015.7	665358.0	4504011.6	665351.2	4504029.1
2595	-0.6	-0.3	-0.4	-0.0	-1.4	2595	665397.0	4503994.0	665384.1	4504027.1	665383.7	4504028.3	665377.7	4504043.6
2596	-0.6	-0.4	-0.5	-0.0	-1.2	2596	665424.2	4504007.0	665410.4	4504042.3	665409.9	4504043.6	665404.6	4504057.2
2597	-0.6	-0.4	-0.5	-0.1	-1.2	2597	665451.4	4504019.7	665438.6	4504052.5	665437.0	4504056.8	665431.7	4504070.2

Table A-1. High-Water Shoreline Position Change – Rockaway Inlet to Moriches Inlet, New York

High-Water Shoreline Position Change Rate (m/yr)							High-Water Shoreline Position (UTM Zone 18, NAD 1983)									
1873/88 to			1933/34 to			1983 to	1873/88		1933/34		1983		1991/97			
Transect #	1933/34	1983	1991/97	1983	1991/97	1991/97	Transect #	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)
2598	-0.6	-0.4	-0.5	-0.1	-0.3	-1.1	2598	666479.3	4504030.8	665466.5	4504063.5	665464.1	4504069.8	665459.4	4504081.9
2599	-0.6	-0.4	-0.5	-0.2	-0.3	-1.0	2599	665506.8	4504042.9	665494.4	4504074.7	665491.5	4504082.0	665487.2	4504093.2
2600	-0.6	-0.4	-0.5	-0.2	-0.3	-0.9	2600	665535.8	4504051.1	665522.9	4504084.1	665519.3	4504093.3	665515.5	4504103.2
2601	-0.7	-0.4	-0.5	-0.2	-0.3	-0.5	2601	665564.4	4504060.3	665550.5	4504095.8	665547.1	4504104.7	665544.8	4504110.6
2602	-0.7	-0.5	-0.4	-0.2	-0.2	0.0	2602	665593.4	4504068.6	665578.0	4504108.1	665574.3	4504117.4	665574.4	4504117.1
2603	-0.7	-0.5	-0.4	-0.3	-0.1	0.8	2603	665621.7	4504078.5	665606.6	4504117.3	665601.2	4504131.1	665604.5	4504122.7
2604	-0.7	-0.6	-0.3	-0.4	-0.0	1.6	2604	665649.3	4504090.2	665635.0	4504126.9	665627.4	4504146.4	665634.5	4504128.2
2605	-0.8	-0.6	-0.4	-0.5	0.0	2.1	2605	665678.4	4504098.3	665662.1	4504140.0	665653.8	4504161.3	665662.8	4504138.2
2606	-0.8	-0.7	-0.4	-0.5	0.1	2.2	2606	665707.0	4504107.4	665689.1	4504153.4	665680.8	4504174.6	665690.3	4504150.2
2607	-0.9	-0.7	-0.4	-0.5	0.1	2.4	2607	665735.3	4504117.4	665717.1	4504164.2	665707.6	4504188.4	665718.1	4504161.6
2608	-0.8	-0.7	-0.4	-0.6	0.0	2.6	2608	665762.6	4504129.9	665745.7	4504173.5	665734.8	4504201.2	665746.4	4504171.7
2609	-0.8	-0.7	-0.4	-0.6	0.1	2.7	2609	665789.4	4504143.8	665772.3	4504187.7	665762.6	4504212.6	665774.2	4504182.9
2610	-0.7	-0.6	-0.4	-0.5	-0.0	2.1	2610	665816.1	4504158.1	665800.9	4504196.9	665791.4	4504221.3	665800.6	4504197.8
2611	-0.6	-0.6	-0.4	-0.5	-0.2	1.2	2611	665843.0	4504171.6	665829.7	4504205.6	665821.1	4504227.7	665826.2	4504214.8
2612	-0.6	-0.5	-0.4	-0.3	-0.2	0.2	2612	665870.9	4504182.6	665857.1	4504217.9	665851.1	4504233.4	665851.8	4504231.6
2613	-0.7	-0.5	-0.5	-0.2	-0.2	-0.6	2613	665899.5	4504191.8	665883.6	4504232.6	665881.0	4504239.3	665878.4	4504246.0
2614	-0.7	-0.4	-0.5	-0.1	-0.3	-1.1	2614	665927.4	4504202.8	665912.6	4504240.7	665910.9	4504245.3	665906.2	4504257.2
2615	-0.6	-0.4	-0.5	0.0	-0.4	-1.8	2615	665955.0	4504214.7	665941.3	4504249.8	665941.3	4504249.8	665933.3	4504270.3
2616	-0.7	-0.3	-0.5	0.2	-0.4	-2.5	2616	665982.8	4504225.8	665968.8	4504261.9	665971.6	4504254.7	665960.7	4504282.6
2617	-0.7	-0.3	-0.5	0.3	-0.3	-2.9	2617	666011.2	4504235.6	665996.1	4504274.4	666001.5	4504260.6	665988.9	4504292.9
2618	-0.7	-0.2	-0.5	0.4	-0.3	-3.3	2618	666038.2	4504248.9	666023.4	4504287.1	666031.1	4504267.2	666016.9	4504303.6
2619	-0.7	-0.2	-0.5	0.6	-0.3	-3.6	2619	666065.7	4504261.1	666049.9	4504301.6	666059.8	4504276.2	666044.2	4504316.3
2620	-0.7	-0.1	-0.5	0.6	-0.3	-3.8	2620	666094.6	4504269.6	666078.8	4504310.0	666089.1	4504283.5	666072.6	4504326.0
2621	-0.7	-0.1	-0.5	0.6	-0.2	-3.7	2621	666122.4	4504280.9	666106.4	4504321.8	666117.8	4504292.7	666101.9	4504333.5
2622	-0.7	-0.1	-0.4	0.7	-0.1	-3.4	2622	666149.3	4504294.5	666134.0	4504333.7	666146.2	4504302.3	666131.5	4504340.2
2623	-0.7	-0.0	-0.3	0.8	0.0	-3.3	2623	666176.1	4504308.3	666160.4	4504348.5	666175.3	4504310.3	666161.1	4504346.8
2624	-0.7	0.0	-0.3	0.9	0.0	-3.4	2624	666204.3	4504318.5	666189.7	4504356.1	666204.8	4504317.2	666190.0	4504355.3
2625	-0.7	0.1	-0.3	1.0	0.0	-3.7	2625	666231.5	4504331.4	666217.3	4504367.8	666234.2	4504324.5	666218.2	4504365.4
2626	-0.7	0.1	-0.3	1.0	0.0	-3.8	2626	666260.4	4504339.7	666245.6	4504377.7	666262.8	4504333.7	666246.3	4504375.9
2627	-0.7	0.1	-0.3	1.0	0.1	-3.8	2627	666287.9	4504351.8	666272.9	4504390.4	666291.2	4504343.5	666274.5	4504386.3
2628	-0.7	0.1	-0.3	1.1	0.2	-3.7	2628	666314.9	4504365.2	666299.9	4504403.7	666319.6	4504353.3	666303.2	4504395.1
2629	-0.7	0.1	-0.2	1.1	0.2	-3.5	2629	666342.7	4504376.5	666327.7	4504414.9	666347.4	4504364.5	666332.0	4504403.8
2630	-0.7	0.1	-0.2	1.1	0.3	-3.3	2630	666370.1	4504388.7	666355.5	4504426.2	666375.4	4504375.3	666361.0	4504412.1
2631	-0.7	0.1	-0.2	1.1	0.3	-3.1	2631	666397.8	4504400.4	666383.6	4504436.9	666403.4	4504386.1	666389.8	4504420.8
2632	-0.6	0.1	-0.2	1.1	0.3	-2.9	2632	666426.2	4504410.1	666412.5	4504445.1	666431.4	4504396.8	666418.7	4504429.2
2633	-0.6	0.1	-0.1	1.0	0.3	-2.6	2633	666454.3	4504420.7	666441.0	4504454.6	666459.3	4504407.7	666448.0	4504436.7
2634	-0.6	0.1	-0.1	1.1	0.4	-2.4	2634	666481.6	4504433.2	666467.9	4504468.4	666487.2	4504418.9	666476.6	4504445.9
2635	-0.6	0.2	-0.1	1.1	0.4	-2.3	2635	666508.2	4504447.6	666495.5	4504480.1	666515.0	4504430.0	666505.2	4504455.1
2636	-0.5	0.2	-0.0	1.1	0.5	-2.0	2636	666535.8	4504459.3	666524.4	4504488.5	666543.1	4504440.5	666534.4	4504462.9
2637	-0.5	0.2	0.0	1.0	0.5	-1.8	2637	666563.6	4504470.6	666552.7	4504498.6	666571.1	4504451.3	666563.4	4504471.0
2638	-0.5	0.2	0.0	1.1	0.6	-1.4	2638	666591.2	4504482.3	666580.1	4504510.9	666599.0	4504462.4	666593.0	4504477.7
2639	-0.5	0.2	0.1	1.0	0.7	-0.8	2639	666618.8	4504494.1	666608.4	4504520.8	666626.7	4504473.8	666623.1	4504483.2
2640	-0.5	0.2	0.1	1.0	0.8	-0.4	2640	666646.8	4504505.1	666635.6	4504533.6	666654.1	4504486.4	666652.5	4504490.3
2641	-0.5	0.2	0.2	1.1	0.9	0.1	2641	666673.4	4504519.4	666662.4	4504547.7	666681.6	4504499.5	666681.6	4504498.4
2642	-0.5	0.2	0.2	1.0	0.9	0.3	2642	666700.8	4504531.6	666690.1	4504559.0	666708.6	4504511.6	666710.1	4504507.8
2643	-0.5	0.2	0.2	1.0	0.9	0.4	2643	666728.2	4504544.0	666717.7	4504570.8	666736.2	4504523.5	666737.9	4504519.0
2644	-0.4	0.2	0.2	1.0	0.9	0.4	2644	666754.4	4504559.3	666745.7	4504581.5	666762.9	4504537.5	666764.7	4504533.0
2645	-0.4	0.2	0.2	0.9	0.8	0.4	2645	666782.2	4504570.6	666773.8	4504592.2	666789.5	4504551.9	666791.3	4504547.2
2646	-0.4	0.2	0.2	0.8	0.8	0.5	2646	666809.5	4504583.2	666801.3	4504604.1	666816.0	4504566.5	666818.0	4504561.4
2647	-0.4	0.1	0.2	0.8	0.7	0.4	2647	666837.8	4504593.3	666828.9	4504616.0	666842.8	4504580.2	666844.4	4504576.3
2648	-0.5	0.1	0.1	0.7	0.6	0.2	2648	666866.4	4504602.5	666856.5	4504627.7	666869.7	4504593.9	666870.6	4504591.7
2649	-0.4	0.1	0.1	0.7	0.5	-0.0	2649	666894.0	4504614.2	666885.5	4504636.1	666897.2	4504606.0	666897.0	4504606.4
2650	-0.3	0.1	0.1	0.6	0.5	-0.1	2650	666919.8	4504630.6	666913.1	4504647.7	666924.0	4504619.8	666923.4	4504621.4

Table A-1. High-Water Shoreline Position Change – Rockaway Inlet to Moriches Inlet, New York

	High-Water Shoreline Position Change Rate (m/yr)						High-Water Shoreline Position (UTM Zone 18, NAD 1983)									
	1873/88 to			1933/34 to		1983 to	1873/88			1933/34			1983		1991/97	
Transect #	1933/34	1983	1991/97	1983	1991/97	1991/97	Transect #	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)
2651	-0.4	0.1	0.0	0.6	0.4	-0.2	2651	666948.4	4504639.9	666940.2	4504660.9	666950.8	4504633.7	666950.0	4504635.7
2652	-0.4	0.0	-0.0	0.5	0.4	-0.1	2652	666977.0	4504649.1	666968.0	4504672.2	666977.3	4504648.3	666976.7	4504649.8
2653	-0.4	0.0	-0.0	0.5	0.4	-0.1	2653	667003.6	4504663.4	666995.2	4504684.9	667003.6	4504663.5	667003.2	4504664.4
2654	-0.4	0.0	-0.0	0.4	0.3	-0.4	2654	667030.6	4504676.8	667023.1	4504696.1	667030.4	4504677.3	667028.9	4504681.2
2655	-0.4	-0.0	-0.1	0.4	0.2	-0.6	2655	667057.8	4504689.6	667049.9	4504710.0	667057.6	4504690.2	667055.0	4504696.9
2656	-0.4	-0.0	-0.1	0.4	0.2	-0.7	2656	667085.0	4504702.4	667076.9	4504723.2	667084.7	4504703.3	667081.4	4504711.6
2657	-0.4	-0.0	-0.1	0.5	0.2	-0.9	2657	667112.1	4504715.5	667104.0	4504736.4	667111.9	4504716.1	667108.0	4504726.0
2658	-0.4	0.0	-0.1	0.4	0.1	-1.0	2658	667139.0	4504729.2	667131.4	4504748.5	667138.8	4504729.6	667134.6	4504740.4
2659	-0.3	-0.0	-0.1	0.4	0.1	-1.0	2659	667166.2	4504742.0	667159.6	4504758.9	667165.8	4504743.0	667161.3	4504754.6
2660	-0.3	-0.0	-0.1	0.3	0.0	-1.1	2660	667193.4	4504754.7	667187.7	4504769.4	667192.8	4504756.3	667188.2	4504768.1
2661	-0.3	-0.0	-0.1	0.4	0.1	-1.0	2661	667220.1	4504768.8	667213.1	4504786.8	667219.7	4504770.0	667215.3	4504781.1
2662	-0.4	-0.0	-0.1	0.5	0.2	-0.9	2662	667247.0	4504782.4	667238.7	4504803.8	667246.8	4504782.9	667242.9	4504793.1
2663	-0.4	0.0	-0.1	0.5	0.2	-0.8	2663	667274.1	4504795.6	667266.0	4504816.4	667274.1	4504795.6	667270.4	4504804.9
2664	-0.3	0.0	-0.1	0.4	0.2	-0.8	2664	667300.8	4504809.6	667293.6	4504828.0	667301.4	4504808.2	667298.0	4504816.7
2665	-0.4	-0.0	-0.1	0.4	0.2	-0.7	2665	667328.9	4504820.2	667321.3	4504839.6	667328.6	4504820.8	667325.8	4504828.1
2666	-0.4	0.0	-0.1	0.4	0.2	-0.6	2666	667356.2	4504832.8	667348.5	4504852.5	667356.2	4504832.7	667353.7	4504839.2
2667	-0.4	0.0	-0.0	0.5	0.3	-0.5	2667	667383.0	4504846.4	667375.5	4504865.7	667383.8	4504844.5	667381.7	4504849.9
2668	-0.4	0.0	-0.0	0.5	0.3	-0.5	2668	667410.2	4504859.3	667402.4	4504879.3	667411.2	4504856.8	667409.1	4504862.1
2669	-0.4	0.0	-0.0	0.6	0.4	-0.4	2669	667436.9	4504873.4	667428.7	4504894.5	667438.4	4504869.5	667436.7	4504874.1
2670	-0.4	0.1	0.0	0.6	0.4	-0.4	2670	667463.3	4504888.3	667455.2	4504908.1	667466.0	4504881.5	667464.4	4504885.5
2671	-0.4	0.1	0.1	0.6	0.5	-0.3	2671	667489.6	4504903.5	667482.0	4504922.9	667493.4	4504893.8	667492.1	4504897.1
2672	-0.3	0.1	0.1	0.6	0.5	-0.2	2672	667516.3	4504917.6	667509.4	4504935.3	667520.5	4504906.9	667519.8	4504908.5
2673	-0.3	0.1	0.1	0.6	0.5	0.1	2673	667542.5	4504933.1	667536.4	4504948.6	667547.2	4504921.0	667547.5	4504920.3
2674	-0.2	0.1	0.2	0.5	0.5	0.3	2674	667568.7	4504948.4	667564.0	4504960.5	667573.6	4504935.8	667575.0	4504932.2
2675	-0.2	0.1	0.1	0.5	0.5	0.2	2675	667595.7	4504961.8	667591.6	4504972.2	667600.8	4504948.6	667601.7	4504946.3
2676	-0.3	0.1	0.1	0.6	0.5	0.2	2676	667623.3	4504973.6	667617.9	4504987.3	667628.2	4504960.9	667629.0	4504959.0
2677	-0.4	0.1	0.1	0.7	0.6	0.3	2677	667651.0	4504985.2	667643.3	4505004.8	667655.1	4504974.6	667656.5	4504971.0
2678	-0.4	0.1	0.1	0.7	0.6	0.4	2678	667678.6	4504996.9	667669.4	4505020.5	667681.8	4504988.6	667683.5	4504984.2
2679	-0.5	0.0	0.1	0.7	0.6	0.5	2679	667707.6	4505005.0	667696.7	4505033.1	667708.6	4505002.4	667710.8	4504997.0
2680	-0.5	0.0	0.1	0.6	0.6	0.6	2680	667734.9	4505017.7	667724.7	4505043.9	667735.6	4505015.9	667738.2	4505009.2
2681	-0.4	0.0	0.1	0.6	0.6	0.8	2681	667761.7	4505031.4	667752.6	4505054.8	667762.5	4505029.3	667765.8	4505020.9
2682	-0.5	-0.0	0.1	0.6	0.6	0.9	2682	667790.0	4505041.4	667779.8	4505067.7	667789.5	4505042.7	667793.4	4505032.7
2683	-0.5	-0.0	0.1	0.6	0.6	1.0	2683	667817.5	4505053.6	667806.6	4505081.5	667816.6	4505055.9	667820.9	4505044.9
2684	-0.6	-0.1	0.1	0.5	0.7	1.2	2684	667845.5	4505064.3	667833.4	4505095.2	667843.0	4505070.6	667848.4	4505056.8
2685	-0.6	-0.1	0.1	0.5	0.7	1.3	2685	667872.6	4505077.4	667860.8	4505107.7	667870.1	4505083.7	667875.8	4505069.2
2686	-0.5	-0.1	0.1	0.5	0.7	1.3	2686	667899.7	4505090.4	667888.4	4505119.4	667897.3	4505096.6	667903.0	4505081.9
2687	-0.5	-0.1	0.1	0.5	0.7	1.4	2687	667926.6	4505104.0	667915.8	4505131.7	667923.9	4505110.9	667930.1	4505095.0
2688	-0.5	-0.1	0.1	0.4	0.6	1.4	2688	667953.9	4505116.7	667943.1	4505144.3	667950.6	4505125.2	667956.8	4505109.2
2689	-0.5	-0.1	0.0	0.4	0.6	1.1	2689	667981.1	4505129.4	667970.4	4505156.9	667977.5	4505138.6	667982.5	4505125.9
2690	-0.5	-0.1	0.0	0.4	0.5	0.8	2690	668008.1	4505142.9	667997.0	4505171.3	668004.8	4505151.3	668008.4	4505142.1
2691	-0.5	-0.1	-0.0	0.5	0.4	0.4	2691	668035.2	4505155.8	668024.1	4505184.3	668032.1	4505163.7	668033.7	4505159.7
2692	-0.5	-0.1	-0.1	0.5	0.4	-0.0	2692	668062.6	4505168.1	668051.2	4505197.4	668059.6	4505175.9	668059.4	4505176.3
2693	-0.5	-0.1	-0.1	0.5	0.3	-0.3	2693	668089.4	4505182.0	668078.9	4505208.9	668086.9	4505188.4	668085.6	4505191.9
2694	-0.5	-0.1	-0.1	0.5	0.3	-0.5	2694	668116.2	4505195.9	668105.9	4505222.4	668113.9	4505201.7	668111.7	4505207.4
2695	-0.5	-0.0	-0.1	0.5	0.3	-0.7	2695	668142.1	4505212.0	668131.8	4505238.4	668140.9	4505215.1	668137.8	4505223.2
2696	-0.5	-0.0	-0.1	0.5	0.3	-0.9	2696	668168.5	4505226.9	668158.3	4505253.0	668167.8	4505228.6	668164.1	4505238.2
2697	-0.5	-0.0	-0.1	0.6	0.3	-1.0	2697	668195.8	4505239.4	668184.9	4505267.4	668194.9	4505241.7	668190.7	4505252.7
2698	-0.6	-0.0	-0.1	0.6	0.3	-1.0	2698	668223.4	4505251.4	668211.6	4505281.6	668222.1	4505254.5	668217.6	4505266.1
2699	-0.5	-0.0	-0.1	0.6	0.3	-1.0	2699	668249.6	4505266.7	668238.3	4505295.7	668249.1	4505268.0	668244.8	4505278.9
2700	-0.5	-0.0	-0.1	0.6	0.3	-0.8	2700	668276.2	4505281.0	668265.2	4505309.1	668276.0	4505281.5	668272.4	4505290.7
2701	-0.5	0.0	-0.1	0.6	0.3	-0.5	2701	668302.3	4505296.8	668292.7	4505321.2	668302.5	4505296.2	668300.3	4505301.9
2702	-0.5	-0.0	-0.0	0.5	0.4	-0.1	2702	668329.1	4505310.6	668319.4	4505335.3	668328.7	4505311.5	668328.4	4505312.3
2703	-0.5	-0.1	0.0	0.5	0.5	0.5	2703	668357.0	4505321.6	668345.9	4505350.1	668355.0	4505326.6	668357.0	4505321.5

Table A-1. High-Water Shoreline Position Change – Rockaway Inlet to Moriches Inlet, New York

High-Water Shoreline Position Change Rate (m/yr)						High-Water Shoreline Position (UTM Zone 18, NAD 1983)								
1873/88 to			1933/34 to		1983 to	1873/88		1933/34		1983		1991/97		
Transect #	1933/34	1983	1991/97	1983	1991/97	Transect #	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)
2704	-0.5	-0.1	0.0	0.5	0.6	1.0	2704	668384.1	4505334.5	668372.6	4505364.0	668381.4	4505341.5	668385.8	4505330.3
2705	-0.5	-0.1	0.1	0.5	0.7	1.4	2705	668410.0	4505350.8	668399.1	4505378.6	668408.0	4505355.9	668414.0	4505340.6
2706	-0.5	-0.1	0.1	0.5	0.7	1.6	2706	668436.5	4505365.3	668425.8	4505392.8	668434.5	4505370.4	668441.6	4505352.2
2707	-0.5	-0.1	0.1	0.5	0.7	1.8	2707	668464.1	4505377.3	668452.6	4505406.7	668460.6	4505386.2	668468.5	4505365.8
2708	-0.5	-0.1	0.1	0.4	0.7	1.9	2708	668491.2	4505390.3	668479.6	4505420.1	668486.0	4505403.6	668494.1	4505383.0
2709	-0.5	-0.1	0.1	0.3	0.6	1.7	2709	668517.1	4505406.5	668506.6	4505433.4	668511.6	4505420.4	668519.2	4505401.0
2710	-0.5	-0.2	0.0	0.2	0.5	1.8	2710	668544.5	4505418.8	668533.2	4505447.8	668537.2	4505437.5	668545.2	4505417.0
2711	-0.6	-0.2	-0.0	0.2	0.5	1.9	2711	668571.9	4505430.9	668559.9	4505461.9	668562.8	4505454.4	668571.2	4505432.9
2712	-0.5	-0.2	-0.0	0.1	0.4	1.9	2712	668598.0	4505446.7	668587.5	4505473.6	668588.8	4505470.2	668597.1	4505449.0
2713	-0.5	-0.3	-0.0	0.1	0.4	1.8	2713	668625.1	4505459.7	668614.6	4505486.7	668615.5	4505484.4	668623.2	4505464.6
2714	-0.4	-0.2	-0.0	0.1	0.4	1.6	2714	668651.3	4505475.0	668641.8	4505499.4	668642.7	4505497.3	668649.8	4505479.1
2715	-0.5	-0.3	-0.1	-0.0	0.3	1.4	2715	668679.9	4505484.4	668669.3	4505511.6	668669.0	4505512.4	668674.9	4505497.1
2716	-0.5	-0.3	-0.2	-0.1	0.2	1.3	2716	668708.3	4505494.0	668696.9	4505523.4	668695.0	4505528.1	668700.8	4505513.5
2717	-0.5	-0.4	-0.2	-0.2	0.1	1.1	2717	668735.1	4505508.0	668724.1	4505536.2	668721.1	4505543.8	668726.1	4505531.1
2718	-0.6	-0.4	-0.3	-0.2	0.0	0.8	2718	668763.6	4505517.4	668750.7	4505550.6	668747.9	4505557.7	668751.2	4505549.4
2719	-0.7	-0.4	-0.3	-0.1	0.0	0.5	2719	668791.7	4505527.9	668776.8	4505566.2	668774.7	4505571.5	668777.0	4505565.8
2720	-0.7	-0.5	-0.4	-0.1	-0.0	0.2	2720	668819.2	4505540.1	668803.4	4505580.7	668801.6	4505585.1	668802.6	4505582.7
2721	-0.8	-0.5	-0.4	-0.1	-0.1	0.2	2721	668846.2	4505553.4	668829.9	4505595.2	668827.5	4505601.3	668828.2	4505599.5
2722	-0.7	-0.5	-0.4	-0.2	-0.1	0.2	2722	668872.8	4505567.8	668857.1	4505607.9	668853.8	4505616.5	668854.4	4505614.9
2723	-0.7	-0.5	-0.4	-0.2	-0.1	0.0	2723	668898.4	4505582.2	668883.8	4505622.0	668880.5	4505630.6	668880.7	4505630.1
2724	-0.8	-0.5	-0.5	-0.2	-0.2	-0.1	2724	668926.8	4505594.4	668910.6	4505636.0	668907.0	4505645.1	668906.8	4505645.6
2725	-0.8	-0.5	-0.5	-0.2	-0.2	-0.2	2725	668953.7	4505608.1	668937.6	4505649.3	668933.5	4505659.8	668932.7	4505661.8
2726	-0.8	-0.5	-0.5	-0.2	-0.3	-0.4	2726	668980.6	4505621.7	668964.1	4505664.0	668960.2	4505674.0	668958.6	4505678.1
2727	-0.8	-0.5	-0.5	-0.2	-0.3	-0.5	2727	669007.1	4505636.1	668991.0	4505677.5	668986.8	4505688.4	668984.5	4505694.2
2728	-0.8	-0.5	-0.5	-0.3	-0.3	-0.6	2728	669033.9	4505650.1	669017.9	4505691.1	669013.3	4505702.9	669010.6	4505709.8
2729	-0.8	-0.5	-0.5	-0.3	-0.3	-0.7	2729	669060.7	4505663.8	669044.6	4505705.2	669040.1	4505716.6	669037.1	4505724.3
2730	-0.8	-0.5	-0.6	-0.2	-0.4	-0.9	2730	669087.7	4505677.3	669071.2	4505719.5	669067.4	4505729.4	669063.5	4505739.3
2731	-0.8	-0.5	-0.6	-0.2	-0.4	-1.2	2731	669114.5	4505691.1	669097.9	4505733.6	669094.9	4505741.4	669089.9	4505754.3
2732	-0.8	-0.5	-0.6	-0.2	-0.3	-1.1	2732	669141.2	4505705.1	669124.5	4505748.1	669121.9	4505754.7	669116.9	4505767.4
2733	-0.8	-0.5	-0.6	-0.2	-0.3	-1.0	2733	669168.5	4505717.8	669151.4	4505761.7	669148.6	4505768.8	669144.3	4505779.9
2734	-0.8	-0.5	-0.5	-0.1	-0.3	-0.8	2734	669195.4	4505731.4	669177.9	4505776.1	669175.4	4505782.5	669172.0	4505791.5
2735	-0.8	-0.5	-0.5	-0.1	-0.2	-0.7	2735	669222.3	4505744.9	669205.2	4505788.8	669202.9	4505794.7	669199.8	4505802.6
2736	-0.7	-0.5	-0.5	-0.2	-0.2	-0.5	2736	669249.0	4505758.9	669233.3	4505799.2	669230.5	4505806.6	669228.2	4505812.5
2737	-0.7	-0.5	-0.5	-0.2	-0.2	-0.4	2737	669276.1	4505772.1	669260.4	4505812.5	669257.7	4505819.3	669256.2	4505823.2
2738	-0.7	-0.5	-0.4	-0.2	-0.2	-0.1	2738	669302.4	4505787.4	669287.6	4505825.2	669284.7	4505832.8	669284.2	4505834.0
2739	-0.6	-0.4	-0.4	-0.2	-0.2	0.1	2739	669328.2	4505803.7	669315.2	4505836.9	669311.6	4505846.3	669312.0	4505845.3
2740	-0.6	-0.4	-0.4	-0.2	-0.2	0.1	2740	669354.2	4505819.6	669342.4	4505849.9	669338.5	4505859.8	669339.0	4505858.5
2741	-0.6	-0.4	-0.3	-0.2	-0.1	0.4	2741	669381.1	4505833.1	669369.2	4505863.8	669365.4	4505873.3	669367.3	4505868.5
2742	-0.5	-0.4	-0.3	-0.2	-0.0	0.5	2742	669407.2	4505848.7	669396.1	4505877.4	669393.4	4505884.2	669395.5	4505878.7
2743	-0.5	-0.3	-0.2	-0.1	0.0	0.6	2743	669433.3	4505864.4	669422.9	4505891.2	669420.8	4505896.6	669423.5	4505889.6
2744	-0.5	-0.3	-0.2	-0.1	0.1	1.0	2744	669459.6	4505879.6	669449.5	4505905.6	669447.6	4505910.4	669451.8	4505899.7
2745	-0.5	-0.3	-0.1	-0.1	0.2	1.2	2745	669485.9	4505894.7	669476.2	4505919.5	669474.6	4505923.8	669479.7	4505910.6
2746	-0.4	-0.3	-0.1	-0.1	0.2	1.3	2746	669512.2	4505910.0	669503.8	4505931.4	669502.0	4505938.1	669507.4	4505922.1
2747	-0.3	-0.2	-0.1	-0.2	0.1	1.2	2747	669538.6	4505924.8	669531.9	4505941.9	669529.3	4505948.7	669534.7	4505934.8
2748	-0.3	-0.2	-0.1	-0.2	0.1	1.2	2748	669565.0	4505939.7	669559.3	4505954.2	669556.6	4505961.1	669561.8	4505947.7
2749	-0.3	-0.2	-0.1	-0.2	0.1	1.3	2749	669591.7	4505953.6	669586.5	4505967.1	669583.3	4505975.3	669588.7	4505961.3
2750	-0.3	-0.2	-0.1	-0.2	0.1	1.2	2750	669618.4	4505967.8	669612.9	4505982.0	669609.7	4505990.2	669615.0	4505976.5
2751	-0.3	-0.2	-0.1	-0.2	0.1	1.2	2751	669645.9	4505979.9	669639.1	4505997.4	669636.3	4506004.5	669641.6	4505990.9
2752	-0.3	-0.2	-0.1	-0.1	0.2	1.3	2752	669671.7	4505996.2	669665.3	4506012.6	669662.9	4506019.0	669668.6	4506004.3
2753	-0.3	-0.2	-0.1	-0.1	0.2	1.6	2753	669697.9	4506011.6	669691.6	4506027.8	669689.1	4506034.2	669695.9	4506016.9
2754	-0.3	-0.2	-0.0	-0.1	0.3	1.8	2754	669724.4	4506026.3	669717.8	4506043.2	669715.6	4506049.0	669723.3	4506029.1
2755	-0.3	-0.2	-0.0	-0.2	0.2	1.9	2755	669751.1	4506040.5	669745.1	4506055.7	669742.2	4506063.3	669750.4	4506042.2
2756	-0.4	-0.3	-0.0	-0.1	0.3	2.0	2756	669778.3	4506053.3	669770.4	4506073.5	669768.7	4506077.9	669777.2	4506056.1

Table A-1. High-Water Shoreline Position Change – Rockaway Inlet to Moriches Inlet, New York

High-Water Shoreline Position Change Rate (m/yr)						
	1873/88 to			1933/34 to		1983 to
Transect #	1933/34	1983	1991/97	1983	1991/97	1991/97
2757	-0.4	-0.3	-0.0	-0.1	0.3	2.0
2758	-0.5	-0.3	-0.0	-0.0	0.4	2.1
2759	-0.5	-0.3	0.0	-0.0	0.5	2.4
2760	-0.5	-0.3	0.0	-0.0	0.5	2.7
2761	-0.5	-0.3	0.0	-0.0	0.5	2.9
2762	-0.5	-0.3	0.0	-0.1	0.5	2.9
2763	-0.4	-0.3	0.0	-0.1	0.5	2.8
2764	-0.4	-0.3	0.0	-0.2	0.4	2.7
2765	-0.4	-0.3	-0.0	-0.2	0.4	2.8
2766	-0.4	-0.3	0.0	-0.2	0.4	3.0
2767	-0.5	-0.4	-0.0	-0.2	0.4	2.9
2768	-0.4	-0.3	-0.0	-0.2	0.4	2.8
2769	-0.4	-0.3	-0.0	-0.3	0.4	3.0
2770	-0.5	-0.4	-0.0	-0.3	0.4	3.3
2771	-0.5	-0.4	-0.0	-0.3	0.4	3.6
2772	-0.5	-0.4	-0.0	-0.4	0.5	3.8
2773	-0.5	-0.4	0.0	-0.3	0.5	3.9
2774	-0.5	-0.4	0.1	-0.3	0.6	4.0
2775	-0.4	-0.4	0.1	-0.3	0.6	4.1
2776	-0.4	-0.4	0.1	-0.4	0.5	4.0
2777	-0.4	-0.4	0.0	-0.3	0.5	3.7
2778	-0.5	-0.4	0.0	-0.3	0.5	3.4
2779	-0.5	-0.4	-0.0	-0.3	0.5	3.3
2780	-0.5	-0.4	-0.0	-0.2	0.5	3.4
2781	-0.5	-0.4	0.0	-0.2	0.5	3.4
2782	-0.5	-0.4	0.0	-0.2	0.5	3.5
2783	-0.5	-0.4	-0.0	-0.2	0.5	3.3
2784	-0.5	-0.4	-0.0	-0.2	0.5	3.2
2785	-0.6	-0.4	-0.1	-0.1	0.5	2.9
2786	-0.8	-0.4	-0.1	0.1	0.6	2.7
2787	-0.9	-0.4	-0.1	0.2	0.7	2.6
2788	-1.0	-0.4	-0.1	0.3	0.7	2.3
2789	-1.0	-0.4	-0.1	0.4	0.7	2.1
2790	-1.0	-0.4	-0.1	0.5	0.8	2.1
2791	-1.1	-0.3	-0.1	0.5	0.8	1.8
2792	-1.0	-0.3	-0.1	0.6	0.8	1.6
2793	-1.1	-0.3	-0.1	0.7	0.8	1.2
2794	-1.1	-0.3	-0.2	0.7	0.7	0.8
2795	-1.1	-0.3	-0.2	0.7	0.7	0.6
2796	-1.0	-0.2	-0.2	0.7	0.7	0.4
2797	-1.0	-0.2	-0.2	0.8	0.6	0.0
2798	-1.0	-0.2	-0.2	0.8	0.7	0.1
2799	-1.1	-0.2	-0.2	0.8	0.7	0.1
2800	-1.1	-0.2	-0.2	0.9	0.7	0.2
2801	-1.0	-0.2	-0.1	0.8	0.7	0.3
2802	-1.0	-0.2	-0.1	0.8	0.7	0.5
2803	-1.0	-0.2	-0.1	0.8	0.8	0.7
2804	-1.0	-0.1	-0.0	0.9	0.9	0.8
2805	-1.0	-0.1	0.0	1.0	1.0	0.9
2806	-1.0	-0.1	0.0	1.0	1.0	0.9
2807	-1.0	-0.1	0.0	1.0	1.0	1.0
2808	-0.9	-0.1	0.1	0.9	1.0	1.2
2809	-0.9	-0.1	0.1	1.0	1.1	1.4

High-Water Shoreline Position (UTM Zone 18, NAD 1983)								
	1873/88		1933/34		1983		1991/97	
Transect #	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)
2757	669805.6	4506065.8	669796.6	4506088.9	669795.6	4506091.5	669804.2	4506069.3
2758	669832.8	4506078.5	669823.0	4506103.7	669822.7	4506104.4	669832.0	4506080.7
2759	669860.0	4506091.4	669849.7	4506117.9	669849.5	4506118.3	669859.9	4506091.8
2760	669886.4	4506106.3	669876.2	4506132.5	669875.6	4506134.0	669887.1	4506104.5
2761	669912.8	4506121.1	669902.3	4506148.0	669901.6	4506149.9	669914.1	4506118.0
2762	669940.1	4506133.7	669929.6	4506160.7	669928.0	4506164.7	669940.5	4506132.7
2763	669966.4	4506149.0	669957.1	4506172.7	669954.9	4506178.4	669967.0	4506147.5
2764	669993.1	4506162.9	669984.3	4506185.4	669981.5	4506192.7	669993.3	4506162.5
2765	670020.4	4506175.6	670011.5	4506198.3	670007.7	4506208.1	670019.9	4506176.7
2766	670046.6	4506191.0	670038.0	4506213.1	670033.8	4506223.9	670046.7	4506190.7
2767	670074.2	4506202.7	670064.3	4506228.1	670060.5	4506237.8	670073.1	4506205.4
2768	670100.4	4506218.2	670091.4	4506241.2	670087.3	4506251.7	670099.6	4506220.2
2769	670126.7	4506233.2	670118.1	4506255.3	670113.6	4506267.0	670126.5	4506233.9
2770	670154.1	4506245.6	670144.0	4506271.5	670139.2	4506283.7	670153.7	4506246.7
2771	670181.4	4506258.2	670171.3	4506284.0	670165.2	4506299.7	670180.9	4506259.5
2772	670208.4	4506271.4	670197.8	4506298.6	670191.3	4506315.4	670207.7	4506273.3
2773	670234.8	4506286.3	670223.8	4506314.5	670217.9	4506329.6	670234.9	4506286.1
2774	670260.1	4506303.9	670250.1	4506329.6	670244.8	4506343.2	670262.4	4506298.1
2775	670286.5	4506319.0	670277.5	4506341.9	670271.7	4506357.0	670289.7	4506310.7
2776	670314.0	4506331.0	670304.8	4506354.5	670298.6	4506370.4	670316.2	4506325.2
2777	670340.7	4506345.1	670331.5	4506368.6	670326.2	4506382.4	670342.1	4506341.5
2778	670367.7	4506358.4	670357.7	4506384.1	670353.2	4506395.7	670368.1	4506357.3
2779	670394.8	4506371.5	670384.3	4506398.4	670379.9	4506409.6	670394.4	4506372.5
2780	670421.5	4506385.6	670410.7	4506413.3	670406.4	4506424.3	670421.2	4506386.4
2781	670448.0	4506400.3	670437.1	4506428.1	670433.0	4506438.7	670448.0	4506400.3
2782	670474.7	4506414.3	670463.8	4506442.3	670459.6	4506453.1	670474.6	4506414.5
2783	670501.1	4506429.3	670490.4	4506456.6	670486.1	4506467.7	670500.6	4506430.4
2784	670528.0	4506442.7	670516.5	4506472.2	670513.3	4506480.5	670527.1	4506445.1
2785	670556.0	4506453.6	670542.8	4506487.5	670541.2	4506491.5	670553.7	4506459.4
2786	670583.5	4506465.5	670567.3	4506507.2	670568.5	4506504.0	670580.5	4506473.4
2787	670611.1	4506477.4	670592.1	4506526.3	670595.5	4506517.4	670606.6	4506488.8
2788	670637.8	4506491.6	670617.0	4506544.9	670622.8	4506530.1	670632.7	4506504.7
2789	670664.6	4506505.4	670642.9	4506561.1	670649.9	4506543.1	670659.2	4506519.2
2790	670691.0	4506520.4	670668.8	4506577.2	670677.0	4506556.2	670686.0	4506533.1
2791	670717.4	4506535.2	670694.6	4506593.5	670704.2	4506568.9	670712.2	4506548.4
2792	670743.0	4506552.1	670720.6	4506609.5	670731.2	4506582.3	670738.1	4506564.7
2793	670769.9	4506565.7	670746.5	4506625.7	670758.4	4506595.2	670763.7	4506581.6
2794	670796.7	4506579.5	670773.6	4506638.6	670785.8	4506607.3	670789.1	4506599.0
2795	670822.8	4506595.2	670800.4	4506652.7	670812.9	4506620.5	670815.4	4506614.1
2796	670848.9	4506610.8	670827.2	4506666.5	670840.1	4506633.5	670841.9	4506628.6
2797	670875.4	4506625.5	670854.2	4506679.9	670868.1	4506644.1	670868.2	4506643.8
2798	670902.4	4506638.8	670880.8	4506694.3	670895.0	4506657.8	670895.3	4506657.0
2799	670929.7	4506651.3	670906.8	4506710.0	670921.8	4506671.6	670922.2	4506670.6
2800	670956.4	4506665.5	670933.3	4506724.5	670948.5	4506685.7	670949.1	4506684.0
2801	670982.2	4506681.7	670960.1	4506738.4	670975.0	4506700.3	670976.1	4506697.4
2802	671008.8	4506696.3	670987.8	4506750.0	671002.0	4506713.7	671004.1	4506708.2
2803	671035.4	4506710.5	671014.6	4506763.8	671029.6	4506725.5	671032.5	4506718.1
2804	671062.5	4506723.6	671041.1	4506778.4	671057.4	4506736.7	671060.7	4506728.1
2805	671088.9	4506738.6	671067.9	4506792.3	671085.0	4506748.4	671088.9	4506738.4
2806	671115.2	4506753.7	671094.5	4506806.7	671112.3	4506761.0	671116.4	4506750.5
2807	671142.5	4506766.3	671121.6	4506819.8	671139.2	4506774.7	671143.4	4506764.0
2808	671168.6	4506781.9	671149.0	4506832.1	671165.8	4506789.0	671170.9	4506775.9
2809	671194.6	4506797.8	671175.3	4506847.3	671192.5	4506803.1	671198.5	4506787.7

Table A-1. High-Water Shoreline Position Change – Rockaway Inlet to Moriches Inlet, New York

	High-Water Shoreline Position Change Rate (m/yr)					
	1873/88 to			1933/34 to		1983 to
Transect #	1933/34	1983	1991/97	1983	1991/97	1991/97
2810	-0.9	-0.0	0.1	1.0	1.1	1.6
2811	-0.9	-0.0	0.2	1.0	1.2	2.0
2812	-0.8	-0.0	0.2	1.0	1.2	2.3
2813	-0.8	0.0	0.2	0.9	1.2	2.4
2814	-0.8	-0.0	0.3	0.9	1.3	2.8
2815	-0.8	-0.0	0.3	0.9	1.3	3.1
2816	-0.8	-0.1	0.3	0.8	1.3	3.3
2817	-0.8	-0.1	0.3	0.8	1.3	3.5
2818	-0.8	-0.1	0.3	0.8	1.3	3.5
2819	-0.8	-0.1	0.3	0.8	1.3	3.3
2820	-0.8	-0.1	0.2	0.7	1.1	2.8
2821	-0.7	-0.1	0.1	0.7	1.0	2.3
2822	-0.7	-0.1	0.1	0.6	0.9	2.0
2823	-0.7	-0.2	0.0	0.5	0.8	1.8
2824	-0.7	-0.2	0.0	0.4	0.6	1.8
2825	-0.6	-0.2	-0.0	0.3	0.6	1.9
2826	-0.6	-0.3	-0.0	0.2	0.5	1.9
2827	-0.6	-0.3	-0.0	0.1	0.5	1.9
2828	-0.6	-0.3	-0.1	0.1	0.4	1.9
2829	-0.6	-0.3	-0.1	0.0	0.4	2.0
2830	-0.6	-0.3	-0.1	0.0	0.4	2.0
2831	-0.6	-0.4	-0.1	-0.0	0.4	2.1
2832	-0.6	-0.3	-0.1	-0.1	0.4	2.2
2833	-0.6	-0.4	-0.1	-0.1	0.4	2.2
2834	-0.6	-0.4	-0.1	-0.1	0.4	2.2
2835	-0.6	-0.3	-0.1	-0.1	0.4	2.3
2836	-0.6	-0.3	-0.1	-0.1	0.4	2.4
2837	-0.6	-0.3	-0.1	-0.1	0.4	2.5
2838	-0.6	-0.4	-0.1	-0.2	0.4	2.9
2839	-0.6	-0.4	-0.0	-0.2	0.5	3.3
2840	-0.5	-0.4	-0.0	-0.3	0.5	3.6
2841	-0.6	-0.4	-0.1	-0.3	0.4	3.5
2842	-0.6	-0.5	-0.1	-0.3	0.4	3.3
2843	-0.6	-0.4	-0.1	-0.2	0.4	2.9
2844	-0.5	-0.4	-0.0	-0.1	0.4	2.7
2845	-0.5	-0.3	-0.0	-0.1	0.4	2.4
2846	-0.5	-0.3	-0.0	0.1	0.5	2.1
2847	-0.5	-0.2	-0.0	0.1	0.5	1.8
2848	-0.4	-0.1	0.0	0.3	0.5	1.3
2849	-0.4	0.0	0.1	0.6	0.5	0.2
2850	-0.4	0.2	0.1	0.9	0.6	-0.7
2851	-0.3	0.3	0.1	1.0	0.6	-1.2
2852	-0.4	0.4	0.2	1.2	0.6	-1.8
2853	-0.4	0.4	0.2	1.5	0.8	-2.2
2854	-0.5	0.4	0.1	1.6	0.8	-2.6
2855	-0.6	0.5	0.1	1.8	0.8	-3.0
2856	-0.6	0.5	0.1	1.9	0.8	-3.5
2857	-0.6	0.6	0.1	2.0	0.8	-4.0
2858	-0.7	0.6	0.1	2.1	0.8	-4.5
2859	-0.7	0.6	0.1	2.3	0.9	-4.9
2860	-0.7	0.7	0.1	2.4	0.9	-5.3
2861	-0.7	0.8	0.1	2.5	0.9	-5.7
2862	-0.7	0.8	0.1	2.5	0.8	-6.1

	High-Water Shoreline Position (UTM Zone 18, NAD 1983)							
	1873/88		1933/34		1983		1991/97	
Transect #	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)
2810	671220.9	4506812.8	671201.7	4506862.2	671219.6	4506816.1	671226.5	4506798.4
2811	671247.4	4506827.4	671228.9	4506874.8	671246.4	4506830.1	671255.0	4506808.1
2812	671274.0	4506841.9	671256.0	4506887.9	671272.9	4506844.7	671282.7	4506819.4
2813	671299.8	4506858.2	671283.4	4506900.4	671299.7	4506858.4	671310.3	4506831.2
2814	671326.4	4506872.7	671310.3	4506913.9	671326.1	4506873.4	671338.1	4506842.7
2815	671353.2	4506886.4	671337.0	4506927.9	671352.3	4506888.7	671365.7	4506854.4
2816	671380.5	4506898.9	671363.5	4506942.6	671378.5	4506904.1	671393.0	4506867.0
2817	671407.1	4506913.5	671391.0	4506954.6	671405.1	4506918.5	671420.2	4506879.9
2818	671433.4	4506928.6	671417.4	4506969.6	671431.3	4506933.9	671446.4	4506895.3
2819	671459.8	4506943.3	671443.7	4506984.8	671457.3	4506949.8	671471.7	4506912.8
2820	671486.9	4506956.5	671470.6	4506998.2	671483.7	4506964.8	671495.9	4506933.4
2821	671513.8	4506970.2	671498.1	4507010.2	671509.7	4506980.7	671519.8	4506954.6
2822	671540.3	4506984.8	671525.2	4507023.3	671535.4	4506997.4	671544.1	4506975.0
2823	671566.9	4506999.1	671552.0	4507037.3	671560.8	4507014.6	671568.8	4506994.3
2824	671593.1	4507014.6	671579.0	4507050.5	671585.3	4507034.4	671593.3	4507014.0
2825	671619.1	4507030.2	671605.5	4507065.2	671610.1	4507053.6	671618.4	4507032.1
2826	671645.8	4507044.5	671632.2	4507079.4	671635.6	4507070.7	671643.8	4507049.5
2827	671671.1	4507062.0	671659.3	4507092.3	671661.3	4507087.4	671669.5	4507066.3
2828	671698.0	4507075.7	671685.9	4507106.7	671687.1	4507103.7	671695.6	4507082.0
2829	671725.3	4507088.3	671712.3	4507121.7	671713.0	4507119.8	671721.6	4507097.7
2830	671752.3	4507101.7	671738.9	4507136.1	671739.0	4507135.6	671747.8	4507113.2
2831	671778.8	4507116.2	671765.5	4507150.4	671765.1	4507151.4	671774.4	4507127.6
2832	671804.8	4507132.2	671792.9	4507162.8	671791.4	4507166.6	671801.1	4507141.6
2833	671832.3	4507144.1	671819.7	4507176.6	671818.1	4507180.5	671827.7	4507156.1
2834	671859.0	4507158.3	671846.3	4507190.9	671845.1	4507194.0	671854.7	4507169.5
2835	671885.2	4507173.8	671873.3	4507204.2	671872.0	4507207.5	671882.2	4507181.3
2836	671911.8	4507188.0	671900.0	4507218.5	671898.9	4507221.2	671909.6	4507193.8
2837	671938.7	4507201.7	671926.7	4507232.3	671925.6	4507235.4	671936.3	4507207.9
2838	671965.6	4507215.4	671953.7	4507245.9	671950.9	4507253.0	671963.4	4507220.9
2839	671992.2	4507229.6	671980.5	4507259.8	671976.2	4507270.7	671990.7	4507233.5
2840	672018.9	4507243.6	672007.4	4507273.3	672001.8	4507287.7	672017.4	4507247.6
2841	672045.6	4507257.9	672033.8	4507288.2	672028.3	4507302.3	672043.5	4507263.3
2842	672073.5	4507269.0	672060.4	4507302.3	672055.7	4507314.5	672070.0	4507277.8
2843	672098.7	4507286.8	672086.8	4507317.4	672083.7	4507325.4	672096.5	4507292.5
2844	672124.7	4507302.7	672113.0	4507332.7	672111.0	4507337.9	672122.9	4507307.4
2845	672150.9	4507318.1	672139.6	4507347.0	672138.6	4507349.6	672149.0	4507322.9
2846	672177.7	4507331.8	672166.2	4507361.4	672167.1	4507359.3	672176.1	4507336.1
2847	672204.3	4507346.4	672193.4	4507374.4	672195.9	4507367.9	672203.9	4507347.4
2848	672230.5	4507361.8	672220.9	4507386.2	672226.1	4507373.0	672231.6	4507358.8
2849	672256.9	4507376.6	672248.1	4507399.1	672258.6	4507372.2	672259.5	4507370.0
2850	672282.9	4507392.4	672275.0	4507412.7	672290.2	4507373.7	672287.1	4507381.6
2851	672309.0	4507408.1	672301.8	4507426.5	672320.1	4507379.6	672314.7	4507393.4
2852	672335.3	4507423.3	672327.8	4507442.5	672349.6	4507386.5	672341.9	4507406.4
2853	672361.9	4507437.7	672352.5	4507461.8	672378.8	4507394.4	672369.1	4507419.2
2854	672389.8	4507448.7	672378.3	4507478.2	672407.1	4507404.2	672396.0	4507432.7
2855	672416.5	4507462.8	672404.1	4507494.6	672435.5	4507414.0	672422.3	4507447.8
2856	672443.1	4507477.2	672430.3	4507509.9	672463.9	4507423.8	672448.8	4507462.5
2857	672470.3	4507489.9	672456.6	4507525.2	672492.4	4507433.3	672475.1	4507477.6
2858	672497.6	4507502.6	672483.3	4507539.1	672520.8	4507443.0	672501.4	4507492.7
2859	672524.0	4507517.5	672509.0	4507556.0	672549.1	4507452.9	672527.9	4507507.4
2860	672549.7	4507534.0	672534.9	4507572.0	672577.2	4507463.4	672554.2	4507522.6
2861	672575.0	4507551.7	672561.1	4507587.5	672605.0	4507474.7	672580.0	4507538.9
2862	672601.3	4507566.9	672587.4	4507602.5	672632.5	4507486.8	672606.0	4507554.8

Table A-1. High-Water Shoreline Position Change – Rockaway Inlet to Moriches Inlet, New York

High-Water Shoreline Position Change Rate (m/yr)							High-Water Shoreline Position (UTM Zone 18, NAD 1983)									
1873/88 to			1933/34 to		1983 to		1873/88		1933/34		1983		1991/97			
Transect #	1933/34	1983	1991/97	1963	1991/97	1991/97	Transect #	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	
2863	-0.6	0.8	0.1	2.5	0.8	-6.4	2863	672626.1	4507585.7	672614.2	4507616.5	672659.2	4507600.9	672631.4	4507572.4	
2864	-0.6	0.9	0.1	2.6	0.7	-6.7	2864	672652.5	4507600.8	672640.5	4507631.5	672685.9	4507515.0	672656.8	4507589.6	
2865	-0.6	0.9	0.1	2.6	0.7	-6.7	2865	672679.3	4507614.6	672667.1	4507645.9	672712.8	4507528.7	672683.6	4507603.6	
2866	-0.5	0.9	0.1	2.6	0.7	-6.8	2866	672705.5	4507629.9	672694.0	4507659.5	672739.7	4507542.2	672709.9	4507618.7	
2867	-0.5	0.9	0.1	2.6	0.7	-7.1	2867	672731.2	4507646.7	672720.8	4507673.4	672766.4	4507556.3	672735.6	4507635.4	
2868	-0.5	0.9	0.1	2.6	0.6	-7.2	2868	672758.3	4507659.8	672747.6	4507687.2	672793.0	4507570.7	672761.7	4507651.1	
2869	-0.5	0.9	0.1	2.5	0.6	-7.0	2869	672784.4	4507675.4	672774.7	4507700.2	672819.4	4507585.5	672788.7	4507664.2	
2870	-0.4	0.9	0.1	2.4	0.6	-7.1	2870	672811.2	4507689.2	672802.6	4507711.4	672845.9	4507600.2	672815.2	4507679.0	
2871	-0.4	0.9	0.1	2.4	0.5	-7.0	2871	672838.4	4507702.0	672830.0	4507723.5	672872.1	4507615.5	672841.5	4507694.0	
2872	-0.4	0.9	0.1	2.3	0.5	-7.0	2872	672865.0	4507716.4	672857.4	4507735.8	672898.3	4507631.0	672867.9	4507708.9	
2873	-0.3	0.9	0.1	2.2	0.4	-6.9	2873	672891.1	4507732.0	672884.6	4507748.8	672924.3	4507646.8	672894.2	4507724.2	
2874	-0.3	0.8	0.1	2.2	0.5	-6.4	2874	672917.5	4507747.0	672911.5	4507762.4	672950.1	4507663.2	672922.2	4507735.0	
2875	-0.3	0.8	0.1	2.1	0.5	-5.9	2875	672944.2	4507760.9	672938.5	4507775.6	672975.9	4507679.6	672950.3	4507745.3	
2876	-0.2	0.8	0.2	2.0	0.6	-5.4	2876	672970.3	4507776.6	672965.9	4507787.9	673001.4	4507696.8	672978.1	4507756.6	
2877	-0.1	0.8	0.2	1.9	0.5	-4.9	2877	672995.9	4507793.6	672993.6	4507799.5	673026.7	4507714.6	673005.5	4507768.9	
2878	-0.1	0.8	0.2	1.8	0.6	-4.5	2878	673022.5	4507808.1	673020.5	4507813.0	673052.3	4507731.4	673032.9	4507781.2	
2879	-0.1	0.8	0.3	1.7	0.6	-4.0	2879	673048.7	4507823.4	673047.3	4507826.9	673078.0	4507748.3	673060.7	4507792.7	
2880	-0.1	0.7	0.3	1.6	0.6	-3.6	2880	673076.2	4507835.5	673074.5	4507839.7	673103.6	4507765.0	673088.2	4507804.6	
2881	-0.1	0.7	0.3	1.6	0.6	-3.3	2881	673103.3	4507848.5	673101.5	4507853.2	673129.7	4507780.7	673115.4	4507817.4	
2882	-0.1	0.7	0.3	1.5	0.6	-3.2	2882	673130.2	4507862.1	673128.8	4507865.8	673156.1	4507795.6	673142.1	4507831.6	
2883	-0.1	0.6	0.3	1.5	0.6	-3.3	2883	673157.5	4507874.8	673156.1	4507878.2	673182.6	4507810.4	673168.4	4507846.8	
2884	-0.1	0.6	0.2	1.4	0.5	-3.3	2884	673184.8	4507887.1	673183.3	4507891.0	673209.0	4507825.1	673194.8	4507861.6	
2885	-0.1	0.6	0.2	1.4	0.5	-3.2	2885	673211.9	4507900.4	673210.0	4507905.1	673235.4	4507839.9	673221.6	4507875.4	
2886	-0.1	0.6	0.2	1.4	0.5	-3.0	2886	673238.7	4507914.1	673236.9	4507918.9	673261.4	4507855.9	673248.5	4507888.9	
2887	-0.1	0.6	0.2	1.3	0.5	-2.7	2887	673265.4	4507928.3	673264.3	4507931.2	673287.4	4507871.9	673275.6	4507902.2	
2888	0.0	0.6	0.2	1.2	0.5	-2.6	2888	673292.2	4507942.0	673292.4	4507941.6	673314.0	4507886.1	673302.7	4507915.1	
2889	0.0	0.5	0.2	1.2	0.5	-2.4	2889	673319.9	4507953.7	673320.2	4507952.8	673340.8	4507899.9	673330.4	4507926.8	
2890	0.0	0.5	0.3	1.1	0.5	-2.2	2890	673346.8	4507967.2	673347.1	4507966.4	673367.2	4507914.8	673357.6	4507939.6	
2891	0.1	0.5	0.3	1.1	0.5	-2.1	2891	673373.0	4507982.6	673374.3	4507979.4	673393.8	4507929.4	673384.5	4507953.1	
2892	0.1	0.5	0.3	1.0	0.4	-2.1	2892	673399.5	4507997.1	673402.0	4507990.8	673420.5	4507943.4	673411.3	4507967.0	
2893	0.2	0.6	0.3	1.0	0.4	-2.2	2893	673424.8	4508014.9	673429.5	4508002.8	673447.4	4507957.0	673438.0	4507981.1	
2894	0.3	0.6	0.3	1.0	0.4	-2.2	2894	673450.3	4508032.1	673456.2	4508016.8	673474.3	4507970.5	673464.9	4507994.5	
2895	0.2	0.6	0.3	1.0	0.4	-2.1	2895	673478.4	4508042.6	673483.2	4508030.2	673501.2	4507984.0	673492.1	4508007.5	
2896	0.2	0.6	0.3	1.0	0.4	-2.1	2896	673506.5	4508053.1	673510.6	4508042.6	673527.9	4507998.3	673518.8	4508021.6	
2897	0.3	0.6	0.3	0.9	0.3	-2.1	2897	673532.6	4508068.7	673538.0	4508054.9	673554.4	4508012.9	673545.1	4508036.8	
2898	0.2	0.5	0.2	0.9	0.3	-2.4	2898	673560.3	4508080.3	673564.9	4508068.5	673581.2	4508026.7	673570.8	4508053.3	
2899	0.2	0.5	0.2	0.9	0.2	-2.5	2899	673587.7	4508092.7	673592.1	4508081.2	673608.3	4508039.8	673597.4	4508067.8	
2900	0.3	0.6	0.2	0.9	0.2	-2.6	2900	673613.9	4508108.0	673620.0	4508092.3	673635.4	4508052.8	673624.2	4508081.5	
2901	0.4	0.6	0.3	0.9	0.2	-2.7	2901	673640.4	4508122.7	673647.8	4508103.7	673662.8	4508065.1	673651.2	4508094.9	
2902	0.3	0.5	0.2	0.8	0.1	-2.9	2902	673669.2	4508131.3	673675.5	4508115.2	673690.2	4508077.4	673677.8	4508109.4	
2903	0.3	0.5	0.2	0.8	0.0	-2.9	2903	673697.1	4508142.4	673703.3	4508126.4	673717.0	4508091.3	673704.2	4508124.2	
2904	0.3	0.5	0.1	0.7	0.0	-3.0	2904	673724.7	4508154.1	673730.6	4508139.0	673743.8	4508105.3	673730.8	4508138.5	
2905	0.3	0.5	0.1	0.6	-0.1	-3.0	2905	673752.7	4508165.1	673758.8	4508149.3	673770.2	4508120.0	673757.2	4508153.3	
2906	0.3	0.4	0.1	0.6	-0.1	-3.0	2906	673779.8	4508177.9	673786.4	4508161.1	673796.7	4508134.7	673783.5	4508168.6	
2907	0.3	0.4	0.1	0.5	-0.2	-3.0	2907	673807.5	4508189.7	673813.8	4508173.4	673823.2	4508149.3	673810.2	4508182.6	
2908	0.3	0.4	0.1	0.5	-0.2	-3.0	2908	673834.6	4508202.6	673841.3	4508185.5	673850.1	4508162.9	673837.2	4508195.9	
2909	0.4	0.4	0.1	0.5	-0.2	-3.1	2909	673860.6	4508218.5	673868.7	4508197.7	673877.2	4508175.9	673863.8	4508210.3	
2910	0.4	0.4	0.1	0.4	-0.3	-3.1	2910	673888.1	4508230.6	673896.4	4508209.2	673904.3	4508189.0	673890.8	4508223.6	
2911	0.3	0.4	0.1	0.4	-0.2	-2.7	2911	673916.5	4508240.4	673923.7	4508221.8	673930.7	4508203.9	673918.8	4508234.4	
2912	0.3	0.3	0.1	0.3	-0.2	-2.4	2912	673943.5	4508253.7	673950.9	4508234.8	673956.7	4508219.8	673946.1	4508247.1	
2913	0.4	0.3	0.1	0.3	-0.3	-2.5	2913	673970.2	4508267.9	673978.7	4508246.0	673983.5	4508233.7	673972.7	4508261.4	
2914	0.5	0.4	0.1	0.3	-0.3	-2.5	2914	673996.8	4508282.1	674006.6	4508257.1	674011.0	4508245.8	674000.1	4508273.6	
2915	0.5	0.4	0.1	0.2	-0.4	-2.5	2915	674023.6	4508296.0	674034.9	4508267.1	674037.6	4508260.0	674026.9	4508287.6	

Table A-1. High-Water Shoreline Position Change – Rockaway Inlet to Moriches Inlet, New York

High-Water Shoreline Position Change Rate (m/yr)							High-Water Shoreline Position (UTM Zone 18, NAD 1983)									
1873/88 to			1933/34 to		1983 to		1873/88		1933/34		1983		1991/97			
Transect #	1933/34	1983	1991/97	1983	1991/97	1991/97	Transect #	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)
2916	0.6	0.3	0.1	0.1	-0.4	-2.4	2916	674050.9	4508308.4	674062.7	4508278.3	674063.7	4508275.6	674053.3	4508302.4
2917	0.7	0.3	0.1	-0.1	-0.5	-2.2	2917	674077.1	4508324.0	674091.3	4508287.6	674090.2	4508290.3	674080.7	4508314.7
2918	0.8	0.3	0.1	-0.2	-0.5	-2.0	2918	674103.7	4508338.4	674119.8	4508297.1	674116.8	4508304.6	674108.1	4508326.9
2919	0.8	0.3	0.1	-0.2	-0.5	-2.0	2919	674130.5	4508352.2	674147.4	4508308.7	674144.0	4508317.6	674135.4	4508339.6
2920	0.8	0.4	0.1	-0.2	-0.5	-2.0	2920	674157.4	4508365.7	674174.3	4508322.5	674171.2	4508330.3	674162.3	4508353.1
2921	0.8	0.3	0.1	-0.2	-0.5	-2.0	2921	674184.5	4508378.8	674201.3	4508335.8	674197.9	4508344.5	674189.2	4508366.7
2922	0.8	0.3	0.1	-0.3	-0.6	-1.8	2922	674212.2	4508390.4	674228.4	4508348.9	674224.0	4508360.2	674216.1	4508380.4
2923	0.7	0.3	0.1	-0.3	-0.6	-1.7	2923	674239.9	4508402.0	674255.4	4508362.3	674250.6	4508374.5	674243.2	4508393.4
2924	0.7	0.3	0.1	-0.3	-0.5	-1.6	2924	674266.7	4508415.8	674281.9	4508376.8	674277.1	4508389.0	674270.1	4508407.0
2925	0.7	0.3	0.1	-0.3	-0.5	-1.6	2925	674293.3	4508430.0	674308.0	4508392.3	674303.4	4508404.3	674296.5	4508421.9
2926	0.7	0.2	0.0	-0.3	-0.6	-1.7	2926	674320.6	4508442.7	674336.0	4508403.3	674330.0	4508418.6	674322.5	4508437.8
2927	0.8	0.2	0.0	-0.4	-0.7	-1.9	2927	674348.0	4508454.9	674364.3	4508413.1	674356.6	4508432.9	674348.5	4508453.7
2928	0.7	0.2	-0.0	-0.5	-0.8	-1.8	2928	674375.3	4508467.7	674391.2	4508426.9	674382.3	4508449.5	674374.6	4508469.4
2929	0.6	0.1	-0.0	-0.4	-0.7	-1.6	2929	674402.4	4508480.6	674415.8	4508446.4	674407.9	4508466.5	674400.9	4508484.6
2930	0.6	0.1	-0.0	-0.5	-0.7	-1.4	2930	674428.9	4508495.3	674442.5	4508460.4	674433.8	4508482.8	674427.8	4508498.1
2931	0.7	0.1	-0.0	-0.5	-0.7	-1.2	2931	674455.2	4508510.4	674469.0	4508474.9	674460.0	4508498.1	674454.7	4508511.8
2932	0.6	0.1	-0.0	-0.5	-0.6	-1.1	2932	674482.2	4508523.8	674495.6	4508489.3	674486.4	4508513.0	674481.6	4508525.2
2933	0.6	0.1	-0.0	-0.6	-0.7	-1.0	2933	674509.9	4508535.2	674522.9	4508502.0	674512.9	4508527.7	674508.3	4508539.4
2934	0.6	0.1	-0.1	-0.6	-0.7	-1.0	2934	674537.2	4508548.0	674550.2	4508514.6	674539.3	4508542.4	674534.9	4508553.7
2935	0.6	0.1	-0.1	-0.6	-0.7	-1.0	2935	674563.6	4508562.7	674576.8	4508528.8	674565.7	4508557.4	674561.1	4508569.1
2936	0.6	0.1	-0.1	-0.6	-0.7	-1.0	2936	674590.1	4508577.2	674603.3	4508543.4	674592.1	4508572.3	674587.5	4508584.0
2937	0.6	0.0	-0.1	-0.7	-0.7	-0.9	2937	674616.8	4508591.5	674630.2	4508557.2	674618.4	4508587.4	674614.3	4508597.9
2938	0.7	0.1	-0.0	-0.7	-0.7	-0.8	2938	674642.7	4508607.5	674657.3	4508570.2	674644.8	4508602.3	674641.3	4508611.2
2939	0.8	0.1	0.0	-0.8	-0.8	-0.7	2939	674668.3	4508624.5	674684.9	4508582.0	674671.2	4508617.0	674668.2	4508624.8
2940	0.8	0.1	0.0	-0.8	-0.8	-0.6	2940	674694.8	4508639.2	674711.9	4508595.2	674697.7	4508631.7	674695.0	4508638.5
2941	0.8	0.1	0.0	-0.8	-0.7	-0.2	2941	674721.0	4508654.6	674738.5	4508609.6	674723.6	4508647.8	674722.8	4508650.0
2942	0.8	0.1	0.1	-0.9	-0.7	0.3	2942	674747.4	4508669.4	674765.5	4508623.1	674749.7	4508663.6	674750.9	4508660.5
2943	0.8	0.0	0.1	-0.9	-0.6	0.8	2943	674775.2	4508680.8	674791.9	4508637.8	674775.8	4508679.1	674779.5	4508669.7
2944	0.5	-0.1	0.1	-0.8	-0.3	1.4	2944	674804.3	4508688.7	674815.7	4508659.5	674802.0	4508694.5	674808.2	4508678.6
2945	0.5	-0.1	0.1	-0.8	-0.3	1.7	2945	674832.4	4508699.2	674843.8	4508670.0	674828.9	4508708.1	674836.4	4508688.8
2946	0.6	-0.0	0.2	-0.8	-0.3	1.9	2946	674857.4	4508717.6	674870.0	4508685.4	674855.9	4508721.5	674864.1	4508700.5
2947	0.6	-0.1	0.2	-0.8	-0.3	2.0	2947	674884.8	4508730.0	674897.5	4508697.5	674882.9	4508734.7	674891.4	4508713.0
2948	0.6	-0.1	0.2	-0.8	-0.3	2.0	2948	674912.0	4508742.7	674924.3	4508711.2	674910.0	4508748.0	674918.6	4508725.8
2949	0.5	-0.1	0.1	-0.7	-0.2	1.9	2949	674939.1	4508755.9	674950.0	4508728.0	674936.8	4508761.6	674945.2	4508740.1
2950	0.5	-0.1	0.1	-0.8	-0.3	1.8	2950	674966.0	4508769.3	674977.0	4508741.2	674963.6	4508775.5	674971.6	4508755.2
2951	0.5	-0.1	0.1	-0.8	-0.3	1.7	2951	674993.3	4508781.9	675004.8	4508752.4	674991.0	4508788.0	674998.1	4508769.6
2952	0.6	-0.0	0.1	-0.8	-0.3	1.4	2952	675020.2	4508795.6	675031.9	4508765.5	675018.6	4508799.8	675024.6	4508784.4
2953	0.5	-0.0	0.1	-0.7	-0.3	1.1	2953	675047.0	4508809.4	675058.7	4508779.5	675046.1	4508811.7	675051.1	4508798.9
2954	0.6	-0.0	0.1	-0.7	-0.4	0.9	2954	675074.1	4508822.6	675086.0	4508792.1	675073.7	4508823.5	675077.7	4508813.3
2955	0.6	-0.0	0.1	-0.7	-0.4	0.8	2955	675101.5	4508834.9	675113.7	4508803.6	675100.9	4508836.3	675104.3	4508827.6
2956	0.6	-0.0	0.0	-0.8	-0.5	0.6	2956	675129.6	4508845.4	675141.7	4508814.4	675128.2	4508848.9	675130.9	4508841.9
2957	0.6	-0.0	0.0	-0.8	-0.5	0.4	2957	675156.3	4508859.4	675169.2	4508826.4	675155.9	4508860.5	675157.6	4508856.2
2958	0.6	-0.0	0.0	-0.7	-0.6	0.2	2958	675183.7	4508871.8	675196.7	4508838.5	675183.5	4508872.4	675184.1	4508870.7
2959	0.5	-0.1	-0.1	-0.8	-0.6	-0.0	2959	675212.7	4508879.9	675224.0	4508850.9	675210.7	4508885.0	675210.7	4508885.2
2960	0.5	-0.1	-0.1	-0.8	-0.6	0.1	2960	675241.2	4508889.6	675251.5	4508863.0	675237.4	4508899.1	675237.7	4508898.4
2961	0.6	-0.1	-0.1	-0.8	-0.6	0.2	2961	675267.1	4508905.5	675279.1	4508874.9	675264.3	4508912.9	675265.1	4508910.8
2962	0.7	0.0	0.0	-0.8	-0.6	0.3	2962	675291.2	4508926.5	675306.9	4508886.2	675291.8	4508924.7	675293.0	4508921.7
2963	0.8	0.0	0.1	-0.9	-0.6	0.5	2963	675317.5	4508941.4	675334.2	4508898.8	675319.1	4508937.4	675321.1	4508932.3
2964	0.8	0.0	0.1	-0.9	-0.6	0.5	2964	675345.2	4508953.0	675361.5	4508911.3	675346.1	4508950.7	675348.3	4508945.2
2965	0.8	0.0	0.1	-1.0	-0.7	0.5	2965	675372.8	4508964.8	675390.1	4508920.6	675373.0	4508964.4	675375.3	4508958.5
2966	0.9	0.0	0.1	-1.1	-0.7	0.7	2966	675399.7	4508978.4	675418.5	4508930.3	675399.9	4508978.0	675403.0	4508970.0
2967	0.8	-0.0	0.1	-1.0	-0.7	0.8	2967	675428.7	4508986.7	675445.8	4508942.7	675427.4	4508990.1	675430.8	4508981.4
2968	0.7	-0.1	0.1	-1.0	-0.6	0.9	2968	675456.8	4508997.3	675472.6	4508956.7	675454.8	4509002.4	675458.7	4508992.2

Table A-1. High-Water Shoreline Position Change – Rockaway Inlet to Moriches Inlet, New York

	High-Water Shoreline Position Change Rate (m/yr)						High-Water Shoreline Position (UTM Zone 18, NAD 1983)								
	1873/88 to			1933/34 to		1983 to	1873/88			1933/34			1983		1991/97
Transect #	1933/34	1983	1991/97	1983	1991/97	1991/97	Transect #	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)
2969	0.7	-0.1	0.1	-0.9	-0.5	1.2	2969	675484.0	4509009.9	675498.3	4508973.4	675481.8	4509015.6	675486.8	4509002.8
2970	0.6	-0.1	0.1	-0.9	-0.4	1.4	2970	675511.4	4509022.2	675523.7	4508990.8	675508.2	4509030.6	675514.5	4509014.4
2971	0.5	-0.1	0.1	-0.9	-0.4	1.8	2971	675540.0	4509031.6	675550.0	4509006.0	675534.3	4509046.1	675542.1	4509026.1
2972	0.4	-0.2	0.0	-0.9	-0.3	2.0	2972	675568.9	4509040.0	675576.5	4509020.6	675561.2	4509059.8	675569.9	4509037.5
2973	0.3	-0.2	-0.0	-0.8	-0.3	2.0	2973	675597.0	4509050.4	675602.8	4509035.7	675588.0	4509073.5	675596.8	4509051.0
2974	0.2	-0.2	-0.0	-0.8	-0.2	2.0	2974	675624.1	4509063.5	675629.0	4509051.1	675614.8	4509087.4	675623.6	4509064.8
2975	0.2	-0.3	-0.0	-0.8	-0.2	2.2	2975	675651.3	4509076.4	675655.4	4509066.0	675641.5	4509101.6	675651.0	4509077.2
2976	0.2	-0.2	-0.0	-0.7	-0.2	2.0	2976	675678.3	4509089.6	675681.7	4509081.0	675668.8	4509114.0	675677.6	4509091.4
2977	0.1	-0.3	-0.0	-0.7	-0.2	1.9	2977	675705.9	4509101.5	675708.5	4509094.8	675696.1	4509126.8	675704.3	4509105.8
2978	0.1	-0.3	-0.1	-0.7	-0.2	1.7	2978	675733.4	4509113.6	675735.6	4509107.9	675723.4	4509139.3	675731.0	4509119.8
2979	0.1	-0.3	-0.1	-0.7	-0.2	1.7	2979	675760.6	4509126.4	675762.6	4509121.3	675750.3	4509152.8	675757.8	4509133.7
2980	0.0	-0.3	-0.1	-0.7	-0.2	1.7	2980	675788.8	4509136.7	675788.9	4509136.3	675777.3	4509166.3	675784.7	4509147.2
2981	-0.1	-0.3	-0.1	-0.6	-0.2	1.7	2981	675817.0	4509146.9	675815.9	4509149.7	675804.5	4509179.0	675811.7	4509160.5
2982	-0.1	-0.3	-0.1	-0.6	-0.2	1.5	2982	675844.5	4509159.1	675842.9	4509163.1	675831.9	4509191.4	675838.4	4509174.5
2983	-0.0	-0.3	-0.2	-0.6	-0.3	1.3	2983	675871.3	4509172.8	675870.4	4509175.1	675859.3	4509203.5	675865.0	4509189.0
2984	-0.1	-0.3	-0.2	-0.6	-0.3	1.0	2984	675898.4	4509186.0	675897.3	4509188.8	675887.0	4509215.2	675891.5	4509203.7
2985	-0.0	-0.3	-0.2	-0.6	-0.3	0.9	2985	675925.3	4509199.6	675924.6	4509201.4	675914.1	4509228.3	675917.9	4509218.4
2986	-0.1	-0.3	-0.2	-0.5	-0.3	0.6	2986	675953.0	4509211.2	675951.3	4509215.3	675942.1	4509239.0	675944.8	4509232.2
2987	-0.1	-0.3	-0.2	-0.5	-0.3	0.5	2987	675979.8	4509224.9	675978.7	4509227.8	675969.9	4509250.4	675972.2	4509244.5
2988	-0.1	-0.3	-0.2	-0.5	-0.3	0.7	2988	676007.0	4509237.8	676006.0	4509240.3	675997.1	4509263.1	676000.3	4509254.9
2989	-0.1	-0.3	-0.2	-0.5	-0.3	0.5	2989	676034.8	4509249.0	676033.2	4509253.0	676025.0	4509274.1	676027.3	4509266.1
2990	-0.0	-0.2	-0.2	-0.5	-0.4	-0.0	2990	676061.9	4509262.1	676061.1	4509264.1	676052.6	4509285.9	676052.6	4509286.0
2991	0.1	-0.2	-0.2	-0.6	-0.5	-0.3	2991	676088.2	4509277.2	676089.6	4509273.6	676079.7	4509299.1	676078.5	4509302.1
2992	0.2	-0.2	-0.2	-0.6	-0.6	-0.3	2992	676113.1	4509296.0	676117.7	4509284.2	676106.3	4509313.3	676105.2	4509316.2
2993	0.3	-0.1	-0.2	-0.7	-0.6	-0.3	2993	676138.6	4509313.0	676145.3	4509295.9	676133.2	4509327.0	676132.1	4509329.7
2994	0.4	-0.1	-0.1	-0.7	-0.6	-0.4	2994	676165.1	4509327.7	676173.0	4509307.4	676160.6	4509339.2	676159.0	4509343.4
2995	0.4	-0.1	-0.2	-0.7	-0.7	-0.6	2995	676192.7	4509339.4	676201.4	4509317.2	676188.3	4509350.7	676185.8	4509357.3
2996	0.4	-0.1	-0.2	-0.7	-0.7	-0.7	2996	676221.0	4509349.5	676229.2	4509328.6	676215.9	4509362.5	676213.0	4509370.0
2997	0.4	-0.1	-0.2	-0.7	-0.7	-0.7	2997	676248.7	4509361.1	676256.4	4509341.4	676243.4	4509374.7	676240.4	4509382.4
2998	0.4	-0.1	-0.2	-0.7	-0.8	-0.9	2998	676276.5	4509372.4	676284.1	4509352.9	676270.9	4509386.7	676266.9	4509397.0
2999	0.3	-0.2	-0.3	-0.8	-0.8	-1.1	2999	676305.0	4509382.0	676311.8	4509364.3	676298.0	4509399.7	676293.3	4509411.8
3000	0.4	-0.2	-0.3	-0.8	-0.9	-1.1	3000	676331.4	4509396.8	676339.0	4509377.1	676325.1	4509413.0	676320.2	4509425.5
3001	0.4	-0.1	-0.2	-0.8	-0.9	-1.1	3001	676357.0	4509413.7	676366.0	4509390.6	676351.9	4509426.8	676347.0	4509439.4
3002	0.4	-0.1	-0.2	-0.8	-0.9	-1.2	3002	676383.7	4509427.8	676393.2	4509403.4	676378.7	4509440.5	676373.5	4509454.0
3003	0.4	-0.2	-0.3	-0.8	-0.9	-1.3	3003	676411.5	4509439.1	676420.8	4509415.3	676405.8	4509453.7	676400.2	4509468.2
3004	0.4	-0.2	-0.3	-0.8	-1.0	-1.6	3004	676439.4	4509450.0	676448.3	4509427.2	676433.4	4509465.6	676426.6	4509483.0
3005	0.5	-0.1	-0.3	-0.9	-1.1	-1.9	3005	676464.6	4509468.0	676476.1	4509438.5	676460.7	4509478.0	676452.6	4509498.8
3006	0.6	-0.1	-0.3	-1.0	-1.1	-1.8	3006	676492.1	4509480.2	676503.8	4509450.1	676486.5	4509494.4	676478.6	4509514.8
3007	0.6	-0.1	-0.3	-1.1	-1.2	-1.9	3007	676517.9	4509496.4	676531.4	4509462.0	676512.4	4509510.5	676504.3	4509531.4
3008	0.7	-0.2	-0.3	-1.2	-1.3	-1.8	3008	676545.0	4509509.5	676559.0	4509473.6	676538.6	4509525.9	676530.8	4509546.0
3009	0.6	-0.2	-0.4	-1.2	-1.3	-1.8	3009	676573.1	4509520.0	676586.6	4509485.6	676565.2	4509540.3	676557.6	4509559.8
3010	0.6	-0.2	-0.4	-1.2	-1.3	-1.8	3010	676601.2	4509530.7	676613.9	4509498.1	676592.5	4509552.9	676584.6	4509573.2
3011	0.6	-0.3	-0.4	-1.2	-1.3	-1.8	3011	676629.6	4509540.5	676641.5	4509509.9	676619.9	4509565.2	676612.0	4509585.6
3012	0.5	-0.3	-0.4	-1.2	-1.3	-1.8	3012	676658.0	4509550.2	676668.4	4509523.6	676647.1	4509578.0	676639.5	4509597.6
3013	0.4	-0.3	-0.4	-1.2	-1.3	-1.6	3013	676686.2	4509560.5	676695.3	4509537.0	676673.8	4509592.1	676667.0	4509609.5
3014	0.4	-0.3	-0.4	-1.2	-1.2	-1.3	3014	676713.0	4509574.1	676722.2	4509550.7	676700.6	4509606.0	676694.8	4509620.8
3015	0.5	-0.3	-0.4	-1.2	-1.3	-1.5	3015	676739.4	4509589.2	676749.4	4509563.5	676727.8	4509618.7	676721.5	4509635.0
3016	0.4	-0.3	-0.4	-1.2	-1.3	-1.8	3016	676767.3	4509600.2	676776.3	4509576.9	676755.6	4509630.2	676747.9	4509648.8
3017	0.4	-0.3	-0.5	-1.1	-1.3	-1.9	3017	676794.8	4509612.0	676803.1	4509590.9	676783.2	4509642.0	676775.1	4509662.6
3018	0.4	-0.3	-0.4	-1.1	-1.2	-1.6	3018	676821.8	4509625.5	676829.4	4509606.0	676810.7	4509654.0	676803.8	4509671.6
3019	0.3	-0.3	-0.4	-1.0	-1.1	-1.2	3019	676849.1	4509638.1	676856.0	4509620.4	676837.6	4509667.6	676832.5	4509680.7
3020	0.3	-0.3	-0.3	-1.1	-1.0	-0.6	3020	676876.5	4509650.4	676883.1	4509633.4	676864.4	4509681.5	676861.8	4509688.2
3021	0.3	-0.3	-0.3	-1.1	-0.9	-0.1	3021	676903.6	4509663.4	676910.7	4509645.3	676890.7	4509696.5	676890.3	4509697.5

Table A-1. High-Water Shoreline Position Change – Rockaway Inlet to Moriches Inlet, New York

	High-Water Shoreline Position Change Rate (m/yr)					
	1873/88 to			1933/34 to		1983 to
Transect #	1933/34	1983	1991/97	1983	1991/97	1991/97
3022	0.3	-0.4	-0.3	-1.2	-0.8	0.6
3023	0.3	-0.4	-0.2	-1.2	-0.7	1.3
3024	0.3	-0.4	-0.2	-1.2	-0.6	1.9
3025	0.4	-0.4	-0.1	-1.3	-0.5	2.5
3026	0.4	-0.4	-0.0	-1.3	-0.4	2.9
3027	0.4	-0.3	-0.0	-1.3	-0.4	3.0
3028	0.5	-0.3	0.0	-1.3	-0.4	3.1
3029	0.5	-0.3	0.0	-1.3	-0.4	3.1
3030	0.5	-0.3	0.0	-1.3	-0.5	3.0
3031	0.5	-0.3	0.0	-1.3	-0.4	3.2
3032	0.6	-0.3	0.1	-1.3	-0.4	3.4
3033	0.5	-0.3	0.0	-1.3	-0.4	3.3
3034	0.5	-0.3	0.0	-1.3	-0.4	3.3
3035	0.5	-0.3	0.0	-1.3	-0.4	3.4
3036	0.5	-0.3	0.1	-1.3	-0.4	3.5
3037	0.5	-0.3	0.0	-1.3	-0.4	3.3
3038	0.4	-0.4	0.0	-1.3	-0.4	3.2
3039	0.4	-0.4	-0.0	-1.3	-0.5	3.0
3040	0.4	-0.4	-0.1	-1.3	-0.5	2.9
3041	0.3	-0.4	-0.1	-1.3	-0.5	2.8
3042	0.2	-0.5	-0.2	-1.3	-0.5	2.8
3043	0.2	-0.5	-0.2	-1.3	-0.5	2.6
3044	0.2	-0.5	-0.2	-1.3	-0.5	2.4
3045	0.1	-0.5	-0.2	-1.3	-0.6	2.3
3046	0.1	-0.5	-0.3	-1.3	-0.6	2.2
3047	0.1	-0.5	-0.3	-1.3	-0.6	2.1
3048	0.1	-0.5	-0.2	-1.2	-0.6	2.1
3049	0.1	-0.5	-0.2	-1.2	-0.5	2.2
3050	0.2	-0.4	-0.2	-1.1	-0.5	2.0
3051	0.2	-0.4	-0.2	-1.0	-0.5	1.9
3052	0.2	-0.3	-0.1	-0.9	-0.4	1.8
3053	0.3	-0.3	-0.1	-0.9	-0.4	1.8
3054	0.3	-0.2	-0.0	-0.9	-0.3	1.9
3055	0.4	-0.2	0.1	-0.9	-0.3	2.1
3056	0.5	-0.1	0.1	-0.9	-0.3	2.2
3057	0.5	-0.1	0.1	-0.9	-0.3	2.3
3058	0.5	-0.1	0.1	-0.9	-0.3	2.5
3059	0.5	-0.1	0.1	-0.9	-0.3	2.6
3060	0.6	-0.2	0.1	-1.0	-0.3	2.6
3061	0.6	-0.1	0.1	-1.0	-0.3	2.5
3062	0.7	-0.1	0.2	-1.0	-0.4	2.3
3063	0.7	-0.1	0.1	-1.0	-0.4	2.1
3064	0.7	-0.1	0.1	-1.0	-0.5	1.8
3065	0.8	-0.0	0.1	-1.0	-0.5	1.4
3066	0.7	-0.0	0.1	-0.9	-0.6	1.0
3067	0.7	-0.1	0.0	-1.0	-0.6	1.0
3068	0.6	-0.1	0.0	-1.0	-0.6	0.9
3069	0.6	-0.1	-0.0	-1.0	-0.6	1.0
3070	0.5	-0.1	0.0	-0.9	-0.5	1.2
3071	0.6	-0.1	0.0	-1.0	-0.5	1.3
3072	0.6	-0.1	0.1	-0.9	-0.5	1.3
3073	0.6	-0.1	0.0	-0.9	-0.5	1.3
3074	0.6	-0.1	0.0	-0.9	-0.5	1.2

	High-Water Shoreline Position (UTM Zone 18, NAD 1983)							
	1873/88		1933/34		1983		1991/97	
Transect #	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)
3022	676931.4	4509674.8	676938.0	4509657.9	676917.0	4509711.6	676919.7	4509704.6
3023	676957.8	4509689.6	676965.1	4509670.9	676943.5	4509726.4	676949.3	4509711.4
3024	676984.9	4509702.7	676991.8	4509684.9	676969.8	4509741.3	676978.1	4509720.1
3025	677011.3	4509717.5	677018.8	4509698.3	676996.4	4509755.8	677007.1	4509728.3
3026	677037.4	4509733.2	677045.6	4509712.1	677023.2	4509769.6	677035.8	4509737.3
3027	677064.0	4509747.5	677072.8	4509725.0	677050.6	4509781.9	677063.6	4509748.5
3028	677090.4	4509762.4	677100.5	4509736.4	677078.0	4509794.2	677091.6	4509759.5
3029	677117.2	4509776.2	677128.5	4509747.3	677105.5	4509806.3	677118.9	4509772.0
3030	677144.7	4509788.4	677156.2	4509758.8	677133.0	4509818.5	677146.0	4509784.9
3031	677172.1	4509800.6	677183.4	4509771.8	677159.7	4509832.4	677173.8	4509796.2
3032	677198.5	4509815.5	677210.3	4509785.2	677186.6	4509846.1	677201.2	4509808.6
3033	677227.2	4509824.5	677237.6	4509797.7	677214.1	4509858.2	677228.3	4509821.7
3034	677254.4	4509837.3	677264.8	4509810.6	677241.4	4509870.6	677255.6	4509834.3
3035	677281.7	4509849.9	677292.0	4509823.5	677268.6	4509883.5	677283.4	4509845.5
3036	677309.4	4509861.4	677319.9	4509834.6	677296.1	4509895.5	677311.5	4509856.2
3037	677337.1	4509873.1	677347.8	4509845.5	677323.9	4509906.8	677338.5	4509869.5
3038	677365.6	4509882.5	677375.0	4509858.2	677351.7	4509918.2	677365.4	4509882.9
3039	677394.2	4509891.6	677402.8	4509869.5	677379.3	4509929.8	677392.6	4509895.8
3040	677422.8	4509900.9	677430.4	4509881.4	677407.3	4509940.6	677419.9	4509908.3
3041	677451.8	4509909.1	677458.4	4509892.3	677435.0	4509952.1	677447.2	4509921.0
3042	677481.3	4509916.0	677486.0	4509904.1	677462.2	4509965.1	677474.4	4509933.8
3043	677509.0	4509927.6	677513.1	4509917.1	677490.1	4509976.0	677501.6	4509946.7
3044	677537.2	4509937.9	677540.7	4509928.8	677518.2	4509986.5	677528.7	4509959.8
3045	677566.1	4509946.3	677568.7	4509939.7	677545.7	4509998.6	677555.7	4509973.0
3046	677594.0	4509957.4	677595.8	4509952.7	677573.3	4510010.4	677582.8	4509986.0
3047	677621.3	4509969.9	677623.4	4509964.5	677601.1	4510021.7	677610.3	4509998.1
3048	677648.2	4509983.5	677650.7	4509977.1	677628.8	4510033.2	677638.1	4510009.3
3049	677675.0	4509997.4	677677.9	4509989.9	677656.5	4510044.8	677665.9	4510020.7
3050	677701.7	4510011.5	677704.9	4510003.2	677684.9	4510054.6	677693.7	4510031.9
3051	677728.4	4510025.6	677732.4	4510015.4	677713.8	4510063.1	677721.9	4510042.2
3052	677755.4	4510039.0	677759.5	4510028.3	677742.7	4510071.4	677750.5	4510051.5
3053	677782.3	4510052.5	677787.7	4510038.6	677771.5	4510080.1	677779.3	4510060.3
3054	677809.3	4510065.8	677816.1	4510048.4	677800.5	4510088.4	677808.7	4510067.4
3055	677836.3	4510079.2	677845.1	4510056.5	677829.3	4510097.0	677838.3	4510074.1
3056	677863.4	4510092.3	677873.9	4510065.3	677857.9	4510106.4	677867.6	4510081.4
3057	677891.3	4510103.3	677902.4	4510074.9	677886.4	4510115.7	677896.5	4510089.9
3058	677919.1	4510114.6	677930.3	4510085.8	677914.1	4510127.4	677924.9	4510099.8
3059	677946.9	4510125.9	677958.4	4510096.5	677941.6	4510139.5	677952.7	4510110.9
3060	677975.0	4510136.3	677986.7	4510106.3	677968.9	4510152.0	677980.1	4510123.3
3061	678001.7	4510150.4	678015.0	4510116.3	677996.5	4510163.9	678007.5	4510135.7
3062	678028.3	4510164.8	678042.5	4510128.4	678024.5	4510174.7	678034.7	4510148.5
3063	678055.5	4510177.5	678070.7	4510138.6	678052.5	4510185.4	678061.7	4510161.9
3064	678082.6	4510190.6	678098.6	4510149.8	678080.8	4510195.5	678088.7	4510175.2
3065	678109.9	4510203.4	678126.1	4510161.7	678108.9	4510205.9	678115.1	4510190.0
3066	678138.0	4510213.8	678153.1	4510175.2	678136.3	4510218.1	678140.9	4510206.5
3067	678166.0	4510224.6	678180.6	4510187.1	678163.5	4510230.9	678167.9	4510219.7
3068	678194.5	4510234.1	678207.6	4510200.4	678190.7	4510243.8	678194.8	4510233.3
3069	678223.0	4510243.5	678234.9	4510212.9	678217.8	4510256.9	678222.1	4510245.9
3070	678250.0	4510256.9	678261.4	4510227.6	678244.9	4510270.1	678250.1	4510256.6
3071	678276.7	4510271.1	678289.2	4510239.0	678272.0	4510282.9	678277.6	4510268.6
3072	678303.0	4510286.1	678315.8	4510253.4	678299.4	4510295.4	678305.2	4510280.6
3073	678330.3	4510298.6	678343.3	4510265.5	678326.6	4510308.3	678332.1	4510294.0
3074	678358.3	4510309.5	678370.6	4510277.9	678353.9	4510320.8	678359.1	4510307.4

Table A-1. High-Water Shoreline Position Change – Rockaway Inlet to Moriches Inlet, New York

	High-Water Shoreline Position Change Rate (m/yr)					
	1873/88 to			1933/34 to		1983 to
Transect #	1933/34	1983	1991/97	1983	1991/97	1991/97
3075	0.6	-0.1	0.0	-0.9	-0.5	1.1
3076	0.6	-0.1	0.0	-1.0	-0.6	1.0
3077	0.7	-0.1	0.0	-1.0	-0.7	0.9
3078	0.7	-0.1	-0.0	-1.0	-0.7	0.7
3079	0.6	-0.1	-0.0	-1.0	-0.7	0.6
3080	0.6	-0.1	-0.1	-1.0	-0.7	0.4
3081	0.6	-0.1	-0.1	-1.0	-0.7	0.3
3082	0.6	-0.2	-0.1	-1.0	-0.8	0.3
3083	0.6	-0.2	-0.1	-1.0	-0.8	0.2
3084	0.6	-0.2	-0.1	-1.0	-0.8	0.1
3085	0.6	-0.2	-0.2	-1.1	-0.9	-0.0
3086	0.5	-0.2	-0.2	-1.1	-0.9	-0.1
3087	0.5	-0.2	-0.2	-1.1	-0.9	-0.1
3088	0.5	-0.2	-0.2	-1.1	-0.9	-0.1
3089	0.4	-0.3	-0.3	-1.2	-1.0	-0.1
3090	0.3	-0.4	-0.3	-1.2	-1.0	-0.1
3091	0.2	-0.4	-0.4	-1.2	-1.0	0.1
3092	0.2	-0.5	-0.4	-1.3	-1.0	0.3
3093	0.3	-0.5	-0.4	-1.3	-1.0	0.5
3094	0.3	-0.5	-0.4	-1.4	-0.9	0.8
3095	0.3	-0.5	-0.3	-1.5	-0.9	1.3
3096	0.3	-0.5	-0.3	-1.5	-0.9	1.8
3097	0.3	-0.5	-0.3	-1.6	-0.8	2.4
3098	0.3	-0.5	-0.2	-1.6	-0.7	2.7
3099	0.4	-0.5	-0.2	-1.6	-0.7	3.1
3100	0.4	-0.6	-0.2	-1.7	-0.7	3.5
3101	0.4	-0.6	-0.2	-1.8	-0.7	3.9
3102	0.4	-0.7	-0.1	-1.9	-0.7	4.4
3103	0.4	-0.7	-0.2	-2.1	-0.7	4.9
3104	0.4	-0.7	-0.2	-2.1	-0.7	5.1
3105	0.4	-0.8	-0.2	-2.2	-0.7	5.0
3106	0.5	-0.7	-0.1	-2.2	-0.8	5.1
3107	0.5	-0.7	-0.2	-2.2	-0.8	5.2
3108	0.5	-0.7	-0.1	-2.2	-0.8	5.1
3109	0.6	-0.7	-0.2	-2.3	-0.9	4.9
3110	0.6	-0.7	-0.2	-2.3	-0.9	4.6
3111	0.7	-0.6	-0.1	-2.2	-1.0	4.1
3112	0.7	-0.6	-0.2	-2.1	-1.0	3.5
3113	0.7	-0.5	-0.2	-1.9	-1.0	2.7
3114	0.7	-0.4	-0.2	-1.8	-1.0	2.0
3115	0.6	-0.4	-0.2	-1.6	-1.0	1.3
3116	0.5	-0.4	-0.3	-1.4	-1.0	0.5
3117	0.5	-0.3	-0.3	-1.2	-1.0	-0.3
3118	0.5	-0.2	-0.3	-1.0	-1.0	-1.0
3119	0.5	-0.1	-0.2	-0.7	-0.9	-1.6
3120	0.4	-0.0	-0.2	-0.5	-0.8	-2.1
3121	0.2	0.0	-0.2	-0.3	-0.7	-2.5
3122	0.1	0.1	-0.2	-0.0	-0.6	-2.9
3123	0.2	0.1	-0.2	0.1	-0.6	-3.2
3124	0.1	0.1	-0.2	0.1	-0.6	-3.4
3125	0.1	0.1	-0.3	0.2	-0.6	-3.6
3126	0.0	0.1	-0.3	0.2	-0.5	-3.7
3127	0.1	0.1	-0.3	0.2	-0.5	-3.6

	High-Water Shoreline Position (UTM Zone 18, NAD 1983)							
	1873/88		1933/34		1983		1991/97	
Transect #	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)
3075	678385.9	4510321.4	678397.8	4510290.6	678381.4	4510332.8	678386.3	4510320.3
3076	678412.3	4510336.3	678425.4	4510302.7	678408.5	4510345.9	678412.7	4510335.0
3077	678439.0	4510350.2	678453.6	4510312.8	678435.3	4510359.7	678439.2	4510349.7
3078	678466.3	4510362.9	678480.5	4510326.3	678462.6	4510372.3	678465.8	4510364.0
3079	678494.1	4510374.0	678507.8	4510339.0	678490.0	4510384.7	678492.5	4510378.3
3080	678521.7	4510386.0	678534.9	4510351.9	678517.1	4510397.6	678518.9	4510393.1
3081	678549.5	4510397.2	678562.0	4510365.1	678544.3	4510410.4	678545.8	4510406.7
3082	678578.1	4510406.3	678589.9	4510376.1	678571.7	4510422.7	678573.0	4510419.5
3083	678605.2	4510419.4	678617.0	4510389.3	678599.0	4510435.3	678600.1	4510432.7
3084	678632.1	4510433.0	678644.2	4510402.0	678626.1	4510448.5	678626.7	4510447.0
3085	678659.9	4510444.5	678671.8	4510413.8	678653.2	4510461.7	678653.0	4510462.0
3086	678688.2	4510454.5	678699.4	4510425.8	678679.9	4510475.8	678679.3	4510477.1
3087	678715.6	4510466.7	678726.8	4510437.9	678707.0	4510488.7	678706.5	4510490.1
3088	678743.1	4510478.8	678753.8	4510451.2	678733.7	4510502.8	678733.1	4510504.4
3089	678771.6	4510488.2	678780.9	4510464.5	678760.4	4510517.0	678759.8	4510518.5
3090	678801.8	4510493.4	678807.9	4510477.6	678787.5	4510530.0	678786.9	4510531.5
3091	678831.6	4510499.5	678836.0	4510488.2	678814.3	4510544.0	678814.6	4510543.0
3092	678859.0	4510511.9	678863.9	4510499.4	678841.0	4510557.9	678842.4	4510554.3
3093	678886.0	4510525.3	678891.3	4510511.5	678867.8	4510571.9	678869.9	4510566.5
3094	678913.3	4510537.6	678918.7	4510524.0	678894.3	4510586.5	678897.8	4510577.5
3095	678941.0	4510549.3	678946.3	4510535.8	678920.5	4510601.9	678926.1	4510587.6
3096	678967.7	4510563.4	678974.1	4510546.9	678946.9	4510616.8	678954.8	4510596.5
3097	678994.6	4510577.1	679001.7	4510558.8	678973.5	4510631.1	678983.8	4510604.6
3098	679021.0	4510591.7	679028.3	4510573.0	679000.3	4510645.0	679012.2	4510614.4
3099	679048.0	4510605.2	679055.9	4510584.9	679027.1	4510658.8	679040.5	4510624.3
3100	679075.8	4510616.5	679083.4	4510596.9	679053.6	4510673.4	679068.7	4510634.6
3101	679103.3	4510628.6	679111.5	4510607.6	679079.8	4510688.7	679096.9	4510644.9
3102	679131.0	4510640.1	679139.7	4510617.7	679105.6	4510705.2	679124.9	4510655.7
3103	679159.5	4510649.6	679168.0	4510627.6	679131.4	4510721.6	679152.8	4510666.8
3104	679187.1	4510661.2	679195.7	4510639.3	679158.1	4510735.7	679180.2	4510679.0
3105	679214.6	4510673.4	679223.7	4510650.0	679185.4	4510748.4	679207.3	4510692.2
3106	679241.3	4510687.5	679251.9	4510660.4	679212.8	4510760.6	679235.2	4510703.2
3107	679269.1	4510698.8	679279.2	4510672.9	679240.0	4510773.5	679262.7	4510715.3
3108	679296.2	4510712.0	679307.3	4510683.5	679267.6	4510785.3	679289.9	4510728.0
3109	679323.8	4510723.7	679335.7	4510693.1	679295.5	4510796.4	679316.7	4510741.9
3110	679350.1	4510738.9	679363.8	4510703.6	679323.4	4510807.2	679343.3	4510756.3
3111	679375.8	4510755.5	679391.1	4510716.2	679351.9	4510816.7	679369.9	4510770.7
3112	679402.8	4510768.8	679417.8	4510730.2	679381.1	4510824.5	679396.2	4510785.7
3113	679430.4	4510780.7	679445.0	4510743.3	679410.9	4510830.5	679422.8	4510800.0
3114	679458.1	4510792.0	679472.0	4510756.5	679440.7	4510836.7	679449.5	4510814.3
3115	679486.5	4510802.0	679499.0	4510769.8	679470.6	4510842.5	679476.3	4510828.2
3116	679515.1	4510811.0	679525.4	4510784.7	679501.0	4510847.3	679503.3	4510841.3
3117	679542.5	4510823.3	679552.7	4510797.2	679531.7	4510851.1	679530.6	4510854.0
3118	679568.8	4510838.5	679579.1	4510812.0	679562.3	4510855.3	679558.1	4510866.0
3119	679595.4	4510852.9	679605.3	4510827.5	679592.2	4510861.0	679585.4	4510878.6
3120	679622.0	4510867.3	679629.9	4510847.1	679621.5	4510868.5	679612.6	4510891.5
3121	679650.2	4510877.6	679655.1	4510865.0	679650.6	4510876.4	679639.8	4510904.2
3122	679677.6	4510889.9	679680.6	4510882.1	679680.1	4510883.5	679667.3	4510916.2
3123	679704.1	4510904.6	679707.8	4510895.0	679709.0	4510892.0	679695.1	4510927.5
3124	679733.1	4510912.8	679735.3	4510906.9	679737.6	4510901.0	679722.9	4510938.9
3125	679761.9	4510921.4	679763.0	4510918.6	679766.1	4510910.7	679750.4	4510950.8
3126	679789.4	4510933.5	679790.2	4510931.4	679794.3	4510920.9	679778.1	4510962.3
3127	679817.0	4510945.2	679818.0	4510942.7	679821.6	4510933.6	679806.0	4510973.3

Table A-1. High-Water Shoreline Position Change – Rockaway Inlet to Moriches Inlet, New York

High-Water Shoreline Position Change Rate (m/yr)						High-Water Shoreline Position (UTM Zone 18, NAD 1983)								
	1873/88 to			1933/34 to		1873/88		1933/34		1983		1991/97		
Transect #	1933/34	1983	1991/97	1983	1991/97	Transect #	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)
3128	0.1	0.1	-0.2	0.2	-0.5	3128	679844.5	4510957.4	679845.6	4510954.5	679848.7	4510946.5	679833.9	4510984.5
3129	0.1	0.1	-0.2	0.1	-0.5	3129	679872.3	4510968.6	679873.3	4510966.1	679875.7	4510959.8	679862.1	4510994.8
3130	0.1	0.1	-0.2	0.1	-0.5	3130	679899.1	4510982.3	679901.6	4510976.0	679902.5	4510973.6	679890.8	4511003.7
3131	0.2	0.1	-0.2	-0.0	-0.5	3131	679926.2	4510995.6	679929.6	4510986.8	679929.3	4510987.7	679919.2	4511013.3
3132	0.2	0.1	-0.2	-0.1	-0.5	3132	679953.6	4511007.8	679957.9	4510996.9	679955.4	4511003.3	679947.2	4511024.2
3133	0.2	-0.0	-0.2	-0.2	-0.5	3133	679982.5	4511016.3	679986.0	4511007.2	679981.8	4511018.2	679975.2	4511035.0
3134	0.1	-0.1	-0.2	-0.4	-0.5	3134	680012.3	4511022.3	680015.1	4511015.3	680008.5	4511032.1	680003.1	4511046.1
3135	0.1	-0.1	-0.3	-0.5	-0.6	3135	680041.1	4511031.2	680043.7	4511024.4	680035.5	4511045.6	680030.4	4511058.7
3136	0.2	-0.1	-0.2	-0.5	-0.7	3136	680067.0	4511047.3	680072.2	4511034.1	680062.6	4511058.6	680057.1	4511072.8
3137	0.3	-0.1	-0.2	-0.6	-0.7	3137	680093.5	4511061.9	680099.9	4511045.4	680089.6	4511071.8	680083.7	4511087.1
3138	0.4	-0.1	-0.2	-0.7	-0.8	3138	680120.7	4511074.7	680129.0	4511053.6	680116.4	4511085.7	680110.3	4511101.6
3139	0.4	-0.1	-0.3	-0.8	-1.0	3139	680148.8	4511085.3	680157.7	4511062.3	680143.3	4511099.3	680136.7	4511116.4
3140	0.5	-0.1	-0.3	-0.9	-1.0	3140	680175.8	4511098.6	680185.8	4511073.0	680170.4	4511112.4	680163.1	4511131.1
3141	0.5	-0.2	-0.3	-0.9	-1.0	3141	680203.6	4511109.8	680213.2	4511085.4	680197.8	4511124.9	680190.1	4511144.6
3142	0.5	-0.2	-0.3	-0.9	-1.1	3142	680231.5	4511121.0	680241.6	4511094.9	680225.2	4511137.2	680217.2	4511157.6
3143	0.4	-0.2	-0.3	-0.9	-1.1	3143	680259.9	4511130.8	680269.2	4511106.9	680252.7	4511149.0	680244.9	4511169.1
3144	0.4	-0.2	-0.3	-0.9	-1.1	3144	680287.1	4511143.6	680295.8	4511121.1	680280.2	4511161.1	680272.6	4511180.8
3145	0.5	-0.2	-0.3	-0.9	-1.1	3145	680314.2	4511156.7	680323.9	4511131.6	680307.8	4511172.9	680299.8	4511193.4
3146	0.5	-0.2	-0.4	-1.0	-1.2	3146	680342.5	4511166.6	680352.8	4511140.0	680335.8	4511183.9	680327.1	4511206.1
3147	0.5	-0.2	-0.4	-1.0	-1.2	3147	680370.6	4511177.1	680380.8	4511150.9	680363.9	4511194.4	680354.6	4511218.1
3148	0.4	-0.2	-0.4	-0.9	-1.2	3148	680399.7	4511184.9	680408.4	4511162.8	680392.0	4511204.7	680381.5	4511231.6
3149	0.4	-0.2	-0.4	-0.9	-1.2	3149	680427.5	4511196.3	680436.2	4511174.0	680420.2	4511215.0	680409.2	4511243.1
3150	0.4	-0.2	-0.4	-0.9	-1.2	3150	680454.1	4511210.6	680463.4	4511186.7	680448.3	4511225.6	680437.1	4511254.2
3151	0.4	-0.1	-0.4	-0.8	-1.2	3151	680481.2	4511223.8	680490.6	4511199.6	680476.4	4511236.1	680464.4	4511266.8
3152	0.5	-0.1	-0.4	-0.8	-1.2	3152	680508.4	4511236.6	680518.1	4511211.8	680504.6	4511246.3	680491.6	4511279.7
3153	0.5	-0.0	-0.4	-0.6	-1.1	3153	680534.8	4511251.4	680544.6	4511225.9	680533.5	4511254.9	680519.7	4511290.3
3154	0.4	0.0	-0.3	-0.5	-1.1	3154	680562.0	4511264.3	680571.5	4511240.0	680562.2	4511263.7	680547.9	4511300.5
3155	0.4	0.0	-0.3	-0.4	-1.1	3155	680590.2	4511274.7	680598.5	4511253.1	680590.7	4511273.4	680575.3	4511312.8
3156	0.4	0.0	-0.4	-0.4	-1.1	3156	680617.6	4511286.7	680626.2	4511264.9	680618.4	4511284.7	680602.4	4511325.7
3157	0.4	0.0	-0.4	-0.5	-1.1	3157	680645.2	4511298.5	680654.4	4511274.9	680645.3	4511298.3	680629.5	4511338.8
3158	0.3	-0.1	-0.4	-0.5	-1.1	3158	680674.0	4511307.3	680680.9	4511289.7	680671.9	4511312.6	680656.5	4511352.2
3159	0.3	-0.1	-0.4	-0.5	-1.1	3159	680702.5	4511316.9	680707.9	4511303.1	680698.5	4511327.1	680683.7	4511365.0
3160	0.3	-0.1	-0.5	-0.6	-1.1	3160	680730.2	4511328.3	680735.5	4511314.9	680724.9	4511342.0	680710.7	4511378.4
3161	0.3	-0.2	-0.5	-0.7	-1.2	3161	680758.2	4511339.1	680763.5	4511325.5	680751.3	4511356.9	680737.2	4511392.9
3162	0.3	-0.2	-0.5	-0.8	-1.3	3162	680785.2	4511352.5	680790.9	4511337.9	680776.7	4511374.4	680763.2	4511408.9
3163	0.3	-0.3	-0.5	-0.9	-1.3	3163	680812.2	4511365.7	680818.0	4511350.9	680802.1	4511391.7	680789.7	4511423.7
3164	0.3	-0.3	-0.5	-1.0	-1.3	3164	680839.6	4511378.2	680845.5	4511363.0	680828.3	4511407.2	680816.4	4511437.7
3165	0.3	-0.3	-0.6	-1.0	-1.3	3165	680867.4	4511389.5	680872.7	4511375.8	680855.0	4511421.4	680843.4	4511451.0
3166	0.2	-0.3	-0.6	-1.0	-1.3	3166	680895.2	4511400.7	680900.2	4511387.9	680881.8	4511435.1	680870.5	4511464.0
3167	0.4	-0.3	-0.5	-1.1	-1.4	3167	680920.8	4511417.7	680928.6	4511397.6	680908.5	4511449.3	680897.7	4511477.0
3168	0.4	-0.3	-0.5	-1.2	-1.5	3168	680947.2	4511432.6	680956.5	4511408.7	680935.7	4511461.9	680924.0	4511492.0
3169	0.5	-0.3	-0.6	-1.2	-1.5	3169	680974.6	4511444.9	680984.2	4511420.1	680963.4	4511473.6	680950.5	4511506.7
3170	0.5	-0.3	-0.6	-1.2	-1.6	3170	681002.1	4511456.8	681011.9	4511431.7	680991.4	4511484.3	680977.2	4511520.7
3171	0.4	-0.3	-0.6	-1.1	-1.6	3171	681031.5	4511464.2	681039.5	4511443.4	681019.6	4511494.7	681004.5	4511533.3
3172	0.3	-0.4	-0.7	-1.1	-1.6	3172	681061.5	4511469.8	681067.3	4511454.9	681047.2	4511506.4	681031.9	4511545.6
3173	0.2	-0.4	-0.7	-1.2	-1.6	3173	681090.5	4511477.9	681094.9	4511466.6	681074.5	4511518.8	681059.3	4511558.0
3174	0.2	-0.5	-0.8	-1.2	-1.7	3174	681118.9	4511487.6	681123.3	4511476.5	681101.4	4511532.5	681086.1	4511571.8
3175	0.2	-0.5	-0.8	-1.4	-1.8	3175	681147.4	4511497.0	681152.1	4511485.2	681128.1	4511546.6	681113.1	4511585.2
3176	0.2	-0.5	-0.8	-1.5	-1.8	3176	681176.1	4511506.2	681180.8	4511494.1	681154.9	4511560.4	681140.2	4511598.3
3177	0.2	-0.6	-0.9	-1.5	-1.9	3177	681204.7	4511515.4	681209.4	4511503.2	681182.1	4511573.3	681167.4	4511611.1
3178	0.3	-0.6	-0.9	-1.6	-2.0	3178	681231.6	4511529.0	681237.8	4511512.9	681209.3	4511586.2	681194.4	4511624.5
3179	0.4	-0.5	-0.8	-1.7	-2.0	3179	681257.4	4511545.2	681266.2	4511522.7	681236.4	4511599.2	681221.5	4511637.5
3180	0.4	-0.5	-0.8	-1.6	-2.0	3180	681283.4	4511561.2	681292.5	4511537.9	681263.4	4511612.5	681248.8	4511650.1

Table A-1. High-Water Shoreline Position Change – Rockaway Inlet to Moriches Inlet, New York

High-Water Shoreline Position Change Rate (m/yr)							High-Water Shoreline Position (UTM Zone 18, NAD 1983)									
1873/88 to			1933/34 to		1983 to		1873/88		1933/34		1983		1991/97			
Transect #	1933/34	1983	1991/97	1983	1991/97	1991/97	Transect #	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)
3181	0.4	-0.5	-0.8	-1.6	-2.0	-3.2	3181	681310.8	4511573.6	681319.6	4511551.1	681290.4	4511625.9	681276.3	4511662.1
3182	0.4	-0.5	-0.8	-1.7	-2.0	-3.2	3182	681338.2	4511585.9	681347.6	4511561.7	681317.4	4511639.1	681303.5	4511674.9
3183	0.4	-0.6	-0.8	-1.7	-2.0	-2.9	3183	681366.8	4511595.2	681374.9	4511574.3	681344.4	4511652.5	681331.6	4511685.3
3184	0.4	-0.6	-0.8	-1.7	-1.9	-2.7	3184	681394.3	4511607.2	681401.7	4511588.1	681371.5	4511665.6	681360.0	4511695.2
3185	0.5	-0.5	-0.7	-1.7	-1.9	-2.4	3185	681419.7	4511624.6	681429.5	4511599.5	681398.7	4511678.5	681388.4	4511704.8
3186	0.6	-0.5	-0.6	-1.7	-1.8	-2.1	3186	681444.4	4511643.8	681456.6	4511612.6	681426.0	4511691.0	681417.1	4511713.9
3187	0.6	-0.4	-0.5	-1.7	-1.7	-1.6	3187	681469.6	4511661.7	681483.2	4511627.0	681453.4	4511703.3	681446.6	4511720.9
3188	0.6	-0.4	-0.5	-1.7	-1.6	-1.1	3188	681497.7	4511672.2	681510.9	4511638.3	681480.8	4511715.7	681476.1	4511727.8
3189	0.6	-0.5	-0.5	-1.7	-1.5	-0.7	3189	681526.5	4511681.1	681539.1	4511648.6	681508.2	4511727.9	681505.0	4511736.2
3190	0.4	-0.5	-0.5	-1.6	-1.5	-0.7	3190	681556.4	4511687.0	681565.2	4511664.4	681536.0	4511739.1	681532.9	4511747.1
3191	0.3	-0.5	-0.5	-1.5	-1.3	-0.6	3191	681585.0	4511696.3	681590.3	4511682.6	681563.7	4511750.8	681561.2	4511757.1
3192	0.2	-0.5	-0.5	-1.4	-1.2	-0.2	3192	681612.5	4511708.2	681616.1	4511699.0	681591.4	4511762.4	681590.3	4511765.1
3193	0.1	-0.6	-0.5	-1.4	-1.1	0.2	3193	681640.7	4511718.5	681643.7	4511710.7	681618.9	4511774.3	681619.7	4511772.4
3194	0.1	-0.6	-0.5	-1.5	-1.1	0.6	3194	681669.5	4511727.3	681672.5	4511719.5	681646.1	4511787.1	681648.8	4511780.3
3195	0.2	-0.6	-0.5	-1.6	-1.1	0.9	3195	681697.2	4511738.8	681700.6	4511730.1	681672.8	4511801.2	681676.9	4511790.8
3196	0.1	-0.6	-0.5	-1.5	-1.0	1.1	3196	681724.1	4511752.4	681727.1	4511744.5	681699.7	4511815.0	681704.5	4511802.5
3197	0.2	-0.6	-0.4	-1.6	-1.0	1.3	3197	681750.3	4511767.8	681754.6	4511756.7	681726.5	4511828.8	681732.1	4511814.4
3198	0.3	-0.6	-0.4	-1.6	-1.1	1.3	3198	681776.0	4511784.3	681782.1	4511768.6	681753.3	4511842.7	681759.0	4511828.0
3199	0.4	-0.5	-0.3	-1.6	-1.0	1.4	3199	681800.6	4511804.0	681808.9	4511782.7	681779.9	4511856.9	681786.0	4511841.4
3200	0.4	-0.5	-0.3	-1.6	-1.0	1.3	3200	681825.6	4511822.3	681835.0	4511798.1	681806.9	4511870.4	681812.6	4511855.6
3201	0.5	-0.5	-0.3	-1.6	-1.1	1.1	3201	681852.9	4511834.8	681863.2	4511808.4	681833.9	4511883.5	681838.8	4511871.1
3202	0.5	-0.5	-0.4	-1.7	-1.2	0.9	3202	681881.5	4511844.0	681891.1	4511819.4	681860.9	4511897.0	681864.8	4511887.0
3203	0.6	-0.5	-0.4	-1.8	-1.3	0.8	3203	681907.6	4511859.7	681919.6	4511829.0	681888.1	4511909.7	681891.4	4511901.4
3204	0.6	-0.5	-0.4	-1.8	-1.3	0.6	3204	681934.5	4511873.5	681947.0	4511841.2	681915.5	4511922.0	681918.2	4511915.2
3205	0.6	-0.5	-0.4	-1.8	-1.3	0.5	3205	681962.8	4511883.3	681974.6	4511853.1	681942.9	4511934.4	681945.2	4511928.5
3206	0.5	-0.5	-0.4	-1.8	-1.3	0.5	3206	681991.6	4511892.1	682001.7	4511866.2	681970.3	4511946.7	681972.5	4511941.0
3207	0.4	-0.6	-0.5	-1.8	-1.3	0.5	3207	682021.4	4511898.3	682029.0	4511878.9	681997.7	4511959.0	681999.9	4511953.5
3208	0.3	-0.7	-0.6	-1.8	-1.4	0.5	3208	682051.2	4511904.4	682056.9	4511889.7	682025.0	4511971.7	682027.0	4511966.4
3209	0.2	-0.7	-0.6	-1.8	-1.3	0.6	3209	682080.1	4511912.9	682084.4	4511901.9	682052.2	4511984.4	682054.7	4511978.0
3210	0.2	-0.7	-0.6	-1.8	-1.3	0.7	3210	682108.1	4511923.7	682112.0	4511913.8	682079.9	4511995.9	682082.8	4511988.6
3211	0.1	-0.8	-0.6	-1.8	-1.3	0.6	3211	682137.2	4511931.5	682139.6	4511925.5	682107.8	4512007.0	682110.4	4512000.3
3212	0.0	-0.8	-0.7	-1.8	-1.4	0.4	3212	682166.9	4511938.0	682167.2	4511937.3	682135.4	4512018.7	682137.2	4512014.1
3213	-0.0	-0.8	-0.7	-1.8	-1.3	0.4	3213	682194.9	4511948.8	682194.4	4511950.2	682162.9	4512030.9	682164.8	4512026.0
3214	-0.1	-0.8	-0.7	-1.7	-1.3	0.3	3214	682222.6	4511960.3	682221.1	4511964.0	682190.4	4512042.8	682191.7	4512039.5
3215	-0.1	-0.8	-0.7	-1.7	-1.4	0.1	3215	682250.4	4511971.6	682248.6	4511976.1	682218.0	4512054.7	682218.6	4512053.2
3216	-0.1	-0.8	-0.8	-1.7	-1.4	0.0	3216	682278.4	4511982.3	682276.1	4511988.2	682245.6	4512066.6	682245.7	4512066.3
3217	-0.1	-0.8	-0.8	-1.7	-1.4	-0.2	3217	682306.6	4511992.6	682303.7	4512000.0	682273.6	4512077.3	682272.9	4512079.1
3218	-0.2	-0.9	-0.8	-1.7	-1.4	-0.2	3218	682335.3	4512001.7	682331.2	4512012.0	682301.8	4512087.6	682300.8	4512090.1
3219	-0.2	-0.8	-0.8	-1.6	-1.4	-0.4	3219	682362.7	4512013.9	682358.7	4512024.3	682330.5	4512096.5	682328.7	4512101.2
3220	-0.2	-0.8	-0.8	-1.5	-1.4	-0.8	3220	682389.8	4512027.0	682386.2	4512036.2	682359.5	4512104.7	682356.0	4512113.7
3221	-0.2	-0.7	-0.8	-1.4	-1.4	-1.4	3221	682417.6	4512036.3	682413.3	4512049.4	682388.7	4512112.4	682382.8	4512127.6
3222	-0.3	-0.7	-0.9	-1.3	-1.4	-2.0	3222	682446.3	4512047.3	682440.1	4512063.1	682417.7	4512120.6	682409.1	4512142.6
3223	-0.3	-0.7	-0.9	-1.2	-1.5	-2.4	3223	682475.0	4512056.3	682468.0	4512074.2	682446.4	4512129.5	682436.0	4512156.3
3224	-0.3	-0.7	-0.9	-1.1	-1.5	-2.8	3224	682501.8	4512070.1	682495.1	4512087.2	682475.0	4512138.9	682463.0	4512169.7
3225	-0.3	-0.7	-0.9	-1.1	-1.5	-3.2	3225	682529.5	4512081.6	682522.7	4512099.0	682503.4	4512148.5	682489.5	4512184.2
3226	-0.3	-0.6	-0.9	-1.1	-1.6	-3.6	3226	682556.9	4512093.8	682550.5	4512110.4	682531.8	4512158.2	682516.2	4512198.4
3227	-0.3	-0.6	-0.9	-1.0	-1.6	-3.9	3227	682583.8	4512107.5	682577.8	4512122.9	682560.0	4512168.5	682542.9	4512212.4
3228	-0.3	-0.6	-1.0	-1.0	-1.6	-4.3	3228	682611.6	4512118.9	682605.7	4512133.9	682588.4	4512178.4	682569.8	4512226.0
3229	-0.3	-0.6	-1.0	-0.9	-1.6	-4.6	3229	682639.4	4512130.2	682632.5	4512147.9	682616.9	4512187.9	682596.9	4512239.1
3230	-0.3	-0.5	-1.0	-0.9	-1.7	-4.9	3230	682666.0	4512144.3	682660.7	4512158.1	682645.3	4512197.6	682623.9	4512252.3
3231	-0.2	-0.5	-1.0	-0.9	-1.7	-5.3	3231	682692.8	4512158.4	682688.9	4512168.4	682673.6	4512207.4	682650.7	4512266.2
3232	-0.1	-0.4	-1.0	-0.8	-1.8	-5.6	3232	682718.9	4512173.9	682716.8	4512179.5	682701.7	4512218.0	682677.3	4512280.6
3233	-0.1	-0.4	-1.0	-0.8	-1.8	-5.8	3233	682745.4	4512188.5	682744.0	4512192.1	682729.3	4512229.8	682703.9	4512294.9

Table A-1. High-Water Shoreline Position Change – Rockaway Inlet to Moriches Inlet, New York

	High-Water Shoreline Position Change Rate (m/yr)					
	1873/88 to			1933/34 to		1983 to
Transect #	1933/34	1983	1991/97	1983	1991/97	1991/97
3234	-0.1	-0.4	-1.0	-0.8	-1.8	-5.9
3235	0.0	-0.4	-0.9	-0.9	-1.9	-5.9
3236	0.1	-0.4	-0.9	-1.0	-1.9	-6.0
3237	0.2	-0.4	-0.9	-1.0	-2.0	-6.0
3238	0.2	-0.4	-0.9	-1.0	-2.0	-6.0
3239	0.2	-0.4	-0.9	-1.0	-2.0	-6.1
3240	0.2	-0.4	-1.0	-1.1	-2.1	-6.2
3241	0.2	-0.4	-1.0	-1.1	-2.1	-6.3
3242	0.1	-0.4	-1.0	-1.1	-2.1	-6.2
3243	0.2	-0.4	-1.0	-1.1	-2.1	-6.1
3244	0.2	-0.4	-1.0	-1.2	-2.1	-5.9
3245	0.2	-0.4	-1.0	-1.2	-2.1	-5.6
3246	0.2	-0.4	-0.9	-1.2	-2.0	-5.2
3247	0.3	-0.4	-0.9	-1.3	-2.0	-4.7
3248	0.3	-0.4	-0.8	-1.3	-1.9	-4.2
3249	0.3	-0.4	-0.8	-1.4	-1.8	-3.6
3250	0.3	-0.5	-0.7	-1.4	-1.7	-3.1
3251	0.2	-0.5	-0.7	-1.4	-1.6	-2.7
3252	0.2	-0.5	-0.7	-1.4	-1.6	-2.5
3253	0.2	-0.5	-0.7	-1.4	-1.6	-2.3
3254	0.2	-0.6	-0.7	-1.4	-1.6	-2.4
3255	0.2	-0.6	-0.8	-1.5	-1.7	-2.4
3256	0.1	-0.6	-0.8	-1.6	-1.8	-2.5
3257	0.2	-0.7	-0.8	-1.6	-1.8	-2.4
3258	0.1	-0.7	-0.9	-1.7	-1.8	-2.4
3259	0.0	-0.7	-0.9	-1.7	-1.8	-2.3
3260	0.0	-0.8	-0.9	-1.7	-1.8	-2.3
3261	-0.1	-0.8	-1.0	-1.7	-1.8	-2.3
3262	-0.0	-0.8	-1.0	-1.8	-1.9	-2.2
3263	-0.0	-0.8	-1.0	-1.8	-1.9	-2.3
3264	-0.1	-0.9	-1.0	-1.8	-1.9	-2.3
3265	-0.1	-0.9	-1.0	-1.8	-1.9	-2.3
3266	0.0	-0.9	-1.0	-1.9	-2.0	-2.3
3267	0.1	-0.9	-1.0	-2.0	-2.1	-2.3
3268	-0.1	-0.9	-1.1	-2.0	-2.1	-2.4
3269	-0.1	-0.9	-1.1	-1.9	-2.1	-2.8
3270	0.0	-0.9	-1.1	-2.0	-2.2	-3.0
3271	0.1	-0.9	-1.1	-2.0	-2.2	-3.1
3272	0.1	-0.9	-1.1	-2.0	-2.3	-3.4
3273	0.2	-0.8	-1.1	-2.1	-2.4	-3.6
3274	0.3	-0.8	-1.1	-2.2	-2.5	-3.7
3275	0.3	-0.8	-1.1	-2.2	-2.5	-3.9
3276	0.3	-0.8	-1.2	-2.2	-2.6	-4.1
3277	0.3	-0.8	-1.2	-2.3	-2.7	-4.3
3278	0.3	-0.9	-1.2	-2.3	-2.7	-4.3
3279	0.3	-0.9	-1.2	-2.4	-2.7	-4.1
3280	0.3	-0.9	-1.2	-2.4	-2.7	-3.9
3281	0.2	-1.0	-1.2	-2.4	-2.7	-3.8
3282	0.2	-1.0	-1.2	-2.4	-2.7	-3.6
3283	0.2	-1.0	-1.2	-2.4	-2.7	-3.6
3284	0.2	-1.0	-1.3	-2.5	-2.7	-3.4
3285	0.1	-1.1	-1.3	-2.5	-2.6	-3.2
3286	0.1	-1.1	-1.3	-2.5	-2.6	-2.9

	High-Water Shoreline Position (UTM Zone 18, NAD 1983)							
	1873/88		1933/34		1983		1991/97	
Transect #	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)
3234	682772.3	4512202.3	682771.1	4512205.3	682756.9	4512241.7	682731.0	4512308.2
3235	682798.6	4512217.2	682799.3	4512215.5	682784.2	4512254.2	682758.4	4512320.5
3236	682825.6	4512230.6	682828.3	4512223.8	682811.5	4512266.9	682785.4	4512333.6
3237	682852.2	4512245.0	682856.0	4512235.3	682838.4	4512280.3	682812.1	4512347.8
3238	682879.1	4512258.6	682883.1	4512248.2	682865.4	4512293.7	682839.1	4512361.2
3239	682906.3	4512271.3	682911.2	4512259.0	682892.8	4512306.0	682866.0	4512374.6
3240	682934.2	4512282.5	682939.1	4512269.8	682920.1	4512318.7	682892.9	4512388.3
3241	682962.4	4512292.7	682966.0	4512283.4	682946.9	4512332.4	682919.7	4512402.2
3242	682990.0	4512304.4	682993.0	4512296.7	682974.0	4512345.5	682947.0	4512414.8
3243	683017.3	4512316.9	683021.0	4512307.7	683001.0	4512358.9	682974.5	4512426.7
3244	683044.8	4512329.2	683048.7	4512319.2	683027.9	4512372.4	683002.3	4512438.1
3245	683072.4	4512341.0	683076.3	4512330.9	683055.0	4512385.5	683030.6	4512448.2
3246	683099.1	4512355.0	683104.2	4512341.9	683082.4	4512397.8	683059.5	4512456.5
3247	683126.3	4512367.8	683132.8	4512351.1	683109.9	4512409.9	683089.3	4512462.8
3248	683153.9	4512379.7	683160.6	4512362.3	683137.5	4512421.8	683119.2	4512468.7
3249	683181.6	4512391.2	683188.4	4512373.6	683164.2	4512435.7	683148.8	4512475.4
3250	683208.9	4512403.7	683215.6	4512386.5	683190.8	4512450.1	683177.4	4512484.5
3251	683237.0	4512414.2	683241.7	4512402.2	683217.4	4512464.4	683205.6	4512494.8
3252	683264.9	4512425.3	683269.3	4512414.1	683244.4	4512478.0	683233.7	4512505.4
3253	683292.5	4512437.1	683296.7	4512426.3	683271.3	4512491.3	683261.4	4512516.9
3254	683319.9	4512449.3	683324.2	4512438.5	683298.5	4512504.2	683288.3	4512530.5
3255	683348.1	4512459.6	683352.0	4512449.5	683325.6	4512517.3	683315.0	4512544.6
3256	683377.4	4512467.1	683380.3	4512459.6	683352.6	4512530.8	683341.6	4512558.8
3257	683405.3	4512478.1	683408.4	4512470.1	683379.2	4512545.0	683368.6	4512572.2
3258	683433.6	4512488.2	683435.7	4512482.7	683406.0	4512559.0	683395.6	4512585.5
3259	683462.1	4512497.7	683462.9	4512495.6	683433.0	4512572.2	683422.8	4512598.4
3260	683490.5	4512507.4	683490.7	4512506.9	683459.9	4512585.8	683449.9	4512611.5
3261	683518.9	4512517.1	683517.7	4512520.2	683487.1	4512598.6	683477.1	4512624.2
3262	683546.3	4512529.4	683545.8	4512530.7	683514.3	4512611.5	683504.5	4512636.5
3263	683574.1	4512540.8	683573.4	4512542.5	683541.8	4512623.6	683531.9	4512648.8
3264	683602.6	4512550.1	683600.5	4512555.6	683569.3	4512635.7	683559.1	4512661.8
3265	683630.3	4512561.7	683629.1	4512564.9	683596.2	4512649.1	683586.3	4512674.7
3266	683657.2	4512575.3	683657.7	4512574.1	683623.3	4512662.3	683613.3	4512687.9
3267	683684.3	4512588.4	683686.0	4512584.0	683650.3	4512675.7	683640.4	4512701.0
3268	683713.8	4512595.3	683712.8	4512597.8	683678.0	4512687.1	683667.4	4512714.3
3269	683741.5	4512606.8	683739.9	4512610.9	683706.1	4512697.6	683694.1	4512728.5
3270	683768.4	4512620.5	683768.8	4512619.4	683733.9	4512708.9	683721.0	4512742.0
3271	683795.9	4512632.5	683797.7	4512627.8	683761.7	4512720.2	683748.1	4512755.0
3272	683823.1	4512645.4	683825.7	4512638.6	683789.3	4512732.0	683774.7	4512769.4
3273	683849.8	4512659.3	683854.7	4512646.9	683816.8	4512744.1	683801.3	4512783.9
3274	683876.6	4512673.4	683882.6	4512657.9	683844.0	4512756.9	683827.8	4512798.6
3275	683903.6	4512686.6	683910.1	4512669.8	683871.2	4512769.8	683854.2	4512813.4
3276	683931.5	4512697.5	683938.4	4512680.0	683898.6	4512781.9	683880.6	4512828.2
3277	683959.4	4512708.7	683966.4	4512690.6	683926.3	4512793.4	683907.7	4512841.4
3278	683987.4	4512719.5	683994.6	4512700.9	683953.8	4512805.6	683935.2	4512853.4
3279	684016.2	4512728.1	684022.9	4512711.0	683980.8	4512819.0	683962.9	4512865.0
3280	684044.8	4512737.5	684050.9	4512721.8	684008.1	4512831.6	683991.0	4512875.4
3281	684073.1	4512747.3	684078.2	4512734.3	684035.4	4512844.1	684019.1	4512886.0
3282	684101.1	4512758.1	684105.7	4512746.4	684062.7	4512856.6	684046.9	4512897.1
3283	684128.3	4512771.0	684133.2	4512758.3	684089.9	4512869.4	684074.4	4512909.1
3284	684156.3	4512781.7	684160.7	4512770.4	684116.9	4512882.7	684102.0	4512921.0
3285	684184.7	4512791.6	684187.2	4512785.0	684143.7	4512896.7	684129.8	4512932.4
3286	684213.4	4512800.6	684214.6	4512797.4	684170.3	4512911.1	684157.6	4512943.6

Table A-1. High-Water Shoreline Position Change – Rockaway Inlet to Moriches Inlet, New York

High-Water Shoreline Position Change Rate (m/yr)							High-Water Shoreline Position (UTM Zone 18, NAD 1983)									
1873/88 to			1933/34 to		1983 to		1873/88		1933/34		1983		1991/97			
Transect #	1933/34	1983	1991/97	1983	1991/97	1991/97	Transect #	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)
3287	0.0	-1.2	-1.3	-2.6	-2.6	-2.6	3287	684242.0	4512809.6	684242.9	4512807.5	684196.4	4512926.6	684185.3	4512955.3
3288	0.0	-1.2	-1.3	-2.7	-2.6	-2.2	3288	684269.6	4512821.5	684270.4	4512819.4	684222.4	4512942.6	684212.8	4512967.3
3289	0.1	-1.2	-1.3	-2.8	-2.7	-1.9	3289	684297.3	4512833.0	684299.0	4512828.6	684248.5	4512958.2	684240.3	4512979.1
3290	0.1	-1.3	-1.3	-2.9	-2.7	-1.6	3290	684324.8	4512845.1	684326.8	4512839.9	684274.6	4512973.9	684267.8	4512991.4
3291	0.1	-1.3	-1.3	-3.0	-2.7	-1.4	3291	684352.7	4512856.0	684354.4	4512851.7	684301.0	4512988.7	684295.0	4513004.2
3292	0.1	-1.4	-1.3	-3.1	-2.7	-1.2	3292	684380.6	4512867.0	684382.0	4512863.6	684327.6	4513003.0	684322.2	4513016.8
3293	-0.0	-1.4	-1.4	-3.1	-2.7	-1.3	3293	684409.0	4512876.8	684408.9	4512877.3	684354.6	4513016.4	684348.9	4513031.1
3294	-0.1	-1.4	-1.4	-3.1	-2.7	-1.4	3294	684437.4	4512886.7	684436.0	4512890.2	684381.6	4513029.8	684375.6	4513045.1
3295	-0.1	-1.5	-1.5	-3.1	-2.8	-1.4	3295	684466.5	4512894.7	684463.7	4512901.8	684408.6	4513043.2	684402.6	4513058.6
3296	-0.2	-1.5	-1.5	-3.1	-2.8	-1.4	3296	684495.2	4512903.5	684491.2	4512913.9	684435.6	4513056.3	684429.6	4513071.9
3297	-0.3	-1.5	-1.5	-3.1	-2.7	-1.3	3297	684522.7	4512915.5	684517.5	4512929.1	684462.8	4513069.2	684457.2	4513083.7
3298	-0.3	-1.5	-1.5	-3.0	-2.6	-1.1	3298	684549.9	4512928.5	684543.5	4512945.0	684490.2	4513081.6	684485.2	4513094.4
3299	-0.4	-1.5	-1.5	-2.9	-2.5	-0.9	3299	684577.5	4512940.2	684569.6	4512960.6	684517.4	4513094.4	684513.3	4513104.8
3300	-0.4	-1.5	-1.5	-2.9	-2.5	-0.8	3300	684604.7	4512953.1	684596.3	4512974.6	684544.7	4513106.9	684541.1	4513116.3
3301	-0.4	-1.5	-1.5	-2.9	-2.5	-0.8	3301	684631.7	4512966.4	684624.1	4512965.9	684572.1	4513119.2	684568.5	4513128.4
3302	-0.3	-1.5	-1.5	-2.9	-2.5	-0.9	3302	684658.6	4512979.9	684651.7	4512987.6	684599.6	4513131.3	684595.6	4513141.5
3303	-0.3	-1.5	-1.4	-2.9	-2.6	-1.1	3303	684685.4	4512993.8	684679.2	4513009.8	684627.2	4513143.2	684622.6	4513154.9
3304	-0.3	-1.5	-1.5	-2.9	-2.6	-1.1	3304	684712.9	4513006.0	684706.9	4513021.3	684654.5	4513155.6	684649.7	4513168.1
3305	-0.3	-1.5	-1.5	-3.0	-2.6	-1.0	3305	684740.1	4513018.7	684734.6	4513032.8	684681.4	4513169.4	684677.0	4513180.7
3306	-0.2	-1.5	-1.4	-3.0	-2.6	-1.0	3306	684767.1	4513032.2	684762.1	4513045.0	684709.0	4513181.0	684704.6	4513192.4
3307	-0.2	-1.5	-1.4	-3.1	-2.6	-0.8	3307	684794.5	4513044.4	684791.0	4513053.3	684736.6	4513192.8	684733.0	4513202.0
3308	-0.2	-1.5	-1.4	-3.1	-2.5	-0.4	3308	684822.3	4513055.5	684818.4	4513065.7	684764.0	4513205.3	684762.4	4513209.3
3309	-0.2	-1.5	-1.3	-3.0	-2.4	-0.1	3309	684849.3	4513069.1	684844.7	4513080.7	684791.6	4513217.0	684791.4	4513217.5
3310	-0.2	-1.5	-1.3	-3.0	-2.4	0.1	3310	684876.6	4513081.5	684872.6	4513091.9	684819.4	4513228.4	684819.7	4513227.6
3311	-0.1	-1.5	-1.3	-3.1	-2.4	0.2	3311	684903.9	4513094.1	684901.6	4513100.0	684846.9	4513240.4	684847.5	4513238.7
3312	-0.1	-1.5	-1.3	-3.2	-2.5	0.5	3312	684931.8	4513105.2	684930.5	4513108.5	684873.5	4513254.6	684875.5	4513249.5
3313	-0.1	-1.5	-1.3	-3.3	-2.5	0.7	3313	684959.8	4513115.9	684958.5	4513119.4	684900.6	4513267.8	684903.5	4513260.2
3314	-0.2	-1.6	-1.3	-3.2	-2.4	0.9	3314	684988.7	4513124.3	684985.3	4513133.2	684927.8	4513280.6	684931.8	4513270.4
3315	-0.2	-1.6	-1.3	-3.2	-2.4	0.9	3315	685016.5	4513135.6	685012.2	4513146.7	684954.8	4513294.0	684958.5	4513284.4
3316	-0.2	-1.6	-1.3	-3.2	-2.3	1.3	3316	685043.2	4513149.7	685038.2	4513162.7	684981.6	4513307.8	684987.0	4513293.8
3317	-0.3	-1.6	-1.2	-3.2	-2.1	2.1	3317	685070.2	4513163.2	685064.6	4513177.5	685008.2	4513322.1	685017.2	4513299.1
3318	-0.3	-1.6	-1.1	-3.2	-2.0	2.8	3318	685097.2	4513176.4	685091.9	4513189.9	685035.3	4513335.2	685047.6	4513303.6
3319	-0.1	-1.5	-1.1	-3.2	-2.0	3.3	3319	685123.1	4513192.7	685120.3	4513199.8	685062.6	4513347.9	685076.9	4513311.2
3320	-0.0	-1.5	-1.0	-3.3	-2.0	3.4	3320	685149.5	4513207.4	685149.2	4513208.2	685090.6	4513358.5	685105.4	4513320.7
3321	0.2	-1.5	-1.0	-3.4	-2.1	3.2	3321	685176.5	4513220.7	685179.7	4513212.5	685118.8	4513368.8	685132.9	4513332.7
3322	0.3	-1.5	-1.0	-3.5	-2.2	3.0	3322	685204.6	4513231.5	685210.1	4513217.2	685147.2	4513378.6	685160.4	4513344.6
3323	0.3	-1.5	-1.0	-3.6	-2.4	2.8	3323	685232.8	4513241.6	685239.8	4513223.5	685175.8	4513387.8	685187.8	4513356.9
3324	0.4	-1.4	-1.1	-3.6	-2.4	2.4	3324	685261.0	4513251.7	685268.6	4513232.2	685204.7	4513396.3	685215.2	4513369.4
3325	0.3	-1.4	-1.1	-3.5	-2.4	2.1	3325	685289.1	4513262.3	685295.4	4513246.2	685234.0	4513403.6	685243.1	4513380.3
3326	0.2	-1.4	-1.1	-3.3	-2.3	1.8	3326	685317.7	4513271.6	685322.0	4513260.7	685263.4	4513411.0	685271.3	4513390.6
3327	0.2	-1.4	-1.1	-3.2	-2.3	1.5	3327	685346.0	4513281.5	685349.2	4513273.4	685292.7	4513418.4	685299.2	4513401.7
3328	0.2	-1.3	-1.1	-3.1	-2.3	1.1	3328	685373.5	4513293.6	685377.1	4513284.5	685322.3	4513425.1	685326.8	4513413.4
3329	0.1	-1.3	-1.1	-2.9	-2.3	0.4	3329	685401.2	4513305.1	685404.1	4513297.8	685352.2	4513430.9	685354.0	4513426.2
3330	0.1	-1.2	-1.1	-2.8	-2.3	-0.3	3330	685429.5	4513315.1	685431.3	4513310.6	685382.1	4513436.7	685381.1	4513439.4
3331	0.1	-1.2	-1.1	-2.6	-2.3	-0.9	3331	685457.2	4513326.8	685458.8	4513322.7	685412.2	4513442.3	685408.3	4513452.2
3332	0.1	-1.1	-1.1	-2.5	-2.3	-1.5	3332	685484.7	4513338.9	685486.4	4513334.4	685442.2	4513447.8	685435.7	4513464.5
3333	0.1	-1.0	-1.1	-2.3	-2.3	-2.0	3333	685512.1	4513351.1	685513.7	4513347.0	685472.3	4513453.2	685463.8	4513475.1
3334	0.0	-1.0	-1.1	-2.2	-2.2	-2.3	3334	685540.4	4513361.0	685541.2	4513359.1	685502.6	4513458.2	685492.4	4513484.2
3335	0.0	-0.9	-1.1	-2.0	-2.1	-2.6	3335	685568.8	4513371.3	685568.9	4513370.7	685532.7	4513463.5	685521.4	4513492.4
3336	-0.1	-0.9	-1.1	-1.9	-2.0	-2.8	3336	685596.9	4513381.2	685595.8	4513384.1	685562.5	4513469.5	685550.6	4513500.2
3337	-0.1	-0.9	-1.1	-1.8	-2.0	-2.8	3337	685625.2	4513391.3	685623.1	4513396.7	685591.9	4513476.9	685579.5	4513508.6
3338	-0.1	-0.8	-1.1	-1.7	-1.9	-3.0	3338	685653.1	4513402.3	685650.3	4513409.5	685620.7	4513485.5	685607.6	4513519.1
3339	-0.2	-0.8	-1.1	-1.6	-1.9	-3.2	3339	685680.8	4513413.9	685677.4	4513422.7	685649.1	4513495.3	685634.9	4513531.5

Table A-1. High-Water Shoreline Position Change – Rockaway Inlet to Moriches Inlet, New York

High-Water Shoreline Position Change Rate (m/yr)							High-Water Shoreline Position (UTM Zone 18, NAD 1983)									
1873/88 to			1933/34 to		1983 to		1873/88		1933/34		1983		1991/97			
Transect #	1933/34	1983	1991/97	1983	1991/97	1991/97	Transect #	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)
3340	-0.2	-0.8	-1.1	-1.5	-1.9	-3.5	3340	685708.2	4513426.2	685704.2	4513436.5	685677.5	4513505.0	685662.4	4513543.7
3341	-0.2	-0.8	-1.0	-1.4	-1.9	-3.7	3341	685735.3	4513439.3	685731.1	4513450.0	685706.0	4513514.6	685690.0	4513555.6
3342	-0.2	-0.7	-1.0	-1.3	-1.8	-3.9	3342	685762.4	4513452.4	685757.3	4513465.4	685734.3	4513524.5	685717.3	4513568.2
3343	-0.3	-0.7	-1.0	-1.3	-1.8	-4.0	3343	685789.9	4513464.5	685784.4	4513478.5	685761.9	4513536.2	685744.7	4513580.5
3344	-0.2	-0.7	-1.0	-1.3	-1.8	-4.0	3344	685817.5	4513476.2	685813.0	4513487.7	685789.5	4513548.1	685772.2	4513592.4
3345	-0.2	-0.7	-1.0	-1.3	-1.8	-3.9	3345	685844.9	4513488.6	685840.7	4513499.4	685817.1	4513559.9	685800.0	4513603.7
3346	-0.2	-0.7	-1.0	-1.3	-1.8	-3.9	3346	685872.3	4513500.7	685868.1	4513511.7	685844.8	4513571.4	685827.7	4513615.3
3347	-0.2	-0.7	-1.0	-1.3	-1.8	-4.0	3347	685900.2	4513511.8	685895.1	4513525.1	685872.4	4513583.2	685854.9	4513628.0
3348	-0.3	-0.7	-1.1	-1.2	-1.8	-4.1	3348	685928.8	4513521.0	685921.8	4513539.0	685900.1	4513594.7	685882.5	4513640.0
3349	-0.3	-0.7	-1.1	-1.2	-1.8	-4.0	3349	685956.7	4513532.2	685949.6	4513550.4	685927.7	4513606.6	685910.3	4513651.3
3350	-0.4	-0.8	-1.1	-1.3	-1.8	-3.7	3350	685985.3	4513541.5	685977.9	4513560.5	685954.3	4513620.8	685938.2	4513662.2
3351	-0.4	-0.9	-1.1	-1.4	-1.8	-3.2	3351	686013.8	4513550.9	686005.8	4513571.4	685980.2	4513637.1	685966.2	4513673.0
3352	-0.4	-1.0	-1.1	-1.6	-1.8	-2.7	3352	686042.5	4513559.7	686033.5	4513583.0	686005.3	4513655.3	685993.7	4513685.1
3353	-0.4	-1.0	-1.2	-1.8	-1.9	-2.3	3353	686071.2	4513568.9	686062.3	4513591.6	686031.0	4513672.0	686021.2	4513697.1
3354	-0.4	-1.1	-1.2	-1.9	-1.9	-2.0	3354	686099.6	4513578.6	686090.2	4513602.8	686057.1	4513687.5	686048.6	4513709.3
3355	-0.4	-1.1	-1.2	-1.9	-1.9	-1.8	3355	686127.4	4513589.8	686118.0	4513614.0	686084.4	4513700.2	686076.5	4513720.3
3356	-0.5	-1.1	-1.2	-1.9	-1.8	-1.7	3356	686155.6	4513600.1	686145.5	4513626.1	686111.9	4513712.1	686104.6	4513730.8
3357	-0.4	-1.1	-1.2	-1.9	-1.9	-1.6	3357	686183.5	4513611.1	686174.6	4513633.9	686140.0	4513722.7	686133.0	4513740.7
3358	-0.4	-1.1	-1.2	-2.0	-1.9	-1.5	3358	686211.5	4513622.0	686203.6	4513642.1	686167.9	4513733.8	686161.5	4513750.2
3359	-0.4	-1.1	-1.2	-2.0	-1.9	-1.3	3359	686240.2	4513630.9	686231.7	4513652.8	686195.7	4513745.0	686190.1	4513759.3
3360	-0.4	-1.2	-1.2	-2.1	-1.9	-1.2	3360	686269.0	4513639.7	686259.7	4513663.5	686223.2	4513757.1	686218.1	4513770.3
3361	-0.4	-1.2	-1.2	-2.1	-1.9	-1.1	3361	686296.5	4513651.6	686287.8	4513674.1	686250.4	4513769.8	686245.7	4513782.0
3362	-0.3	-1.2	-1.1	-2.2	-1.9	-1.0	3362	686322.6	4513667.3	686316.1	4513683.9	686277.7	4513782.5	686273.6	4513793.0
3363	-0.2	-1.1	-1.1	-2.2	-1.9	-0.7	3363	686348.5	4513683.5	686344.2	4513694.4	686305.2	4513794.6	686301.9	4513802.9
3364	-0.2	-1.1	-1.1	-2.2	-1.9	-0.6	3364	686376.8	4513693.5	686371.7	4513706.5	686333.0	4513805.9	686330.5	4513812.3
3365	-0.2	-1.1	-1.1	-2.2	-1.8	-0.5	3365	686404.5	4513705.1	686399.5	4513717.8	686360.9	4513816.8	686358.8	4513822.1
3366	-0.2	-1.1	-1.0	-2.1	-1.8	-0.6	3366	686430.9	4513719.9	686427.1	4513729.6	686389.1	4513827.2	686386.3	4513834.2
3367	-0.1	-1.0	-1.0	-2.1	-1.9	-0.8	3367	686457.3	4513734.7	686454.6	4513741.7	686417.0	4513838.0	686413.3	4513847.5
3368	-0.1	-1.0	-1.0	-2.1	-1.9	-1.0	3368	686484.6	4513747.3	686482.6	4513752.3	686444.7	4513849.7	686440.4	4513860.8
3369	-0.1	-1.0	-1.1	-2.1	-1.9	-1.2	3369	686512.6	4513758.1	686509.8	4513765.3	686472.2	4513861.6	686467.0	4513875.0
3370	-0.2	-1.1	-1.1	-2.1	-2.0	-1.7	3370	686541.4	4513766.8	686536.7	4513778.9	686500.3	4513872.3	686493.1	4513890.7
3371	-0.3	-1.1	-1.2	-2.0	-2.0	-2.0	3371	686570.8	4513774.1	686563.9	4513791.8	686528.5	4513882.6	686519.6	4513905.2
3372	-0.3	-1.1	-1.2	-2.0	-2.0	-2.2	3372	686598.9	4513784.4	686591.8	4513802.7	686556.3	4513893.7	686546.6	4513918.7
3373	-0.3	-1.1	-1.2	-2.0	-2.1	-2.4	3373	686627.1	4513794.7	686620.3	4513812.2	686584.1	4513905.0	686573.8	4513931.3
3374	-0.3	-1.1	-1.2	-2.1	-2.2	-2.5	3374	686654.7	4513806.6	686648.7	4513822.0	686611.9	4513916.4	686600.8	4513944.7
3375	-0.2	-1.1	-1.2	-2.1	-2.2	-2.6	3375	686680.5	4513822.9	686676.6	4513832.9	686639.3	4513928.5	686627.8	4513958.0
3376	-0.1	-1.0	-1.2	-2.1	-2.2	-2.3	3376	686706.1	4513839.8	686704.1	4513845.2	686666.3	4513942.1	686656.1	4513968.2
3377	-0.1	-1.0	-1.1	-2.2	-2.2	-2.1	3377	686733.8	4513851.5	686731.7	4513856.9	686692.9	4513956.4	686683.9	4513979.4
3378	-0.1	-1.1	-1.2	-2.3	-2.2	-1.8	3378	686762.1	4513861.5	686760.1	4513866.6	686719.3	4513971.3	686711.3	4513991.6
3379	-0.1	-1.2	-1.2	-2.4	-2.3	-1.5	3379	686791.3	4513869.2	686789.1	4513874.8	686745.7	4513986.0	686739.2	4514002.8
3380	-0.3	-1.3	-1.3	-2.5	-2.3	-1.2	3380	686822.8	4513870.8	686817.3	4513885.0	686772.5	4514000.0	686767.4	4514013.1
3381	-0.3	-1.3	-1.3	-2.6	-2.3	-0.9	3381	686852.2	4513878.1	686845.4	4513895.5	686799.5	4514013.3	686795.5	4514023.4
3382	-0.3	-1.3	-1.3	-2.6	-2.2	-0.7	3382	686879.2	4513891.3	686873.4	4513906.3	686826.9	4514025.5	686823.8	4514033.6
3383	-0.1	-1.3	-1.2	-2.7	-2.3	-0.6	3383	686904.6	4513908.9	686902.0	4513915.6	686854.3	4514038.0	686851.6	4514044.7
3384	-0.0	-1.2	-1.1	-2.7	-2.2	-0.5	3384	686929.3	4513928.1	686928.8	4513929.4	686881.5	4514050.7	686879.5	4514055.9
3385	0.0	-1.2	-1.1	-2.6	-2.2	-0.4	3385	686955.8	4513942.6	686956.2	4513941.8	686909.3	4514062.0	686907.6	4514066.4
3386	-0.0	-1.2	-1.1	-2.6	-2.2	-0.3	3386	686984.5	4513951.7	686983.6	4513954.0	686936.6	4514074.5	686935.2	4514078.1
3387	-0.1	-1.3	-1.2	-2.7	-2.2	-0.3	3387	687013.7	4513959.4	687011.7	4513964.5	686963.9	4514087.3	686962.7	4514090.2
3388	-0.1	-1.3	-1.2	-2.7	-2.2	-0.2	3388	687042.0	4513969.4	687039.6	4513975.5	686991.0	4514100.2	686990.3	4514102.1
3389	-0.1	-1.3	-1.2	-2.8	-2.3	-0.2	3389	687070.7	4513978.4	687068.4	4513984.2	687018.5	4514112.3	687017.8	4514114.0
3390	-0.2	-1.4	-1.3	-2.9	-2.3	-0.1	3390	687100.4	4513984.9	687097.1	4513993.3	687046.0	4514124.4	687045.5	4514125.6
3391	-0.2	-1.4	-1.3	-3.0	-2.4	0.1	3391	687129.6	4513992.5	687126.3	4514001.1	687073.1	4514137.5	687073.5	4514136.5
3392	-0.1	-1.5	-1.3	-3.1	-2.4	0.4	3392	687157.7	4514002.9	687155.4	4514008.9	687100.4	4514150.0	687102.0	4514145.9

Table A-1. High-Water Shoreline Position Change – Rockaway Inlet to Moriches Inlet, New York

High-Water Shoreline Position Change Rate (m/yr)							High-Water Shoreline Position (UTM Zone 18, NAD 1983)									
1873/88 to			1933/34 to			1983 to	1873/88		1933/34		1983		1991/97			
Transect #	1933/34	1983	1991/97	1963	1991/97	1991/97	Transect #	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)
3393	-0.1	-1.5	-1.3	-3.2	-2.4	0.7	3393	687186.0	4514013.0	687184.8	4514016.0	687127.8	4514162.2	687130.7	4514154.9
3394	-0.0	-1.5	-1.3	-3.3	-2.5	1.0	3394	687214.6	4514022.3	687213.6	4514024.7	687155.2	4514174.5	687159.4	4514163.8
3395	0.1	-1.5	-1.2	-3.4	-2.5	1.2	3395	687241.9	4514034.9	687243.7	4514030.1	687182.8	4514186.4	687188.2	4514172.5
3396	0.1	-1.5	-1.2	-3.5	-2.5	1.6	3396	687270.5	4514043.9	687272.5	4514038.9	687210.7	4514197.4	687217.8	4514179.3
3397	0.1	-1.5	-1.2	-3.5	-2.4	1.9	3397	687298.9	4514053.8	687300.4	4514049.9	687238.9	4514207.6	687247.1	4514186.7
3398	0.1	-1.5	-1.2	-3.5	-2.4	2.0	3398	687326.7	4514065.1	687328.7	4514059.9	687267.4	4514217.2	687276.0	4514195.2
3399	0.2	-1.5	-1.2	-3.5	-2.4	2.0	3399	687354.7	4514075.9	687358.3	4514066.6	687296.0	4514226.4	687304.7	4514204.1
3400	0.2	-1.5	-1.1	-3.5	-2.4	2.0	3400	687382.2	4514088.0	687387.1	4514075.4	687324.6	4514235.6	687333.4	4514213.1
3401	0.3	-1.5	-1.1	-3.5	-2.5	2.0	3401	687410.0	4514099.3	687415.8	4514084.4	687352.8	4514245.8	687361.4	4514223.7
3402	0.3	-1.5	-1.1	-3.6	-2.5	1.9	3402	687438.5	4514108.6	687444.9	4514092.2	687381.2	4514255.6	687389.3	4514235.0
3403	0.3	-1.5	-1.2	-3.6	-2.6	1.6	3403	687466.9	4514116.5	687473.4	4514101.7	687409.8	4514264.9	687416.9	4514246.6
3404	0.3	-1.4	-1.1	-3.5	-2.5	1.3	3404	687494.0	4514131.4	687500.8	4514114.1	687438.7	4514273.4	687444.4	4514258.7
3405	0.3	-1.4	-1.1	-3.4	-2.5	1.2	3405	687521.4	4514143.8	687527.8	4514127.4	687467.5	4514282.0	687472.7	4514268.7
3406	0.3	-1.3	-1.1	-3.3	-2.4	1.2	3406	687548.6	4514156.6	687554.4	4514141.8	687496.2	4514291.1	687501.2	4514278.3
3407	0.2	-1.3	-1.1	-3.1	-2.3	1.2	3407	687575.9	4514169.3	687580.0	4514158.7	687524.8	4514300.3	687530.0	4514286.9
3408	0.1	-1.3	-1.0	-3.0	-2.1	1.4	3408	687603.4	4514181.3	687606.2	4514174.0	687553.2	4514310.0	687559.5	4514293.9
3409	0.1	-1.3	-1.0	-2.9	-2.0	1.8	3409	687630.9	4514193.3	687632.4	4514189.4	687581.2	4514320.8	687589.2	4514300.3
3410	0.0	-1.3	-0.9	-2.8	-1.7	2.5	3410	687658.1	4514206.2	687658.0	4514206.3	687608.4	4514333.5	687619.5	4514305.1
3411	-0.1	-1.3	-0.8	-2.8	-1.6	3.4	3411	687685.8	4514217.6	687684.6	4514220.8	687635.3	4514347.1	687650.0	4514309.4
3412	-0.1	-1.3	-0.8	-2.8	-1.4	4.3	3412	687713.1	4514230.2	687711.3	4514234.9	687661.6	4514362.2	687680.2	4514314.6
3413	-0.1	-1.3	-0.7	-2.8	-1.3	4.8	3413	687740.3	4514243.2	687738.0	4514248.9	687688.8	4514375.2	687709.7	4514321.4
3414	-0.2	-1.3	-0.7	-2.7	-1.2	5.0	3414	687767.8	4514255.0	687764.1	4514264.5	687716.7	4514386.2	687738.7	4514329.8
3415	-0.2	-1.3	-0.7	-2.6	-1.1	5.0	3415	687795.7	4514266.2	687790.7	4514278.9	687744.8	4514396.6	687766.4	4514341.2
3416	-0.2	-1.3	-0.7	-2.5	-1.1	4.8	3416	687823.0	4514278.8	687818.1	4514291.4	687773.1	4514406.7	687793.8	4514353.6
3417	-0.3	-1.3	-0.7	-2.5	-1.1	4.4	3417	687851.1	4514289.3	687845.7	4514303.0	687801.7	4514415.8	687820.7	4514367.1
3418	-0.3	-1.3	-0.8	-2.4	-1.2	3.8	3418	687880.2	4514297.1	687874.2	4514312.7	687830.9	4514423.5	687847.3	4514381.5
3419	-0.2	-1.2	-0.8	-2.5	-1.3	3.4	3419	687908.7	4514306.7	687904.6	4514317.1	687860.3	4514430.8	687875.2	4514392.4
3420	0.0	-1.1	-0.7	-2.5	-1.4	3.2	3420	687934.1	4514324.2	687934.0	4514324.2	687890.0	4514437.1	687903.9	4514401.7
3421	-0.0	-1.0	-0.6	-2.2	-1.2	2.9	3421	687960.8	4514338.2	687960.0	4514340.2	687920.2	4514442.4	687932.9	4514409.8
3422	-0.2	-1.0	-0.6	-2.0	-1.1	2.5	3422	687989.5	4514347.2	687986.2	4514355.7	687951.1	4514445.7	687962.1	4514417.4
3423	-0.2	-0.9	-0.6	-1.8	-1.0	2.3	3423	688017.7	4514357.4	688014.1	4514366.6	687981.9	4514449.2	687991.8	4514423.8
3424	-0.2	-0.9	-0.6	-1.7	-0.9	2.2	3424	688046.2	4514366.9	688041.9	4514378.1	688012.5	4514453.4	688022.1	4514428.7
3425	-0.2	-0.8	-0.5	-1.5	-0.7	2.2	3425	688074.7	4514376.5	688069.4	4514389.9	688043.3	4514456.9	688053.0	4514432.0
3426	-0.2	-0.8	-0.4	-1.5	-0.6	2.7	3426	688103.2	4514385.9	688098.7	4514397.4	688072.7	4514464.1	688084.5	4514433.9
3427	-0.2	-0.8	-0.4	-1.5	-0.5	3.7	3427	688132.0	4514394.5	688127.2	4514406.8	688100.4	4514475.7	688116.3	4514435.0
3428	-0.3	-0.9	-0.3	-1.5	-0.3	4.8	3428	688160.7	4514403.7	688153.4	4514422.4	688127.0	4514490.0	688147.7	4514436.9
3429	-0.4	-0.9	-0.2	-1.6	-0.1	6.1	3429	688189.1	4514413.4	688181.4	4514433.2	688153.3	4514505.1	688179.7	4514437.4
3430	-0.4	-1.0	-0.1	-1.6	0.2	7.5	3430	688217.9	4514422.2	688208.7	4514445.6	688179.9	4514519.5	688212.6	4514435.5
3431	-0.4	-1.0	0.0	-1.7	0.4	9.1	3431	688246.6	4514430.9	688237.2	4514455.1	688207.3	4514531.8	688246.9	4514430.2
3432	-0.4	-1.0	0.1	-1.8	0.7	10.5	3432	688275.3	4514439.9	688266.6	4514462.4	688235.4	4514542.2	688281.2	4514424.9
3433	-0.4	-1.0	0.3	-1.8	0.9	11.9	3433	688303.9	4514449.3	688295.2	4514471.6	688264.0	4514551.6	688316.1	4514418.0
3434	-0.4	-1.0	0.5	-1.7	1.4	14.2	3434	688332.2	4514459.2	688323.1	4514482.5	688293.3	4514558.9	688355.1	4514400.5
3435	-0.5	-1.0	0.6	-1.5	1.6	14.1	3435	688360.3	4514469.8	688349.7	4514497.0	688322.8	4514566.0	688384.2	4514408.5
3436	-0.5	-0.9	0.5	-1.4	1.5	13.2	3436	688388.2	4514480.8	688377.9	4514507.1	688352.9	4514571.4	688410.4	4514423.8
3437	-0.5	-0.9	0.4	-1.3	1.4	12.1	3437	688416.7	4514490.3	688406.1	4514517.5	688383.4	4514575.8	688435.9	4514441.0
3438	-0.5	-0.8	0.4	-1.1	1.2	10.8	3438	688445.0	4514500.2	688433.7	4514529.3	688414.0	4514579.8	688461.2	4514458.6
3439	-0.5	-0.7	0.3	-0.9	1.1	9.4	3439	688472.6	4514512.0	688461.6	4514540.4	688445.0	4514582.7	688486.1	4514477.4
3440	-0.5	-0.6	0.3	-0.7	1.0	7.9	3440	688499.9	4514524.6	688488.8	4514553.0	688476.3	4514585.2	688510.7	4514496.9
3441	-0.5	-0.5	0.2	-0.5	0.8	6.3	3441	688527.4	4514536.6	688516.6	4514564.5	688507.7	4514587.3	688535.2	4514516.7
3442	-0.4	-0.4	0.1	-0.3	0.7	4.8	3442	688554.4	4514550.1	688545.2	4514573.5	688539.3	4514588.8	688560.1	4514535.4
3443	-0.3	-0.2	0.1	-0.1	0.5	3.1	3443	688580.6	4514565.5	688574.1	4514582.2	688572.0	4514587.5	688585.7	4514552.4
3444	-0.2	0.0	0.1	0.2	0.4	1.2	3444	688606.6	4514581.3	688602.8	4514591.0	688606.7	4514581.0	688611.8	4514567.9
3445	-0.1	0.2	0.1	0.7	0.4	-0.7	3445	688633.0	4514596.3	688629.9	4514604.0	688642.0	4514573.1	688638.8	4514581.4

Table A-1. High-Water Shoreline Position Change – Rockaway Inlet to Moriches Inlet, New York

High-Water Shoreline Position Change Rate (m/yr)						
	1873/88 to			1933/34 to		1983 to
Transect #	1933/34	1983	1991/97	1983	1991/97	1991/97
3446	-0.2	0.4	0.1	1.1	0.4	-2.4
3447	-0.1	0.5	0.1	1.2	0.3	-3.6
3448	-0.1	0.5	0.0	1.2	0.1	-4.2
3449	-0.2	0.4	-0.0	1.1	0.1	-4.0
3450	-0.3	0.3	-0.1	1.0	0.1	-3.7
3451	-0.4	0.2	-0.2	0.8	-0.0	-3.5
3452	-0.5	0.1	-0.3	0.7	-0.1	-3.5
3453	-0.6	-0.1	-0.4	0.6	-0.2	-3.4
3454	-0.7	-0.2	-0.5	0.5	-0.3	-3.2
3455	-0.8	-0.3	-0.6	0.4	-0.4	-3.3
3456	-0.8	-0.3	-0.6	0.3	-0.5	-3.5
3457	-0.8	-0.4	-0.7	0.1	-0.6	-3.5
3458	-0.7	-0.4	-0.7	-0.1	-0.7	-3.3
3459	-0.8	-0.5	-0.8	-0.3	-0.8	-2.9
3460	-0.8	-0.7	-0.8	-0.4	-0.8	-2.4
3461	-0.9	-0.8	-0.9	-0.6	-0.8	-1.7
3462	-1.0	-0.9	-0.9	-0.8	-0.8	-1.1
3463	-1.2	-1.1	-1.0	-1.0	-0.9	-0.6
3464	-1.3	-1.2	-1.1	-1.1	-0.9	-0.1
3465	-1.5	-1.4	-1.3	-1.3	-1.0	0.1
3466	-1.7	-1.6	-1.4	-1.4	-1.1	0.3
3467	-1.7	-1.6	-1.5	-1.5	-1.2	0.2
3468	-1.7	-1.6	-1.5	-1.6	-1.3	-0.0
3469	-1.6	-1.6	-1.5	-1.6	-1.4	-0.5
3470	-1.5	-1.6	-1.5	-1.6	-1.4	-0.7
3471	-1.5	-1.5	-1.5	-1.5	-1.4	-0.9
3472	-1.6					
3473	-1.7					
3474	-1.7					
3475	-1.7					
3476	-1.8					
3477	-1.9					
3478	-2.0					
3479	-2.1					
3480	-2.1					
3481	-2.2					
3482	-2.1					
3483	-2.0					
3484	-2.0					
3485	-1.9					
3486	-1.9					
3487	-1.9					
3488	-1.9					
3489	-1.8					
3490	-1.8					
3491	-1.8					
3492	-1.8					
3493	-1.8					
3494	-1.8					
3495	-1.8					
3496	-1.7					
3497	-1.7					
3498	-1.7					

High-Water Shoreline Position (UTM Zone 18, NAD 1983)								
	1873/88		1933/34		1983		1991/97	
Transect #	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)
3446	688659.7	4514610.3	688656.5	4514618.4	688675.5	4514569.8	688665.1	4514596.6
3447	688687.4	4514621.7	688685.3	4514627.3	688706.3	4514573.4	688690.8	4514613.2
3448	688715.7	4514631.9	688714.0	4514636.1	688734.6	4514583.5	688716.4	4514630.0
3449	688744.2	4514641.3	688740.9	4514649.9	688760.1	4514600.6	688742.5	4514645.6
3450	688773.3	4514649.3	688766.7	4514666.3	688784.4	4514620.7	688768.5	4514661.7
3451	688802.2	4514657.8	688794.5	4514677.4	688808.9	4514640.6	688793.6	4514679.9
3452	688831.5	4514665.2	688821.5	4514690.9	688833.4	4514660.3	688818.4	4514698.9
3453	688861.7	4514670.2	688848.0	4514705.3	688857.8	4514680.3	688843.2	4514717.7
3454	688889.6	4514681.4	688874.0	4514721.4	688882.1	4514700.6	688868.1	4514736.6
3455	688917.2	4514693.2	688900.9	4514735.0	688907.3	4514718.6	688892.7	4514755.9
3456	688944.3	4514706.1	688927.8	4514748.6	688932.3	4514737.1	688917.1	4514776.1
3457	688971.5	4514719.0	688954.7	4514762.2	688956.7	4514756.9	688941.6	4514795.7
3458	688998.3	4514732.9	688982.4	4514773.5	688981.1	4514777.0	688966.7	4514814.0
3459	689026.1	4514744.2	689010.1	4514785.3	689005.5	4514797.1	688992.8	4514829.6
3460	689055.1	4514752.4	689037.5	4514797.6	689029.7	4514817.6	689019.2	4514844.6
3461	689084.1	4514760.6	689064.2	4514811.7	689053.6	4514838.7	689046.1	4514858.0
3462	689113.6	4514767.5	689091.5	4514824.3	689077.7	4514859.5	689073.0	4514871.7
3463	689143.5	4514773.4	689118.8	4514836.7	689101.8	4514880.4	689099.3	4514886.8
3464	689174.0	4514777.9	689146.3	4514848.8	689126.1	4514900.6	689125.5	4514902.1
3465	689204.8	4514781.3	689172.6	4514863.8	689149.8	4514922.4	689150.4	4514920.9
3466	689235.2	4514785.9	689198.8	4514879.2	689173.8	4514943.3	689174.9	4514940.5
3467	689262.6	4514798.3	689225.8	4514892.6	689198.6	4514962.5	689199.5	4514960.1
3468	689288.5	4514814.5	689252.1	4514907.9	689224.3	4514979.0	689224.1	4514979.5
3469	689313.3	4514833.4	689279.2	4514920.9	689251.2	4514992.7	689249.0	4514998.4
3470	689339.3	4514849.2	689307.1	4514931.9	689278.7	4515004.7	689275.8	4515012.3
3471	689367.9	4514858.4	689335.0	4514943.1	689308.5	4515011.0	689304.7	4515020.6
3472	689396.3	4514868.3	689362.4	4514955.1				
3473	689425.2	4514876.7	689389.9	4514967.2				
3474	689453.7	4514886.2	689417.5	4514979.1				
3475	689481.6	4514897.3	689444.6	4514992.3				
3476	689510.2	4514906.4	689471.0	4515007.1				
3477	689538.9	4514915.5	689498.5	4515019.0				
3478	689568.4	4514922.5	689526.2	4515030.8				
3479	689598.9	4514926.7	689553.1	4515044.1				
3480	689626.6	4514938.2	689581.0	4515055.3				
3481	689654.7	4514948.8	689608.6	4515067.1				
3482	689682.1	4514961.2	689636.6	4515077.8				
3483	689707.9	4514977.4	689664.5	4515088.9				
3484	689734.2	4514992.7	689691.9	4515101.2				
3485	689761.3	4515005.8	689719.8	4515112.3				
3486	689789.3	4515016.5	689748.9	4515120.2				
3487	689817.4	4515027.0	689776.9	4515131.0				
3488	689844.9	4515039.1	689805.1	4515141.3				
3489	689872.3	4515051.4	689833.3	4515151.5				
3490	689900.4	4515061.8	689861.7	4515161.1				
3491	689929.0	4515071.0	689890.6	4515169.6				
3492	689957.1	4515081.6	689918.5	4515180.6				
3493	689985.7	4515090.9	689946.9	4515190.5				
3494	690014.6	4515099.2	689975.8	4515198.8				
3495	690042.6	4515110.0	690004.9	4515206.9				
3496	690070.0	4515122.4	690033.8	4515215.4				
3497	690097.6	4515134.2	690061.2	4515227.6				
3498	690124.8	4515147.0	690088.4	4515240.5				

APPENDIX B. HIGH-WATER SHORELINE POSITION CHANGE FOR NEW JERSEY

The following data tables provide shoreline position (UTM-x, UTM-y) and change statistics for the coast of northeastern New Jersey from Sandy Hook to Barnegat Inlet at a 30-m longshore spacing. Transect 1 is located at the northern end of Sandy Hook. Cumulative and incremental change rates are provided on the left half of the table, and shoreline position for each transect is listed on the right side of the table. All length measurements are recorded in meters.

Table B-1. High-Water Shoreline Position Change - Sandy Hook to Barnegat Inlet, New Jersey

	High-Water Shoreline Position Change Rate (m/yr)						High-Water Shoreline Position (UTM Zone 18, NAD 1983)							
	1836/39 to			1855/75 to		1932/33 to	1836/39		1855/75		1932/33		1977	
Transect #	1855/75	1932/33	1977	1932/33	1977	1977	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)
1													583493.8	4481253.5
2													583534.7	4481224.0
3													583573.5	4481192.2
4													583611.5	4481159.6
5						5.9					583470.5	4480939.6	583650.4	4481127.9
6						5.0					583543.7	4480943.9	583695.3	4481102.5
7						4.8					583605.4	4480936.1	583750.6	4481088.0
8						4.3					583667.2	4480928.3	583798.7	4481066.0
9						4.5					583718.9	4480910.0	583854.7	4481052.2
10						4.9					583764.3	4480885.2	583913.9	4481041.8
11						5.5					583813.0	4480863.8	583981.1	4481039.7
12						6.0					583864.2	4480845.0	584047.6	4481036.9
13						6.2					583914.9	4480825.7	584103.2	4481022.8
14						6.2					583968.1	4480809.0	584156.6	4481006.3
15						6.3					584016.9	4480787.7	584208.6	4480988.3
16						6.2					584065.0	4480765.7	584254.2	4480963.6
17						6.4					584110.2	4480740.6	584306.0	4480945.4
18				0.7	2.8	6.7			584123.3	4480682.0	584158.6	4480718.9	584361.5	4480931.2
19				0.5	2.7	6.6			584183.8	4480672.9	584210.8	4480701.1	584409.9	4480909.5
20	4.7	1.2	2.7	0.4	2.4	6.1	584187.0	4480603.9	584248.4	4480668.0	584268.7	4480689.4	584453.5	4480882.7
21	4.5	1.1	2.4	0.2	2.1	5.5	584260.1	4480608.0	584319.7	4480670.3	584330.8	4480681.9	584497.9	4480856.8
22	6.3	1.3	2.4	0.1	1.8	4.7	584310.7	4480588.5	584393.7	4480675.4	584399.5	4480681.5	584540.9	4480829.4
23	6.2	1.6	2.3	0.5	1.7	3.9	584358.5	4480566.2	584439.9	4480651.4	584464.9	4480677.5	584583.8	4480801.9
24	6.2	1.8	2.3	0.8	1.7	3.2	584403.3	4480540.7	584484.0	4480625.2	584524.4	4480667.4	584622.8	4480770.4
25	7.0	1.9	2.2	0.7	1.5	2.9	584445.5	4480512.5	584537.7	4480609.0	584574.4	4480647.3	584663.4	4480740.5
26	8.4	2.0	2.3	0.4	1.4	3.0	584482.0	4480478.3	584591.7	4480593.1	584613.4	4480615.8	584705.2	4480711.9
27	8.7	1.8	2.3	0.2	1.3	3.2	584523.9	4480449.8	584638.7	4480569.9	584647.2	4480578.9	584745.2	4480681.3
28	8.1	1.6	2.1	0.1	1.2	3.1	584571.0	4480426.7	584676.7	4480537.4	584679.2	4480539.9	584774.1	4480639.2
29	7.7	1.4	1.9	-0.1	1.0	3.0	584615.8	4480401.2	584716.4	4480506.5	584712.0	4480501.9	584802.0	4480596.1
30	7.1	1.3	1.7	-0.1	0.9	2.6	584657.7	4480372.7	584751.3	4480470.6	584744.8	4480463.8	584824.4	4480547.2
31	6.8	1.2	1.5	-0.1	0.7	2.1	584699.7	4480344.3	584788.9	4480437.6	584782.0	4480430.4	584846.5	4480497.9
32	6.4		1.4		0.6		584739.0	4480313.1	584823.2	4480401.2			584872.9	4480453.1
33	5.6	1.2	1.2	0.1	0.5	1.2	584778.9	4480282.4	584852.0	4480358.9	584858.6	4480365.8	584896.3	4480405.3
34	4.5	1.4	1.2	0.6	0.6	0.7	584819.4	4480252.4	584878.6	4480314.4	584910.9	4480348.1	584931.9	4480370.2
35	3.7		1.2		0.8		584856.6	4480218.9	584904.5	4480269.1			584970.9	4480338.6
36	3.0	1.4	1.2	1.0	0.9	0.7	584893.8	4480185.5	584932.8	4480226.4	584989.0	4480285.1	585009.8	4480306.9
37	2.2	1.4	1.1	1.2	1.0	0.4	584933.8	4480155.0	584963.0	4480185.6	585029.7	4480255.4	585042.7	4480269.0
38	1.0	1.3	1.0	1.4	1.0	0.3	584975.5	4480126.2	584988.6	4480140.0	585063.4	4480218.3	585071.6	4480226.8
39	-0.6	1.2	0.8	1.6	1.0	0.0	585018.0	4480098.4	585009.8	4480089.7	585096.1	4480180.1	585097.0	4480181.1
40	-0.9		0.6		0.8		585053.6	4480063.2	585041.5	4480050.6			585110.5	4480122.8
41	-1.7	0.9	0.3	1.5	0.6	-1.0	585093.5	4480032.7	585071.1	4480009.2	585153.9	4480095.9	585123.7	4480064.2
42	-4.3	0.6	0.0	1.8	0.7	-1.3	585139.7	4480008.6	585083.6	4479949.9	585182.4	4480053.3	585143.5	4480012.6
43	-6.3	0.4	-0.1	2.1	0.8	-1.3	585175.1	4479973.3	585092.2	4479886.5	585203.0	4480002.4	585162.9	4479960.5
44	-7.2	0.4	-0.3	2.3	0.8	-1.9	585207.2	4479934.5	585113.0	4479835.9	585235.9	4479964.5	585179.1	4479905.1
45	-7.0	0.2	-0.3	2.0	0.7	-1.5	585232.7	4479888.8	585140.8	4479792.6	585246.2	4479903.0	585201.5	4479856.2
46	-7.4	-0.1	-0.4	1.7	0.7	-1.0	585258.8	4479843.8	585161.8	4479742.2	585253.4	4479838.1	585222.0	4479805.2
47	-8.3	-0.0	-0.4	2.0	0.8	-1.3	585284.4	4479798.1	585175.8	4479684.6	585282.8	4479796.5	585244.0	4479755.9
48	-5.2	-0.1	-0.4	2.0	0.8	-1.1	585299.0	4479771.4	585159.8	4479749.1	585289.1	4479769.8	585241.6	4479762.2
49	-5.4	-0.2	-0.4	1.9	0.8	-1.0	585312.4	4479743.1	585167.6	4479719.9	585294.3	4479740.2	585252.3	4479733.5
50	-5.4	-0.1	-0.4	2.0	0.8	-1.1	585319.5	4479713.9	585174.9	4479690.7	585307.9	4479712.0	585259.2	4479704.2
51	-5.7	-0.2	-0.5	2.0	0.8	-1.0	585332.4	4479685.6	585181.1	4479661.3	585310.3	4479682.0	585267.4	4479675.2
52	-5.4	-0.3	-0.5	1.8	0.8	-0.9	585342.2	4479656.8	585197.3	4479633.6	585318.7	4479653.0	585279.4	4479646.7
53	-5.2	-0.2	-0.5	1.8	0.7	-0.9	585352.5	4479628.0	585213.1	4479605.7	585332.2	4479624.8	585291.8	4479618.3

Table B-1. High-Water Shoreline Position Change - Sandy Hook to Barnegat Inlet, New Jersey

	High-Water Shoreline Position Change Rate (m/yr)						High-Water Shoreline Position (UTM Zone 18, NAD 1983)							
	1836/39 to			1855/75 to		1932/33 to	1836/39		1855/75		1932/33		1977	
Transect #	1855/75	1932/33	1977	1932/33	1977	1977	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)
54	-5.4	-0.2	-0.5	1.8	0.8	-0.9	585364.7	4479599.6	585220.9	4479576.6	585342.5	4479596.1	585302.8	4479589.7
55	-5.6	-0.3	-0.5	1.9	0.8	-0.9	585375.4	4479570.9	585227.5	4479547.2	585352.1	4479567.2	585314.2	4479561.1
56	-5.9	-0.3	-0.5	2.0	0.9	-0.9	585389.1	4479542.7	585232.2	4479517.6	585362.7	4479538.5	585325.6	4479532.6
57	-6.5	-0.4	-0.5	2.1	0.9	-0.8	585409.6	4479515.6	585235.3	4479487.7	585371.6	4479509.6	585338.2	4479504.2
58	-7.1	-0.5	-0.6	2.1	1.0	-0.7	585429.7	4479488.5	585241.8	4479458.4	585379.3	4479480.4	585349.1	4479475.6
59	-7.4	-0.7	-0.6	2.0	1.0	-0.5	585445.8	4479460.7	585249.9	4479429.3	585382.6	4479450.6	585359.3	4479446.8
60	-7.5	-0.8	-0.7	1.9	1.0	-0.4	585461.1	4479432.8	585262.0	4479400.9	585388.2	4479421.1	585369.5	4479418.1
61	-7.3	-0.9	-0.7	1.8	0.9	-0.3	585473.7	4479404.4	585278.9	4479373.2	585394.7	4479391.7	585381.6	4479389.6
62	-7.0	-0.9	-0.7	1.6	0.9	-0.2	585482.0	4479375.3	585295.3	4479345.4	585402.1	4479362.5	585393.6	4479361.2
63	-6.6	-0.9	-0.6	1.5	0.9	0.0	585489.0	4479346.1	585311.9	4479317.7	585408.8	4479333.2	585409.9	4479333.4
64	-6.4	-0.9	-0.5	1.4	0.9	0.2	585497.1	4479317.0	585327.1	4479289.8	585416.4	4479304.1	585424.4	4479305.3
65	-6.4	-0.9	-0.5	1.3	0.9	0.3	585507.4	4479288.3	585337.9	4479261.1	585426.8	4479275.3	585439.3	4479277.4
66	-6.3	-0.9	-0.5	1.3	0.9	0.4	585518.8	4479259.7	585351.1	4479232.8	585434.6	4479246.2	585453.5	4479249.2
67	-6.2	-0.9	-0.5	1.2	0.9	0.6	585529.6	4479231.0	585365.0	4479204.7	585444.3	4479217.4	585468.1	4479221.2
68	-5.8	-0.8	-0.4	1.2	0.9	0.6	585536.7	4479201.8	585382.0	4479177.0	585458.5	4479189.3	585483.6	4479193.3
69	-5.5	-0.8	-0.3	1.0	0.9	0.8	585543.7	4479172.5	585398.2	4479149.2	585465.6	4479160.0	585498.9	4479165.4
70	-5.2	-0.8	-0.2	1.0	1.0	0.9	585551.4	4479143.4	585413.7	4479121.3	585478.7	4479131.7	585518.5	4479138.1
71	-4.8	-0.7	-0.2	0.9	1.0	1.1	585558.2	4479114.1	585431.0	4479093.7	585489.8	4479103.1	585535.2	4479110.4
72	-4.2	-0.7	-0.1	0.7	0.9	1.3	585564.7	4479084.8	585452.3	4479066.8	585496.0	4479073.8	585552.9	4479082.9
73	-3.6	-0.7	0.0	0.5	0.9	1.4	585571.6	4479055.5	585474.9	4479040.0	585510.3	4479045.7	585572.2	4479055.6
74	-3.4	-0.6	0.1	0.5	0.9	1.5	585580.0	4479026.4	585490.4	4479012.1	585524.3	4479017.5	585591.0	4479028.2
75	-3.1	-0.6	0.2	0.4	1.0	1.9	585588.0	4478997.3	585506.8	4478984.3	585530.0	4478988.1	585612.0	4479001.2
76	-2.6	-0.6	0.3	0.3	1.0	2.1	585594.7	4478968.0	585524.3	4478956.8	585540.6	4478959.4	585631.3	4478973.9
77	-2.3	-0.5	0.4	0.2	1.1	2.3	585601.7	4478938.8	585539.6	4478928.8	585554.5	4478931.2	585655.0	4478947.3
78	-2.0	-0.6	0.5	0.0	1.1	2.7	585611.6	4478910.0	585558.9	4478901.5	585559.8	4478901.7	585675.8	4478920.3
79	-1.8	-0.6	0.5	-0.0	1.1	2.8	585626.7	4478882.0	585578.8	4478874.3	585576.0	4478873.9	585695.7	4478893.1
80	-1.5	-0.5	0.6	-0.1	1.1	2.9	585638.9	4478853.6	585599.8	4478847.3	585592.5	4478846.2	585718.1	4478866.3
81	-1.4	-0.5	0.6	-0.2	1.1	3.1	585654.9	4478825.8	585618.7	4478820.0	585607.4	4478818.2	585740.2	4478839.4
82	-1.3	-0.6	0.7	-0.3	1.1	3.3	585672.1	4478798.1	585638.9	4478792.8	585616.7	4478789.3	585761.9	4478812.5
83	-1.1	-0.7	0.7	-0.5	1.2	3.7	585686.6	4478770.1	585658.4	4478765.6	585623.0	4478759.9	585785.0	4478785.8
84	-0.8	-0.7	0.8	-0.7	1.2	4.1	585702.1	4478742.2	585680.1	4478738.7	585634.1	4478731.3	585811.5	4478759.7
85	-0.8	-0.8	0.9	-0.8	1.2	4.3	585717.3	4478714.2	585697.1	4478711.0	585645.4	4478702.7	585832.5	4478732.7
86	-0.6	-0.8	0.9	-0.9	1.3	4.5	585730.0	4478685.9	585713.4	4478683.2	585657.3	4478674.2	585853.7	4478705.7
87	-0.7	-0.8	1.0	-0.9	1.4	4.8	585746.2	4478658.1	585726.6	4478655.0	585668.4	4478645.6	585875.5	4478678.8
88	-0.8	-0.9	1.0	-0.9	1.4	4.9	585761.1	4478630.1	585740.8	4478626.8	585682.2	4478617.5	585896.7	4478651.8
89	-0.7	-0.8	1.1	-0.9	1.5	5.1	585772.6	4478601.6	585754.3	4478598.6	585695.0	4478589.1	585917.3	4478624.7
90	-0.7	-0.8	1.1	-0.9	1.6	5.3	585785.4	4478573.2	585766.2	4478570.2	585707.4	4478560.7	585936.0	4478597.4
91	-0.7	-0.8	1.2	-0.9	1.6	5.4	585796.5	4478544.6	585778.8	4478541.8	585722.9	4478532.8	585957.7	4478570.4
92	-0.6	-0.7	1.3	-0.8	1.7	5.5	585806.0	4478515.8	585790.2	4478513.2	585738.6	4478505.0	585976.5	4478543.1
93	-0.6	-0.7	1.3	-0.7	1.8	5.5	585817.1	4478487.1	585802.2	4478484.8	585754.6	4478477.1	585995.2	4478515.7
94	-0.5	-0.6	1.4	-0.6	1.8	5.6	585825.2	4478458.1	585813.1	4478456.1	585771.6	4478449.5	586014.1	4478488.3
95	-0.4	-0.5	1.5	-0.5	1.9	5.6	585833.6	4478429.0	585822.2	4478427.2	585788.8	4478421.9	586031.9	4478460.8
96	-0.4	-0.4	1.5	-0.4	2.0	5.6	585841.0	4478399.8	585830.7	4478398.2	585803.5	4478393.8	586048.5	4478433.1
97	-0.3	-0.3	1.6	-0.3	2.1	5.8	585846.6	4478370.3	585838.3	4478369.0	585819.2	4478366.0	586068.9	4478406.0
98	-0.3	-0.2	1.7	-0.1	2.2	5.8	585854.7	4478341.3	585845.8	4478339.8	585836.5	4478338.3	586086.3	4478378.4
99	-0.3	-0.0	1.8	0.1	2.3	5.7	585859.7	4478311.7	585851.4	4478310.3	585855.8	4478311.1	586103.1	4478350.7
100	-0.4	0.1	1.9	0.4	2.4	5.6	585866.8	4478282.4	585855.4	4478280.6	585878.4	4478284.3	586120.4	4478323.1
101	-0.6	0.2	1.9	0.6	2.6	5.6	585873.2	4478253.1	585857.2	4478250.5	585895.3	4478256.6	586136.8	4478295.3
102	-0.7	0.4	2.0	0.8	2.7	5.4	585877.2	4478223.3	585858.5	4478220.3	585914.3	4478229.3	586150.9	4478267.2
103	-0.9	0.5	2.1	1.1	2.8	5.4	585881.7	4478193.7	585858.8	4478190.0	585930.4	4478201.5	586163.7	4478238.8
104	-1.1	0.6	2.1	1.3	2.9	5.3	585889.3	4478164.5	585861.3	4478160.0	585947.4	4478173.8	586178.2	4478210.8
105	-1.2	0.7		1.5			585897.3	4478135.4	585865.1	4478130.3	585965.2	4478146.3		
106	-1.3	0.8		1.6			585905.6	4478106.4	585870.2	4478100.7	585977.3	4478117.8		

Table B-1. High-Water Shoreline Position Change - Sandy Hook to Barnegat Inlet, New Jersey

	High-Water Shoreline Position Change Rate (m/yr)						High-Water Shoreline Position (UTM Zone 18, NAD 1983)							
	1836/39 to			1855/75 to		1932/33 to	1836/39		1855/75		1932/33		1977	
Transect #	1855/75	1932/33	1977	1932/33	1977	1977	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)
107	-1.5	0.8		1.8			585916.0	4478077.6	585875.3	4478071.1	585991.7	4478089.8		
108	-1.6	0.8		1.8			585926.9	4478049.0	585883.6	4478042.1	586005.2	4478061.6		
109	-1.5	0.9		1.8			585936.1	4478020.1	585896.3	4478013.7	586016.1	4478032.9		
110	-1.4	0.9		1.8			585944.9	4477991.1	585907.3	4477985.1	586028.9	4478004.6		
111	-1.8	1.0		2.1			585954.5	4477962.3	585907.4	4477954.7	586043.1	4477976.5		
112	-2.2	1.0		2.2			585965.5	4477933.7	585908.0	4477924.4	586054.9	4477948.0		
113	-2.5	1.0		2.4			585975.2	4477904.8	585908.5	4477894.1	586066.7	4477919.5		
114	-2.8	1.0		2.5			585985.3	4477876.1	585911.2	4477864.2	586078.9	4477891.1		
115	-3.0	1.1		2.7			585993.6	4477847.0	585914.4	4477834.3	586091.2	4477862.6		
116	-3.2	1.1		2.8			586004.0	4477818.3	585920.1	4477804.9	586101.6	4477833.9		
117	-3.4	1.0		2.8			586014.3	4477789.6	585924.9	4477775.2	586110.6	4477805.0		
118	-3.7	1.0		2.9			586026.5	4477761.1	585929.2	4477745.6	586121.3	4477776.3		
119	-4.2	1.0		3.0			586042.7	4477733.3	585931.0	4477715.5	586131.4	4477747.6		
120	-4.7	0.9		3.1			586058.3	4477705.5	585933.7	4477685.5	586138.8	4477718.4		
121	-5.2	0.8	1.6	3.2	3.2	3.4	586075.9	4477677.9	585938.6	4477655.9	586146.9	4477689.3	586293.3	4477712.7
122	-5.6	0.7	1.5	3.2	3.2	3.2	586094.0	4477650.4	585943.6	4477626.3	586156.0	4477660.3	586294.8	4477682.6
123	-6.0	0.6	1.4	3.3	3.2	3.0	586111.7	4477622.9	585950.6	4477597.1	586166.6	4477631.7	586297.6	4477652.7
124	-6.5	0.5	1.3	3.3	3.1	2.9	586131.5	4477595.7	585958.7	4477568.0	586178.1	4477603.1	586302.1	4477623.0
125	-6.8	0.4	1.2	3.3	3.1	2.7	586147.9	4477567.9	585967.6	4477539.0	586187.9	4477574.3	586305.4	4477593.1
126	-6.8	0.4	1.1	3.3	3.0	2.6	586162.2	4477539.8	585982.4	4477511.0	586198.7	4477545.7	586310.6	4477563.6
127	-6.9	0.4	1.0	3.3	2.9	2.4	586176.8	4477511.8	585992.8	4477482.3	586210.0	4477517.1	586314.7	4477533.9
128	-7.0	0.4	1.0	3.4	2.9	2.1	586190.0	4477483.5	586002.9	4477453.5	586226.1	4477489.3	586318.9	4477504.2
129	-7.1	0.4	0.9	3.5	2.8	1.8	586203.2	4477455.2	586014.0	4477424.9	586244.5	4477461.8	586323.4	4477474.5
130	-7.0	0.5	0.8	3.5	2.8	1.6	586216.1	4477426.9	586028.6	4477396.9	586261.5	4477434.2	586330.1	4477445.2
131	-6.9	0.5	0.8	3.5	2.7	1.4	586227.5	4477398.4	586044.2	4477369.0	586273.8	4477405.8	586335.9	4477415.7
132	-6.8	0.5	0.8	3.5	2.6	1.3	586237.4	4477369.6	586055.2	4477340.4	586286.7	4477377.5	586342.7	4477386.4
133	-6.6	0.6	0.8	3.6	2.6	1.0	586244.6	4477340.3	586067.9	4477312.0	586303.8	4477349.8	586348.3	4477356.9
134	-6.4	0.8	0.8	3.6	2.5	0.8	586250.5	4477310.9	586079.6	4477283.5	586320.6	4477322.1	586356.2	4477327.8
135	-6.3	0.9	0.8	3.8	2.5	0.6	586256.1	4477281.4	586087.9	4477254.5	586336.4	4477294.3	586361.3	4477298.3
136	-6.1	1.0	0.8	3.9	2.4	0.2	586263.6	4477252.2	586100.9	4477226.2	586356.9	4477267.2	586365.4	4477268.5
137	-6.1	1.1	0.7	4.0	2.4	-0.1	586272.3	4477223.2	586110.3	4477197.3	586373.4	4477239.4	586368.1	4477238.6
138	-5.9	1.2	0.7	4.1	2.3	-0.4	586277.8	4477193.7	586119.7	4477168.4	586389.9	4477211.7	586370.7	4477208.6
139	-5.6	1.4	0.7	4.2	2.2	-0.8	586282.6	4477164.1	586132.7	4477140.1	586409.1	4477184.4	586373.0	4477178.6
140	-5.5	1.5	0.6	4.3	2.1	-1.3	586287.8	4477134.6	586142.3	4477111.3	586429.4	4477157.3	586373.0	4477148.2
141	-5.1	1.7	0.6	4.5	2.0	-1.8	586293.2	4477105.1	586156.8	4477083.2	586451.2	4477130.4	586372.7	4477117.8
142	-5.1	1.9	0.5	4.7	1.9	-2.4	586298.8	4477075.6	586163.5	4477053.9	586475.5	4477103.9	586370.6	4477087.1
143	-5.1	2.0	0.5	4.9	1.8	-2.9	586304.0	4477046.0	586169.1	4477024.4	586492.8	4477076.3	586367.8	4477056.3
144	-5.0	2.1	0.4	5.0	1.7	-3.2	586309.6	4477016.5	586176.7	4476995.2	586506.4	4477048.1	586365.8	4477025.5
145	-4.9	2.1	0.3	5.0	1.6	-3.5	586315.7	4476987.1	586184.7	4476966.2	586512.7	4477018.7	586362.4	4476994.6
146	-4.8	2.1	0.3	4.9	1.5	-3.6	586321.3	4476957.6	586192.7	4476937.0	586516.6	4476988.9	586358.5	4476963.6
147	-4.5	2.1	0.2	4.7	1.4	-3.8	586327.5	4476928.3	586207.7	4476909.1	586520.0	4476959.1	586355.0	4476932.7
148	-4.3	2.0	0.1	4.5	1.2	-3.9	586336.5	4476899.3	586223.1	4476881.2	586521.2	4476928.9	586350.6	4476901.6
149	-4.1	1.8	-0.0	4.2	1.0	-4.0	586347.5	4476870.7	586239.0	4476853.3	586517.4	4476897.9	586344.7	4476870.2
150	-4.0	1.7	-0.1	4.0	0.8	-4.1	586357.9	4476842.0	586252.3	4476825.1	586515.8	4476867.3	586338.9	4476838.9
151	-4.0	1.5	-0.3	3.8	0.7	-4.1	586367.6	4476813.1	586260.6	4476796.0	586510.9	4476836.1	586334.2	4476807.8
152	-4.2	1.4	-0.3	3.7	0.6	-4.1	586376.9	4476784.3	586266.3	4476766.5	586509.9	4476805.6	586331.1	4476776.9
153	-4.5	1.3	-0.5	3.6	0.5	-4.2	586388.2	4476755.7	586268.4	4476736.5	586509.4	4476775.1	586327.2	4476745.9
154	-4.9	1.2	-0.5	3.6	0.5	-4.2	586397.8	4476726.8	586268.4	4476706.1	586507.2	4476744.4	586325.3	4476715.2
155	-5.1	1.1	-0.6	3.6	0.5	-4.2	586403.4	4476697.4	586267.9	4476675.6	586506.0	4476713.8	586322.9	4476684.5
156	-5.1	1.1	-0.6	3.6	0.5	-4.3	586404.3	4476667.1	586268.5	4476645.4	586505.2	4476683.3	586318.5	4476653.4
157	-5.2	1.1	-0.7	3.6	0.4	-4.5	586405.9	4476637.0	586268.2	4476614.9	586506.9	4476653.2	586313.6	4476622.2
158	-5.2	1.1	-0.7	3.6	0.4	-4.6	586407.7	4476606.9	586268.7	4476584.6	586508.6	4476623.1	586310.5	4476591.3
159	-5.3	1.1	-0.7	3.6	0.4	-4.6	586409.0	4476576.7	586268.3	4476554.2	586508.6	4476592.7	586309.9	4476560.8

Table B-1. High-Water Shoreline Position Change - Sandy Hook to Barnegat Inlet, New Jersey

	High-Water Shoreline Position Change Rate (m/yr)						High-Water Shoreline Position (UTM Zone 18, NAD 1983)								
		1836/39 to			1855/75 to			1836/39		1855/75		1932/33		1977	
Transect #	1855/75	1932/33	1977	1932/33	1977	1977	Transect #	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)
160	-5.3	1.1	-0.7	3.6	0.4	-4.6	160	586409.1	4476546.4	586269.1	4476523.9	586508.4	4476562.3	586308.1	4476530.2
161	-5.1	1.1	-0.8	3.6	0.3	-4.7	161	586408.3	4476515.8	586272.2	4476494.1	586509.3	4476532.0	586306.3	4476499.5
162	-5.0	1.1	-0.8	3.6	0.3	-4.7	162	586407.4	4476485.3	586274.9	4476464.1	586509.9	4476501.7	586304.8	4476468.9
163	-4.9	1.1	-0.8	3.5	0.3	-4.7	163	586407.2	4476454.9	586276.7	4476434.0	586506.5	4476470.8	586303.6	4476438.3
164	-4.8	1.1	-0.8	3.4	0.2	-4.7	164	586406.7	4476424.4	586279.4	4476404.0	586507.1	4476440.5	586301.0	4476407.5
165	-4.5	1.1	-0.8	3.4	0.1	-4.9	165	586404.1	4476393.6	586283.3	4476374.3	586510.1	4476410.6	586299.0	4476376.8
166	-4.5	1.2	-0.8	3.5	0.2	-4.9	166	586400.3	4476362.7	586280.4	4476343.4	586511.5	4476380.5	586298.2	4476346.3
167	-4.4	1.3	-0.7	3.5	0.2	-5.0	167	586396.8	4476331.7	586280.2	4476313.0	586512.8	4476350.3	586296.5	4476315.6
168	-4.2	1.3	-0.8	3.5	0.1	-5.1	168	586396.2	4476301.2	586283.9	4476283.2	586512.8	4476319.9	586293.0	4476284.7
169	-3.9	1.2	-0.8	3.3	0.0	-5.1	169	586396.3	4476270.9	586291.3	4476254.0	586510.8	4476289.2	586291.1	4476254.0
170	-3.8	1.3	-0.8	3.3	-0.1	-5.1	170	586396.6	4476240.5	586295.4	4476224.3	586513.6	4476259.3	586290.2	4476223.5
171	-4.0	1.2	-0.8	3.3	-0.1	-5.2	171	586402.8	4476211.1	586297.6	4476194.3	586513.0	4476228.8	586288.6	4476192.8
172	-4.2	1.1	-0.9	3.2	-0.1	-5.2	172	586410.2	4476181.9	586299.4	4476164.2	586513.6	4476198.5	586285.9	4476162.0
173	-4.5	1.0	-1.0	3.2	-0.2	-5.2	173	586421.0	4476153.3	586302.2	4476134.3	586510.6	4476167.6	586285.2	4476131.5
174	-4.7	0.8	-1.1	3.0	-0.2	-5.1	174	586432.2	4476124.7	586306.9	4476104.6	586506.8	4476136.6	586286.1	4476101.3
175	-4.9	0.7	-1.1	3.0	-0.2	-5.1	175	586442.5	4476096.0	586311.2	4476074.9	586507.4	4476106.4	586287.6	4476071.2
176	-5.2	0.6	-1.2	2.9	-0.3	-5.2	176	586453.6	4476067.4	586315.1	4476045.2	586509.5	4476076.3	586286.0	4476040.5
177	-5.4	0.5	-1.3	2.9	-0.3	-5.2	177	586463.9	4476038.6	586320.5	4476015.7	586512.2	4476046.4	586287.0	4476010.3
178	-5.6	0.4	-1.4	2.8	-0.4	-5.2	178	586474.3	4476009.9	586326.1	4475986.2	586513.9	4476016.3	586286.3	4475979.8
179	-5.7	0.3	-1.5	2.7	-0.4	-5.2	179	586486.2	4475981.4	586334.0	4475957.1	586514.8	4475986.0	586287.0	4475949.5
180	-5.8	0.2	-1.5	2.6	-0.5	-5.3	180	586496.3	4475952.7	586342.9	4475928.1	586515.9	4475955.8	586287.4	4475919.2
181	-5.7	0.1	-1.6	2.5	-0.6	-5.2	181	586504.9	4475923.7	586352.6	4475899.3	586517.5	4475925.7	586291.8	4475889.5
182	-5.6	0.1	-1.6	2.4	-0.6	-5.2	182	586510.4	4475894.2	586362.5	4475870.5	586519.9	4475895.7	586294.5	4475859.6
183	-5.3	0.1	-1.6	2.3	-0.7	-5.2	183	586513.9	4475864.3	586373.5	4475841.9	586523.3	4475865.9	586298.0	4475829.8
184	-4.9	0.1	-1.6	2.2	-0.8	-5.2	184	586515.2	4475834.2	586384.6	4475813.3	586527.8	4475836.2	586301.4	4475799.9
185	-4.5	0.1	-1.6	2.0	-0.8	-5.2	185	586515.7	4475803.9	586396.3	4475784.7	586527.9	4475805.8	586304.3	4475770.0
186	-4.0	0.1	-1.5	1.8	-0.9	-5.1	186	586515.6	4475773.5	586408.2	4475756.3	586526.2	4475775.2	586306.5	4475740.0
187	-3.7	0.1	-1.5	1.7	-1.0	-5.1	187	586515.7	4475743.1	586416.8	4475727.3	586527.0	4475744.9	586305.3	4475709.4
188	-3.4	0.2	-1.5	1.7	-1.1	-5.3	188	586514.0	4475712.5	586423.9	4475698.0	586533.4	4475715.6	586304.1	4475678.8
189	-3.0	0.4	-1.5	1.7	-1.2	-5.6	189	586510.8	4475681.6	586431.5	4475668.9	586543.7	4475686.8	586300.9	4475647.9
190	-2.7	0.5	-1.6	1.8	-1.3	-5.9	190	586510.7	4475651.2	586438.2	4475639.5	586555.7	4475658.4	586298.3	4475617.1
191	-2.7	0.6	-1.6	1.9	-1.4	-6.3	191	586513.3	4475621.2	586442.0	4475609.8	586565.1	4475629.5	586291.7	4475585.7
192	-2.8	0.6	-1.7	2.0	-1.4	-6.5	192	586516.9	4475591.4	586443.0	4475579.6	586572.2	4475600.2	586290.3	4475555.1
193	-2.9	0.6	-1.7	2.0	-1.4	-6.6	193	586520.3	4475561.5	586443.3	4475549.2	586577.8	4475570.8	586290.7	4475524.8
194	-2.9	0.7	-1.7	2.1	-1.4	-6.8	194	586524.4	4475531.8	586447.7	4475519.5	586584.9	4475541.5	586290.1	4475494.3
195	-2.9	0.7	-1.7	2.1	-1.5	-6.9	195	586528.8	4475502.1	586451.9	4475489.8	586591.5	4475512.2	586291.3	4475464.1
196	-2.9	0.7	-1.8	2.1	-1.5	-6.9	196	586533.1	4475472.4	586456.3	4475460.1	586595.9	4475482.5	586295.3	4475434.4
197	-2.8	0.7	-1.8	2.1	-1.5	-7.0	197	586536.1	4475442.5	586460.7	4475430.5	586598.8	4475452.6	586296.6	4475404.2
198	-2.7	0.7	-1.8	2.1	-1.5	-7.0	198	586537.8	4475412.4	586465.5	4475400.9	586600.9	4475422.6	586297.8	4475374.0
199	-2.6	0.7	-1.8	2.0	-1.6	-7.1	199	586539.3	4475382.3	586470.9	4475371.3	586602.2	4475392.4	586293.5	4475342.9
200	-2.4	0.7	-1.9	1.9	-1.7	-7.3	200	586541.2	4475352.2	586477.4	4475342.0	586604.9	4475362.4	586288.1	4475311.7
201	-2.2	0.7	-1.9	1.8	-1.8	-7.4	201	586544.1	4475322.3	586484.5	4475312.7	586605.9	4475332.2	586283.6	4475280.6
202	-2.1	0.6	-2.0	1.7	-2.0	-7.6	202	586548.1	4475292.6	586492.9	4475283.7	586606.5	4475301.9	586278.0	4475249.3
203	-1.9	0.6	-2.1	1.6	-2.1	-7.6	203	586552.8	4475262.9	586502.1	4475254.8	586605.0	4475271.3	586273.7	4475218.2
204	-1.8	0.5	-2.1	1.4	-2.2	-7.7	204	586558.4	4475233.4	586510.4	4475225.8	586603.1	4475240.6	586268.3	4475187.0
205	-1.7	0.4	-2.2	1.3	-2.3	-7.8	205	586564.1	4475204.0	586519.9	4475196.9	586603.5	4475210.3	586265.6	4475156.2
206	-1.6	0.4	-2.3	1.2	-2.5	-7.9	206	586570.0	4475174.5	586528.3	4475167.9	586604.1	4475180.0	586260.4	4475124.9
207	-1.4	0.3	-2.4	1.0	-2.6	-8.1	207	586575.9	4475145.1	586537.9	4475139.0	586605.3	4475149.8	586255.4	4475093.8
208	-1.4	0.3	-2.4	1.0	-2.6	-8.1	208	586581.1	4475115.6	586542.8	4475109.4	586606.7	4475119.7	586253.1	4475063.0
209	-1.8	0.2	-2.5	1.1	-2.6	-8.2	209	586586.7	4475086.1	586538.9	4475078.4	586608.6	4475089.6	586251.9	4475032.4
210	-2.0	0.2	-2.5	1.1	-2.6	-8.2	210	586590.5	4475056.3	586536.5	4475047.6	586610.1	4475059.4	586253.2	4475002.3
211	-2.1	0.2	-2.5	1.1	-2.6	-8.2	211	586591.3	4475026.0	586535.3	4475017.1	586610.8	4475029.2	586255.6	4474972.3
212	-1.9	0.3	-2.4	1.1	-2.5	-8.1	212	586585.9	4474994.8	586535.1	4474986.7	586609.3	4474998.5	586259.0	4474942.4

Table B-1. High-Water Shoreline Position Change - Sandy Hook to Barnegat Inlet, New Jersey

	High-Water Shoreline Position Change Rate (m/yr)						High-Water Shoreline Position (UTM Zone 18, NAD 1983)							
	1836/39 to			1855/75 to		1932/33 to	1836/39		1855/75		1932/33		1977	
Transect #	1855/75	1932/33	1977	1932/33	1977	1977	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)
213	-1.6	0.3	-2.3	1.0	-2.5	-7.9	586579.7	4474963.4	586536.3	4474956.5	586604.1	4474967.3	586263.1	4474912.7
214	-1.2	0.3	-2.2	0.9	-2.5	-7.6	586570.7	4474931.6	586538.4	4474926.4	586598.0	4474936.0	586268.5	4474883.2
215	-0.9	0.3	-2.2	0.7	-2.5	-7.3	586566.0	4474900.5	586542.3	4474896.7	586591.0	4474904.5	586272.0	4474853.4
216	-0.5	0.2	-2.1	0.5	-2.5	-7.0	586560.2	4474869.1	586547.1	4474867.0	586581.8	4474872.6	586277.8	4474823.9
217	-0.1	0.2	-2.0	0.4	-2.4	-6.7	586556.4	4474838.1	586552.6	4474837.5	586576.2	4474841.3	586284.7	4474794.6
218	0.2	0.2	-1.9	0.2	-2.4	-6.4	586552.3	4474807.1	586556.3	4474807.8	586571.9	4474810.3	586295.5	4474766.0
219	0.4	0.2	-1.7	0.2	-2.3	-5.9	586547.8	4474776.0	586559.2	4474777.8	586569.1	4474779.4	586311.0	4474738.1
220	0.6	0.2	-1.6	0.1	-2.1	-5.5	586544.0	4474745.0	586561.0	4474747.7	586565.8	4474748.5	586328.8	4474710.5
221	0.8		-1.4		-1.9		586541.1	4474714.2	586561.6	4474717.5			586349.4	4474683.5
222	1.0		-1.2		-1.8		586536.9	4474683.1	586563.8	4474687.4			586372.6	4474656.8
223	1.3						586530.3	4474651.7	586565.6	4474657.3				
224	1.7						586521.8	4474619.9	586566.2	4474627.1				
225	1.9	1.1		0.8			586516.3	4474588.7	586566.9	4474596.8	586617.9	4474604.9		
226	2.1	1.1		0.7			586512.8	4474557.7	586567.7	4474566.5	586611.8	4474573.6		
227	2.3	1.0		0.5			586507.6	4474526.5	586568.3	4474536.2	586603.7	4474541.9		
228	2.5	1.0		0.4			586502.3	4474495.3	586568.7	4474505.9	586596.5	4474510.4		
229	2.7	1.0		0.3			586497.9	4474464.2	586570.5	4474475.8	586591.3	4474479.2		
230	3.0	1.0		0.2			586494.6	4474433.3	586573.8	4474446.0	586586.2	4474448.0		
231	3.2	1.0		0.0			586492.9	4474402.6	586578.5	4474416.3	586581.0	4474416.7		
232	3.3	0.9		-0.1			586495.3	4474372.6	586584.2	4474386.9	586576.9	4474385.7		
233	3.4	0.8		-0.2			586495.7	4474342.3	586587.3	4474357.0	586573.2	4474354.7		
234	3.6	0.8	0.5	-0.4	-0.3	-0.2	586495.6	4474311.9	586591.6	4474327.3	586568.2	4474323.5	586561.5	4474322.5
235	3.9	0.8	0.5	-0.5	-0.3	-0.0	586493.8	4474281.2	586598.1	4474298.0	586564.9	4474292.6	586564.0	4474292.5
236	4.1	0.7	0.6	-0.6	-0.3	0.2	586493.2	4474250.8	586602.0	4474268.2	586561.5	4474261.7	586568.4	4474262.8
237	4.1	0.7	0.6	-0.7	-0.3	0.4	586495.7	4474220.8	586606.1	4474238.5	586560.0	4474231.1	586576.3	4474233.7
238	4.3	0.7	0.7	-0.7	-0.2	0.6	586496.3	4474190.5	586609.6	4474208.6	586560.7	4474200.8	586585.8	4474204.8
239	4.4	0.7		-0.8			586496.6	4474160.2	586613.6	4474178.9	586562.4	4474170.7		
240	4.7	0.7	1.0	-0.9	0.1	1.6	586494.7	4474129.5	586618.6	4474149.3	586562.7	4474140.4	586630.8	4474151.3
241	4.9	0.7	1.0	-1.0	0.0	1.6	586494.1	4474099.0	586624.8	4474119.9	586561.5	4474109.8	586628.6	4474120.5
242	5.2	0.8	1.0	-1.0	-0.1	1.4	586494.1	4474068.6	586632.4	4474090.8	586564.0	4474079.8	586625.3	4474089.6
243	5.4	0.8	0.9	-1.1	-0.2	1.3	586496.6	4474038.6	586641.1	4474061.8	586567.1	4474049.9	586624.0	4474059.0
244	5.7	0.8	0.9	-1.2	-0.3	1.2	586497.6	4474008.4	586650.4	4474032.9	586571.4	4474020.2	586622.3	4474028.4
245	5.9	0.8	0.9	-1.2	-0.3	1.0	586500.7	4473978.5	586658.4	4474003.8	586578.4	4473991.0	586622.9	4473998.1
246	6.2	0.9	0.9	-1.2	-0.4	0.9	586504.6	4473948.8	586669.1	4473975.1	586587.9	4473962.1	586625.2	4473968.1
247	6.6	1.0	0.9	-1.3	-0.5	0.7	586509.0	4473919.1	586683.6	4473947.1	586597.1	4473933.2	586629.0	4473938.3
248	7.0	1.0	0.9	-1.4	-0.6	0.7	586513.7	4473889.5	586700.1	4473919.3	586606.4	4473904.3	586635.0	4473908.9
249	7.4	1.0	0.9	-1.5	-0.7	0.7	586518.0	4473859.8	586714.5	4473891.2	586614.5	4473875.2	586643.2	4473879.8
250	7.8	1.1	1.1	-1.7	-0.6	1.1	586522.0	4473830.0	586730.3	4473863.4	586621.0	4473845.9	586667.5	4473853.3
251	8.2	1.1	1.1	-1.7	-0.6	1.0	586525.7	4473800.2	586743.4	4473835.1	586631.1	4473817.1	586673.0	4473823.8
252	8.4	1.2	1.0	-1.7	-0.8	0.7	586529.7	4473770.5	586753.4	4473806.3	586642.7	4473788.6	586670.8	4473793.1
253	8.6	1.3	1.1	-1.7	-0.8	0.5	586533.5	4473740.7	586763.9	4473777.6	586654.9	4473760.2	586676.0	4473763.5
254	8.9	1.4	1.0	-1.6	-0.9	0.2	586537.1	4473710.9	586774.1	4473748.9	586669.3	4473732.1	586676.3	4473733.2
255	9.1	1.5	1.0	-1.5	-1.0	-0.2	586540.7	4473681.1	586783.1	4473719.9	586683.9	4473704.0	586677.0	4473702.9
256	9.2	1.6		-1.4			586545.4	4473651.5	586790.5	4473690.7	586696.2	4473675.6		
257	9.3	1.7		-1.4			586550.4	4473621.9	586798.0	4473661.6	586707.4	4473647.0		
258	9.5	1.8		-1.4			586553.6	4473592.0	586807.8	4473632.7	586716.5	4473618.1		
259	9.9	1.8		-1.4			586555.5	4473562.0	586818.2	4473604.0	586722.9	4473588.8		
260	10.2	1.8		-1.5			586557.1	4473531.8	586827.9	4473575.2	586726.8	4473559.0		
261	10.4	1.9		-1.6			586557.8	4473501.5	586834.5	4473545.9	586730.7	4473529.2		
262	10.8	1.9		-1.7			586558.3	4473471.3	586846.6	4473517.4	586734.5	4473499.5		
263	11.3	2.0	1.8	-1.8	-0.5	1.4	586558.2	4473440.9	586859.1	4473489.0	586739.6	4473469.9	586800.4	4473479.6
264	11.7	2.0	1.7	-1.9	-0.7	1.1	586558.5	4473410.5	586870.2	4473460.4	586742.8	4473440.0	586792.5	4473448.0
265	12.1	2.0	1.7	-2.1	-0.9	1.0	586559.4	4473380.3	586881.6	4473431.9	586743.7	4473409.8	586787.4	4473416.8

Table B-1. High-Water Shoreline Position Change - Sandy Hook to Barnegat Inlet, New Jersey

	High-Water Shoreline Position Change Rate (m/yr)						High-Water Shoreline Position (UTM Zone 18, NAD 1983)							
	1836/39 to			1855/75 to		1932/33 to	1836/39		1855/75		1932/33		1977	
Transect #	1855/75	1932/33	1977	1932/33	1977	1977	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)
266	12.5	2.0	1.7	-2.3	-1.0	1.0	586559.8	4473350.0	586893.5	4473403.4	586742.7	4473379.3	586785.2	4473386.1
267	12.9	2.0	1.6	-2.4	-1.1	0.9	586559.0	4473319.4	586903.4	4473374.6	586741.8	4473348.7	586781.9	4473355.2
268	13.8	2.0	1.6	-2.8	-1.3	0.8	586557.7	4473288.9	586924.8	4473347.7	586742.1	4473318.4	586778.4	4473324.2
269	14.3	2.0	1.6	-3.0	-1.5	0.8	586558.3	4473258.6	586939.7	4473319.7	586743.9	4473288.3	586778.9	4473293.9
270	14.6	2.0	1.6	-3.0	-1.5	0.8	586557.4	4473228.0	586946.7	4473290.4	586747.0	4473258.4	586779.8	4473263.7
271	14.6	2.1	1.7	-3.0	-1.5	0.8	586557.6	4473197.7	586947.5	4473260.1	586752.3	4473228.9	586784.7	4473234.1
272	14.9	2.1	1.8	-3.0	-1.4	0.9	586556.3	4473167.1	586952.5	4473230.6	586755.3	4473199.0	586794.7	4473205.3
273	15.4	2.3	2.1	-3.0	-1.1	1.8	586546.5	4473135.2	586956.8	4473200.9	586756.1	4473168.7	586835.4	4473181.4
274	16.1	2.4	2.2	-3.1	-1.2	1.7	586531.7	4473102.4	586959.9	4473171.0	586757.0	4473138.5	586829.7	4473150.1
275	16.5	2.5	2.2	-3.1	-1.3	1.4	586523.9	4473070.8	586962.8	4473141.1	586758.9	4473108.4	586821.2	4473118.4
276	16.9	2.6	2.2	-3.1	-1.4	1.2	586517.1	4473039.3	586968.1	4473111.5	586760.3	4473078.3	586813.6	4473086.8
277	17.5	2.7	2.2	-3.2	-1.5	1.1	586510.3	4473007.8	586975.9	4473082.4	586762.5	4473048.2	586808.9	4473055.6
278	17.9	2.8	2.2	-3.3	-1.6	0.9	586503.1	4472976.3	586980.8	4473052.8	586764.2	4473018.1	586801.8	4473024.1
279	18.3	2.9	2.2	-3.3	-1.7	0.8	586495.6	4472944.7	586982.5	4473022.7	586766.7	4472988.1	586799.9	4472993.4
280	18.8	3.1	2.3	-3.2	-1.7	0.6	586482.2	4472912.2	586982.0	4472992.2	586771.4	4472958.5	586797.9	4472962.8
281	19.0	3.3	2.4	-3.1	-1.7	0.6	586474.9	4472880.6	586981.3	4472961.7	586776.9	4472929.0	586800.7	4472932.8
282	19.4	3.4	2.5	-3.0	-1.6	0.4	586465.3	4472848.7	586982.0	4472931.5	586783.9	4472899.7	586803.0	4472902.8
283	19.8	3.7	2.6	-2.8	-1.6	0.3	586452.7	4472816.3	586980.8	4472900.9	586797.2	4472871.5	586810.9	4472873.7
284	20.2	4.0	2.8	-2.5	-1.5	0.2	586442.7	4472784.3	586980.6	4472870.5	586813.3	4472843.7	586819.9	4472844.7
285	20.5	4.3	2.9	-2.3	-1.4	0.0	586436.0	4472752.9	586982.5	4472840.4	586830.6	4472816.1	586831.4	4472816.2
286	20.8	4.5		-2.1			586428.8	4472721.3	586983.0	4472810.1	586842.5	4472787.6		
287	20.9	4.6	3.5	-2.0	-0.7	1.2	586423.4	4472690.1	586981.3	4472779.4	586849.7	4472758.4	586902.2	4472766.8
288	20.9	4.7	3.5	-1.8	-0.7	1.0	586419.1	4472659.0	586977.1	4472748.4	586855.4	4472728.9	586898.5	4472735.8
289	20.9	4.7	3.6	-1.8	-0.7	1.0	586418.3	4472628.5	586976.4	4472717.9	586858.6	4472699.0	586902.5	4472706.1
290	20.9	4.8		-1.7			586421.4	4472598.6	586977.8	4472687.7	586864.4	4472669.6		
291	20.8	4.8	3.5	-1.7	-0.7	0.7	586423.7	4472568.6	586978.6	4472657.5	586868.7	4472639.9	586898.3	4472644.6
292	20.6	4.8	3.4	-1.6	-0.8	0.4	586427.4	4472538.8	586976.1	4472626.7	586873.6	4472610.3	586892.2	4472613.3
293	20.3	4.8	3.3	-1.4	-0.8	0.1	586432.7	4472509.3	586974.3	4472596.0	586880.0	4472580.9	586882.8	4472581.4
294	20.1	4.8	3.2	-1.3	-0.9	-0.3	586439.4	4472480.0	586975.5	4472565.8	586887.4	4472551.7	586876.4	4472550.0
295	19.8	4.8	3.2	-1.3	-0.9	-0.3	586447.9	4472451.0	586975.5	4472535.5	586892.0	4472522.1	586878.7	4472519.9
296	19.3	4.7	3.1	-1.2	-0.8	-0.3	586459.4	4472422.4	586974.8	4472505.0	586895.7	4472492.3	586883.3	4472490.3
297	19.1	4.7	3.1	-1.2	-0.8	-0.2	586467.2	4472393.3	586975.0	4472474.6	586899.3	4472462.5	586889.2	4472460.9
298				-1.0					586977.4	4472444.6	586908.5	4472433.6		
299					-0.6				586985.6	4472415.6			586919.9	4472405.0
300				-1.0	-0.7	-0.3			586993.9	4472386.5	586925.8	4472375.6	586915.0	4472373.9
301				-1.2	-0.9	-0.3			587004.3	4472357.8	586922.1	4472344.6	586911.4	4472342.9
302	-1.8	-1.4	-1.1	-1.2	-0.9	-0.4	587057.4	4472335.9	587008.7	4472328.1	586928.6	4472315.3	586909.3	4472312.2
303	-1.8	-1.4	-1.1	-1.2	-0.9	-0.4	587057.6	4472305.5	587010.1	4472297.9	586931.2	4472285.3	586912.0	4472282.2
304	-1.7	-1.4	-1.1	-1.3	-0.9	-0.4	587060.8	4472275.7	587016.5	4472268.6	586931.7	4472255.0	586916.2	4472252.5
305	-1.6	-1.4	-1.1	-1.3	-0.9	-0.3	587062.2	4472245.5	587019.9	4472238.7	586933.0	4472224.8	586919.3	4472222.6
306	-1.7		-1.1		-0.9		587071.3	4472216.6	587025.5	4472209.3			586922.3	4472192.7
307	-1.8		-1.1		-1.0		587081.0	4472187.8	587034.0	4472180.2			586927.4	4472163.2
308	-1.5	-1.4	-1.2	-1.4	-1.1	-0.6	587088.7	4472158.6	587047.9	4472152.1	586956.6	4472137.5	586931.4	4472133.4
309	-1.2	-1.5	-1.2	-1.6	-1.2	-0.6	587095.3	4472129.3	587062.7	4472124.1	586957.5	4472107.2	586933.8	4472103.4
310	-1.4	-1.6	-1.2	-1.6	-1.2	-0.5	587102.6	4472100.1	587064.9	4472094.0	586959.0	4472077.1	586936.8	4472073.5
311	-1.7		-1.3		-1.2		587110.6	4472071.0	587066.7	4472063.9			586940.2	4472043.7
312	-2.0	-1.6	-1.3	-1.5	-1.2	-0.7	587123.2	4472042.6	587069.0	4472033.9	586973.2	4472018.6	586943.1	4472013.8
313	-2.2	-1.8	-1.4	-1.6	-1.2	-0.5	587132.7	4472013.8	587073.5	4472004.3	586969.0	4471987.5	586946.2	4471983.9
314	-2.2	-1.8	-1.4	-1.7	-1.2	-0.4	587136.2	4471983.9	587078.1	4471974.6	586968.1	4471957.0	586949.7	4471954.1
315	-2.4	-1.8	-1.4	-1.5	-1.2	-0.6	587141.8	4471954.4	587078.6	4471944.3	586977.8	4471928.2	586953.0	4471924.2
316	-2.5	-1.8	-1.4	-1.5	-1.1	-0.5	587144.4	4471924.5	587078.2	4471913.9	586976.5	4471897.6	586957.2	4471894.5
317	-2.3	-1.8	-1.3	-1.5	-1.1	-0.4	587140.8	4471893.5	587079.6	4471883.7	586978.4	4471867.5	586959.5	4471864.5
318	-2.3	-1.6	-1.2	-1.2	-1.0	-0.6	587137.9	4471862.7	587076.3	4471852.8	586994.3	4471839.7	586969.6	4471835.7

Table B-1. High-Water Shoreline Position Change - Sandy Hook to Barnegat Inlet, New Jersey

	High-Water Shoreline Position Change Rate (m/yr)					
	1836/39 to			1855/75 to		1932/33 to
Transect #	1855/75	1932/33	1977	1932/33	1977	1977
319	-2.4	-1.5	-1.1	-1.2	-0.7	-0.1
320	-2.5	-1.6	-1.1	-1.2	-0.7	-0.1
321	-2.6		-1.1		-0.8	
322	-2.7	-1.6	-1.2	-1.2	-0.8	-0.3
323	-3.0	-1.7	-1.2	-1.2	-0.8	-0.2
324	-3.3					
325	-3.6	-1.8	-1.2	-1.0	-0.6	0.0
326	-4.2	-1.9	-1.3	-1.0	-0.6	-0.1
327	-4.5		-1.4		-0.7	
328	-4.6	-1.9	-1.5	-0.8	-0.7	-0.5
329	-4.0	-1.8	-1.4	-0.9	-0.7	-0.5
330	-3.4		-1.3		-0.8	
331	-2.9	-1.5	-1.2	-1.0	-0.8	-0.6
332	-2.5	-1.5	-1.2	-1.1	-0.9	-0.6
333	-2.5		-1.2		-0.9	
334	-2.5	-1.4	-1.2	-1.0	-0.9	-0.7
335	-2.3	-1.5	-1.2	-1.1	-0.9	-0.6
336	-2.2	-1.4	-1.2	-1.1	-0.9	-0.6
337	-2.0	-1.3	-1.2	-1.1	-0.9	-0.8
338	-1.8	-1.4	-1.1	-1.2	-1.0	-0.7
339	-1.7	-1.4	-1.1	-1.2	-1.0	-0.7
340	-1.7	-1.3	-1.2	-1.2	-1.0	-0.8
341	-1.7	-1.4	-1.2	-1.2	-1.0	-0.8
342	-1.7	-1.4	-1.2	-1.2	-1.0	-0.8
343	-1.6	-1.3	-1.1	-1.2	-1.0	-0.7
344	-1.5	-1.4	-1.1	-1.3	-1.0	-0.5
345	-1.5		-1.1		-1.0	
346	-1.4	-1.2	-1.0	-1.1	-1.0	-0.8
347	-1.3	-1.2	-1.0	-1.2	-1.0	-0.6
348	-1.4	-1.3	-1.0	-1.2	-1.0	-0.5
349	-1.6	-1.2	-1.1	-1.0	-0.9	-0.8
350	-1.8	-1.3	-1.1	-1.1	-0.9	-0.7
351	-1.8		-1.1		-0.9	
352	-1.8	-1.3	-1.1	-1.1	-1.0	-0.8
353	-2.0	-1.4	-1.1	-1.1	-0.9	-0.6
354	-2.2		-1.2		-0.9	
355	-2.1	-1.4	-1.2	-1.1	-0.9	-0.7
356	-2.2	-1.5	-1.2	-1.1	-0.9	-0.6
357	-2.5		-1.3		-1.0	
358	-2.7		-1.3		-1.0	
359	-2.7		-1.3		-1.0	
360	-2.6		-1.3		-1.0	
361	-2.4		-1.3		-1.0	
362	-2.2		-1.2		-0.9	
363	-2.1		-0.9		-0.6	
364	-2.0		-1.0		-0.7	
365	-2.1		-1.0		-0.8	
366	-2.2		-1.1		-0.8	
367	-2.2		-1.1		-0.8	
368	-2.3		-1.1		-0.8	
369	-2.3		-1.1		-0.9	
370	-2.5		-1.2		-0.8	
371	-2.5		-1.2		-0.9	

	High-Water Shoreline Position (UTM Zone 18, NAD 1983)							
	1836/39		1855/75		1932/33		1977	
Transect #	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)
319	587133.9	4471831.7	587069.2	4471821.3	586991.0	4471808.8	586989.0	4471808.4
320	587132.0	4471801.0	587065.1	4471790.2	586987.5	4471777.8	586983.9	4471777.2
321	587135.3	4471771.1	587066.2	4471760.0			586979.5	4471746.2
322	587140.9	4471741.6	587069.1	4471730.1	586990.9	4471717.6	586978.1	4471715.6
323	587150.4	4471712.8	587071.5	4471700.1	586990.5	4471687.1	586982.5	4471685.9
324	587159.7	4471683.9	587072.9	4471670.0				
325	587167.6	4471654.7	587072.3	4471639.5	587003.5	4471628.5	587004.7	4471628.7
326	587180.8	4471626.5	587068.8	4471608.5	587002.7	4471598.0	587000.3	4471597.6
327	587186.5	4471597.0	587066.3	4471577.8			586990.4	4471565.6
328	587188.3	4471566.9	587065.2	4471547.2	587011.0	4471538.5	586988.4	4471534.9
329	587178.5	4471535.0	587071.1	4471517.8	587011.9	4471508.3	586992.2	4471505.1
330	587168.5	4471503.0	587077.5	4471488.4			586995.4	4471475.3
331	587164.1	4471471.9	587088.0	4471459.7	587025.5	4471449.7	586999.0	4471445.4
332	587162.9	4471441.3	587095.3	4471430.5	587025.4	4471419.3	587001.2	4471415.4
333	587165.3	4471411.3	587097.8	4471400.5			587005.0	4471385.6
334	587168.0	4471381.4	587102.7	4471370.9	587038.1	4471360.6	587009.8	4471356.0
335	587171.9	4471351.6	587109.7	4471341.6	587037.6	4471330.1	587013.2	4471326.2
336	587175.3	4471321.8	587117.0	4471312.4	587044.0	4471300.7	587016.3	4471296.3
337	587177.8	4471291.8	587123.7	4471283.1	587054.5	4471272.0	587020.6	4471266.6
338	587179.2	4471261.6	587130.3	4471253.8	587052.2	4471241.3	587024.0	4471236.8
339	587182.1	4471231.7	587135.6	4471224.3	587056.3	4471211.6	587026.2	4471206.7
340	587187.0	4471202.1	587140.7	4471194.7	587064.5	4471182.5	587028.2	4471176.7
341	587189.4	4471172.1	587143.9	4471164.8	587063.2	4471151.9	587029.9	4471146.6
342	587190.9	4471142.0	587145.6	4471134.7	587065.8	4471122.0	587032.9	4471116.7
343	587188.4	4471111.2	587145.6	4471104.4	587067.6	4471091.9	587037.0	4471087.0
344	587186.5	4471080.5	587146.8	4471074.2	587060.8	4471060.4	587038.8	4471056.9
345	587187.1	4471050.2	587147.3	4471043.8			587041.1	4471026.8
346	587184.6	4471019.4	587148.6	4471013.7	587076.8	4471002.2	587042.3	4470996.7
347	587185.7	4470989.2	587152.1	4470983.9	587071.9	4470971.0	587044.4	4470966.6
348	587188.9	4470959.4	587151.3	4470953.3	587069.0	4470940.2	587047.6	4470936.7
349	587193.4	4470929.7	587150.0	4470922.8	587083.4	4470912.1	587049.3	4470906.6
350	587199.6	4470900.3	587152.0	4470892.7	587079.9	4470881.1	587051.4	4470876.6
351	587202.6	4470870.4	587154.7	4470862.8			587053.2	4470846.5
352	587205.8	4470840.5	587158.6	4470833.0	587088.6	4470821.8	587055.0	4470816.4
353	587211.9	4470811.1	587157.5	4470802.4	587082.8	4470790.5	587058.0	4470786.5
354	587216.1	4470781.4	587158.7	4470772.2			587059.8	4470756.4
355	587217.8	4470751.3	587161.7	4470742.3	587090.1	4470730.9	587060.4	4470726.1
356	587224.4	4470722.0	587165.0	4470712.5	587090.2	4470700.5	587062.2	4470696.0
357	587234.8	4470693.3	587167.3	4470682.5			587062.5	4470665.7
358	587240.2	4470663.8	587169.5	4470652.4			587065.3	4470635.7
359	587242.6	4470633.8	587171.6	4470622.4			587066.4	4470605.5
360	587242.3	4470603.3	587174.2	4470592.4			587066.9	4470575.2
361	587241.0	4470572.7	587178.3	4470562.7			587069.7	4470545.3
362	587239.6	4470542.1	587180.7	4470532.7			587081.2	4470516.8
363	587237.7	4470511.5	587182.2	4470502.6			587117.3	4470492.2
364	587235.8	4470480.8	587181.8	4470472.1			587105.9	4470460.0
365	587237.9	4470450.7	587182.4	4470441.8			587098.1	4470428.3
366	587242.9	4470421.1	587184.4	4470411.8			587094.7	4470397.4
367	587242.1	4470390.6	587184.7	4470381.4			587092.4	4470366.7
368	587243.9	4470360.5	587181.6	4470350.6			587092.0	4470336.2
369	587246.2	4470330.5	587184.7	4470320.7			587091.8	4470305.8
370	587246.8	4470300.2	587180.7	4470289.6			587088.3	4470274.9
371	587247.5	4470270.0	587179.8	4470259.1			587086.1	4470244.1

Table B-1. High-Water Shoreline Position Change - Sandy Hook to Barnegat Inlet, New Jersey

	High-Water Shoreline Position Change Rate (m/yr)						High-Water Shoreline Position (UTM Zone 18, NAD 1983)									
	1836/39 to			1855/75 to		1932/33 to	1836/39		1855/75		1932/33		1977			
Transect #	1855/75	1932/33	1977	1932/33	1977	1977	Transect #	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)
372	-2.5		-1.2		-0.9		372	587248.2	4470239.7	587180.5	4470228.8			587086.9	4470213.9
373	-2.6		-1.2		-0.8		373	587247.8	4470209.2	587179.5	4470198.3			587088.6	4470183.8
374	-2.5		-1.2		-0.8		374	587247.3	4470178.8	587180.4	4470168.1			587090.2	4470153.6
375	-2.6		-1.2		-0.8		375	587248.5	4470148.6	587180.6	4470137.7			587091.7	4470123.5
376	-2.6		-1.2		-0.8		376	587251.0	4470118.6	587181.1	4470107.4			587094.4	4470093.5
377	-2.5		-1.2		-0.8		377	587252.0	4470088.4	587184.3	4470077.5			587095.9	4470063.4
378	-2.7		-1.2		-0.8		378	587253.9	4470058.3	587182.4	4470046.8			587097.3	4470033.2
379	-2.6		-1.1		-0.8		379	587254.9	4470028.1	587184.9	4470016.9			587099.1	4470003.1
380			-1.1				380	587254.7	4469997.7					587099.8	4469972.9
381	-1.2		-1.1		-1.1		381	587253.6	4469967.1	587222.9	4469962.2			587102.0	4469942.8
382	-1.1		-1.1		-1.1		382	587253.8	4469936.8	587224.9	4469932.1			587103.8	4469912.7
383	-1.0		-1.1		-1.1		383	587254.1	4469906.4	587226.8	4469902.1			587105.2	4469882.6
384	-1.0		-1.1		-1.1		384	587255.7	4469876.3	587228.2	4469871.9			587106.8	4469852.4
385	-1.0		-1.1		-1.1		385	587255.8	4469845.9	587229.6	4469841.7			587107.5	4469822.2
386	-0.7		-1.1		-1.2		386	587254.3	4469815.3	587234.8	4469812.2			587108.3	4469791.9
387	-0.6		-1.1		-1.2		387	587255.0	4469785.0	587238.7	4469782.4			587107.7	4469761.4
388	-0.6		-1.1		-1.2		388	587258.3	4469755.2	587242.0	4469752.6			587109.1	4469731.3
389	-0.6		-1.1		-1.3		389	587261.6	4469725.3	587246.6	4469722.9			587110.0	4469701.1
390	-0.6		-1.1		-1.3		390	587265.7	4469695.6	587250.0	4469693.1			587110.7	4469670.8
391	-0.4		-1.1		-1.3		391	587266.1	4469665.3	587256.5	4469663.8			587112.2	4469640.6
392	-0.2		-1.1		-1.3		392	587267.4	4469635.1	587263.1	4469634.4			587123.0	4469612.0
393	-0.0						393	587269.0	4469605.0	587268.7	4469605.0				
394	0.2		-0.5		-0.6		394	587270.7	4469574.9	587274.6	4469575.5			587207.9	4469564.8
395	0.1		-0.6		-0.8		395	587273.4	4469544.9	587276.1	4469545.4			587192.0	4469531.9
396	0.1		-0.7		-0.9		396	587275.1	4469514.8	587277.3	4469515.2			587184.6	4469500.3
397	0.0		-0.7		-0.9		397	587277.6	4469484.8	587278.6	4469485.0			587181.4	4469469.4
398	-0.0		-0.8		-1.0		398	587282.0	4469455.2	587281.9	4469455.1			587176.2	4469438.2
399	-0.1		-0.8		-1.0		399	587287.0	4469425.6	587284.4	4469425.2			587172.9	4469407.3
400	-0.2		-0.9		-1.1		400	587289.6	4469395.6	587284.8	4469394.8			587167.9	4469376.1
401	-0.2		-0.9		-1.1		401	587291.3	4469365.5	587285.7	4469364.6			587165.2	4469345.3
402	-0.2		-1.0		-1.1		402	587292.9	4469335.4	587286.9	4469334.4			587161.7	4469314.4
403	-0.4		-1.0		-1.2		403	587300.0	4469306.1	587289.6	4469304.5			587160.7	4469283.8
404	-0.4		-1.1		-1.2		404	587303.7	4469276.3	587293.6	4469274.7			587160.4	4469253.4
405	-0.5		-1.1		-1.2		405	587307.2	4469246.5	587294.6	4469244.5			587162.9	4469223.4
406	-0.7						406	587313.2	4469217.1	587295.7	4469214.3				
407	-0.9		-1.0		-1.0		407	587319.8	4469187.8	587296.5	4469184.1			587182.6	4469165.8
408	-1.0		-1.0		-1.1		408	587323.9	4469158.0	587297.8	4469153.9			587183.0	4469135.5
409	-0.9		-1.0		-1.1		409	587325.5	4469127.9	587301.0	4469124.0			587183.4	4469105.2
410	-1.0		-1.1		-1.1		410	587329.7	4469098.2	587304.3	4469094.1			587186.2	4469075.2
411	-0.9		-1.1		-1.2		411	587333.1	4469068.4	587309.8	4469064.6			587181.3	4469044.1
412	-0.9		-1.1		-1.2		412	587334.7	4469038.2	587311.7	4469034.6			587180.0	4469013.5
413	-0.6		-1.1		-1.2		413	587334.2	4469007.8	587317.1	4469005.1			587187.0	4468984.2
414	-0.6						414	587335.2	4468977.6	587318.5	4468974.9				
415	-0.6						415	587337.7	4468947.6	587321.1	4468944.9				
416	-0.6		-0.7		-0.7		416	587339.0	4468917.4	587322.4	4468914.7			587249.9	4468903.1
417	-0.7	-1.1	-0.7	-1.2	-0.7	0.1	417	587340.2	4468887.2	587322.0	4468884.3	587240.3	4468871.2	587244.4	4468871.9
418	-0.6	-1.1	-0.7	-1.3	-0.8	0.1	418	587341.6	4468857.1	587324.5	4468854.3	587236.6	4468840.2	587241.1	4468841.0
419	-0.5	-1.2	-0.7	-1.4	-0.8	0.2	419	587339.8	4468826.4	587326.8	4468824.3	587231.7	4468809.1	587238.4	4468810.2
420	-0.4	-1.2	-0.8	-1.5	-0.9	0.2	420	587337.9	4468795.7	587328.7	4468794.2	587229.1	4468778.3	587235.6	4468779.3
421	-0.2	-1.2	-0.7	-1.6	-0.9	0.2	421	587335.9	4468765.0	587331.7	4468764.3	587227.2	4468747.6	587235.7	4468748.9
422	-0.1	-1.2	-0.7	-1.6	-0.9	0.3	422	587336.3	4468734.7	587333.2	4468734.2	587226.3	4468717.1	587237.1	4468718.8
423	-0.1	-1.2	-0.7	-1.6	-0.8	0.4	423	587338.0	4468704.6	587335.1	4468704.1	587229.7	4468687.2	587245.0	4468689.7
424	-0.2						424	587338.8	4468674.3	587334.7	4468673.7				

Table B-1. High-Water Shoreline Position Change - Sandy Hook to Barnegat Inlet, New Jersey

	High-Water Shoreline Position Change Rate (m/yr)						High-Water Shoreline Position (UTM Zone 18, NAD 1983)									
	1836/39 to			1855/75 to		1932/33 to	1836/39		1855/75		1932/33		1977			
Transect #	1855/75	1932/33	1977	1932/33	1977	1977	Transect #	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)
425	-0.1	-0.8	-0.6	-1.0	-0.7	-0.2	425	587336.9	4468643.6	587334.5	4468643.2	587267.1	4468632.4	587256.8	4468630.8
426	-0.1	-1.0	-0.6	-1.3	-0.8	0.1	426	587337.7	4468613.4	587334.6	4468612.9	587249.4	4468599.2	587252.0	4468599.6
427	-0.2	-1.0	-0.7	-1.3	-0.8	0.2	427	587340.2	4468583.4	587334.1	4468582.4	587245.3	4468568.2	587251.9	4468569.2
428	-0.5	-1.1	-0.7	-1.4	-0.8	0.2	428	587346.9	4468554.1	587332.9	4468551.8	587243.1	4468537.5	587250.6	4468538.7
429	-0.5	-1.0	-0.6	-1.3	-0.7	0.2	429	587343.5	4468523.2	587331.6	4468521.3	587247.6	4468507.8	587257.3	4468509.3
430	-0.5						430	587344.3	4468492.9	587329.8	4468490.6				
431	-0.6		-0.5		-0.4		431	587344.7	4468462.6	587327.9	4468459.9			587283.7	4468452.8
432	-0.6	-1.1	-0.5	-1.3	-0.5	0.8	432	587346.0	4468432.4	587329.9	4468429.8	587245.9	4468416.4	587278.9	4468421.7
433	-0.6	-1.2	-0.6	-1.4	-0.5	0.8	433	587348.7	4468402.5	587332.5	4468399.9	587238.9	4468384.9	587273.0	4468390.3
434	-0.6	-1.2	-0.6	-1.5	-0.6	0.7	434	587348.8	4468372.1	587332.8	4468369.5	587235.0	4468353.9	587266.6	4468358.9
435	-0.6	-1.3	-0.6	-1.6	-0.6	0.9	435	587347.6	4468341.5	587332.4	4468339.1	587224.2	4468321.8	587262.5	4468327.9
436	-0.6	-1.4	-0.7	-1.8	-0.7	1.0	436	587347.6	4468311.1	587331.9	4468308.6	587214.8	4468289.9	587257.8	4468296.7
437	-0.6	-1.5	-0.7	-1.8	-0.7	1.0	437	587346.9	4468280.7	587332.4	4468278.3	587211.5	4468259.0	587255.3	4468266.0
438	-0.6	-1.4	-0.6	-1.7	-0.7	1.0	438	587345.3	4468250.0	587330.5	4468247.6	587215.6	4468229.2	587259.0	4468236.2
439	-0.7	-1.2	-0.6	-1.4	-0.6	0.6	439	587346.3	4468219.8	587328.4	4468216.9	587239.2	4468202.6	587266.9	4468207.1
440	-0.7	-1.0	-0.4	-1.1	-0.3	0.8	440	587345.0	4468189.2	587325.8	4468186.1	587256.3	4468175.0	587290.1	4468180.4
441	-0.9	-0.8	-0.5	-0.8	-0.4	0.1	441	587344.4	4468158.7	587321.9	4468155.1	587271.5	4468147.0	587274.9	4468147.6
442	-1.0	-0.8	-0.6	-0.7	-0.5	-0.2	442	587345.8	4468128.6	587319.6	4468124.4	587275.9	4468117.4	587268.1	4468116.1
443	-0.9	-0.8	-0.6	-0.8	-0.5	-0.1	443	587342.8	4468097.7	587317.9	4468093.7	587268.3	4468085.8	587265.0	4468085.2
444	-0.9	-0.9	-0.6	-0.9	-0.5	-0.0	444	587340.2	4468066.9	587317.7	4468063.3	587259.6	4468054.0	587258.5	4468053.8
445	-0.8	-0.9	-0.6	-0.9	-0.6	-0.1	445	587341.4	4468036.7	587319.5	4468033.2	587260.6	4468023.8	587256.0	4468023.0
446	-0.8	-0.9	-0.7	-0.9	-0.6	-0.2	446	587344.5	4468006.8	587322.5	4468003.3	587263.1	4467993.8	587255.4	4467992.5
447	-0.9	-0.9	-0.7	-0.9	-0.6	-0.3	447	587347.3	4467976.9	587324.1	4467973.2	587266.2	4467963.9	587255.0	4467962.1
448	-1.0	-0.9	-0.7	-0.8	-0.6	-0.3	448	587349.8	4467946.9	587323.8	4467942.7	587268.6	4467933.9	587254.3	4467931.6
449	-1.1	-0.9	-0.7	-0.8	-0.7	-0.4	449	587351.6	4467916.8	587323.6	4467912.3	587269.6	4467903.7	587250.9	4467900.7
450	-1.1	-0.9	-0.8	-0.8	-0.7	-0.5	450	587353.5	4467886.7	587323.9	4467882.0	587271.6	4467873.6	587249.1	4467870.0
451	-1.1	-0.9	-0.8	-0.8	-0.7	-0.5	451	587352.5	4467856.2	587322.2	4467851.3	587272.4	4467843.4	587250.2	4467839.8
452	-1.1	-0.9	-0.7	-0.8	-0.6	-0.3	452	587349.6	4467825.3	587319.2	4467820.5	587265.1	4467811.8	587251.4	4467809.6
453	-1.1	-0.9	-0.7	-0.8	-0.6	-0.3	453	587344.1	4467794.1	587316.0	4467789.6	587263.1	4467781.1	587250.1	4467779.0
454	-1.2	-0.9	-0.7	-0.7	-0.6	-0.3	454	587343.5	4467763.6	587312.4	4467758.6	587263.3	4467750.7	587250.1	4467748.6
455	-1.0	-0.9	-0.7	-0.8	-0.6	-0.3	455	587340.5	4467732.7	587313.5	4467728.4	587261.7	4467720.1	587250.0	4467718.2
456	-1.1	-0.9	-0.7	-0.8	-0.6	-0.3	456	587341.2	4467702.5	587312.7	4467697.9	587262.6	4467689.9	587250.9	4467688.0
457	-1.2	-0.8		-0.7			457	587342.7	4467672.3	587311.4	4467667.3	587265.8	4467660.0		
458	-1.3	-0.8	-0.4	-0.6	-0.1	0.6	458	587344.7	4467642.3	587310.2	4467636.7	587269.7	4467630.3	587297.2	4467634.6
459	-1.3	-0.9	-0.4	-0.7	-0.2	0.6	459	587345.8	4467612.1	587310.9	4467606.5	587262.8	4467598.8	587289.6	4467603.0
460	-1.4	-0.9	-0.5	-0.7	-0.3	0.4	460	587348.0	4467582.0	587310.0	4467575.9	587263.3	4467568.5	587281.0	4467571.3
461	-1.6	-1.0	-0.6	-0.7	-0.3	0.3	461	587351.2	4467552.2	587307.4	4467545.1	587262.4	4467537.9	587273.6	4467539.7
462	-1.8	-1.0	-0.6	-0.6	-0.3	0.2	462	587351.6	4467521.8	587304.9	4467514.4	587262.4	4467507.6	587271.5	4467509.0
463	-1.8	-1.0	-0.6	-0.6	-0.3	0.2	463	587351.9	4467491.5	587303.1	4467483.7	587261.3	4467477.0	587270.9	4467478.5
464	-2.0	-1.1	-0.7	-0.7	-0.3	0.1	464	587356.7	4467461.9	587302.5	4467453.2	587259.7	4467446.4	587265.5	4467447.3
465	-2.1		-0.7		-0.4		465	587358.8	4467431.8	587302.1	4467422.8			587261.1	4467416.2
466	-2.0		-0.8		-0.5		466	587355.8	4467401.0	587301.7	4467392.3			587250.3	4467384.1
467	-2.1	-1.1	-0.8	-0.7	-0.5	-0.1	467	587355.5	4467370.6	587300.4	4467361.7	587254.3	4467354.3	587249.4	4467353.6
468	-2.1	-1.1	-0.8	-0.7	-0.5	-0.1	468	587355.8	4467340.2	587299.0	4467331.1	587254.5	4467324.0	587249.0	4467323.1
469	-2.2	-1.1	-0.8	-0.7	-0.5	-0.1	469	587355.5	4467309.8	587298.0	4467300.6	587254.7	4467293.6	587248.6	4467292.7
470	-2.1	-1.1	-0.8	-0.6	-0.5	-0.2	470	587354.2	4467279.2	587297.5	4467270.1	587256.3	4467263.5	587247.6	4467262.1
471	-2.0	-1.0	-0.8	-0.6	-0.5	-0.3	471	587352.5	4467248.5	587298.2	4467239.8	587260.6	4467233.8	587247.4	4467231.7
472	-1.9	-1.0	-0.8	-0.6	-0.5	-0.3	472	587349.6	4467217.7	587297.9	4467209.4	587261.8	4467203.6	587247.8	4467201.4
473	-1.8	-0.9	-0.7	-0.6	-0.5	-0.3	473	587345.9	4467186.7	587297.7	4467179.0	587258.4	4467172.7	587246.6	4467170.8
474	-1.8	-1.0	-0.7	-0.6	-0.5	-0.3	474	587344.1	4467156.0	587296.4	4467148.4	587256.0	4467141.9	587244.3	4467140.1
475	-1.9	-1.0	-0.8	-0.6	-0.5	-0.2	475	587346.4	4467126.0	587296.5	4467118.0	587254.2	4467111.3	587244.1	4467109.6
476	-1.8	-1.0	-0.8	-0.7	-0.5	-0.3	476	587345.0	4467095.4	587297.9	4467087.9	587252.5	4467080.6	587241.5	4467078.8
477	-1.9	-1.1	-0.7	-0.8	-0.4	0.2	477	587347.6	4467065.5	587298.2	4467057.5	587245.1	4467049.0	587253.5	4467050.4

Table B-1. High-Water Shoreline Position Change - Sandy Hook to Barnegat Inlet, New Jersey

	High-Water Shoreline Position Change Rate (m/yr)						High-Water Shoreline Position (UTM Zone 18, NAD 1983)							
	1836/39 to			1855/75 to		1932/33 to	1836/39		1855/75		1932/33		1977	
Transect #	1855/75	1932/33	1977	1932/33	1977	1977	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)
478	-2.1	-1.2	-0.8	-0.9	-0.5	0.1	587351.8	4467035.8	587297.2	4467027.0	587240.7	4467018.0	587246.0	4467018.8
479	-2.2	-1.2	-0.9	-0.8	-0.6	-0.3	587354.2	4467005.7	587295.1	4466996.3	587243.2	4466988.0	587231.0	4466986.0
480	-2.4	-1.2	-1.0	-0.8	-0.7	-0.6	587357.4	4466975.9	587294.1	4466965.7	587243.4	4466957.6	587217.4	4466953.5
481	-2.5		-1.1		-0.7		587360.5	4466946.0	587293.4	4466935.2			587215.0	4466922.7
482	-2.6	-1.7	-1.2	-1.4	-0.9	-0.1	587361.9	4466915.8	587291.7	4466904.6	587201.7	4466890.2	587199.1	4466889.8
483	-2.7	-1.8	-1.2	-1.4	-0.9	-0.1	587360.5	4466885.2	587289.8	4466873.9	587197.5	4466859.1	587192.5	4466858.3
484	-2.9	-1.8	-1.3	-1.4	-0.9	-0.2	587364.2	4466855.4	587288.1	4466843.3	587193.7	4466828.1	587185.8	4466826.9
485	-2.7	-1.8	-1.3	-1.4	-0.9	-0.2	587365.4	4466844.1	587289.0	4466859.8	587199.9	4466878.1	587193.5	4466879.4
486	-2.8	-1.9	-1.3	-1.4	-0.9	-0.1	587368.1	4466812.9	587287.3	4466829.5	587196.6	4466848.1	587190.8	4466849.3
487	-2.9	-1.9	-1.3	-1.5	-0.9	-0.2	587366.6	4466782.6	587285.7	4466799.2	587191.9	4466818.4	587185.1	4466819.8
488	-2.8	-1.9	-1.4	-1.5	-1.0	-0.3	587365.9	4466752.1	587285.6	4466768.6	587188.1	4466788.6	587174.3	4466791.4
489	-2.9	-2.0	-1.4	-1.6	-1.1	-0.3	587366.8	4466721.3	587284.8	4466738.1	587184.1	4466758.8	587172.9	4466761.1
490	-2.9	-2.0	-1.5	-1.7	-1.1	-0.3	587365.7	4466690.9	587284.1	4466707.6	587178.1	4466729.4	587166.2	4466731.8
491	-2.8	-2.1	-1.5	-1.7	-1.2	-0.4	587362.5	4466660.9	587284.2	4466677.0	587173.9	4466699.6	587157.9	4466702.9
492	-2.6	-2.1	-1.5	-1.8	-1.2	-0.3	587362.3	4466630.3	587288.3	4466645.5	587171.2	4466669.5	587156.9	4466672.5
493	-2.4	-2.0	-1.5	-1.9	-1.3	-0.4	587358.9	4466600.4	587291.2	4466614.3	587171.5	4466638.9	587155.8	4466642.1
494	-2.2	-2.0	-1.5	-1.9	-1.3	-0.4	587356.5	4466570.3	587293.4	4466583.2	587173.3	4466607.9	587155.0	4466611.6
495	-2.0	-1.9	-1.5	-1.9	-1.3	-0.5	587353.1	4466540.3	587295.1	4466552.2	587175.5	4466576.8	587155.2	4466581.0
496	-1.9		-1.5		-1.3		587352.1	4466509.9	587297.1	4466521.2			587155.7	4466550.2
497	-1.9						587353.0	4466479.1	587299.3	4466490.1				
498	-1.8						587351.1	4466448.9	587300.9	4466459.2				
499	-1.8						587352.3	4466418.0	587301.7	4466428.4				
500	-1.6	-1.7	-1.2	-1.8	-1.0	0.0	587347.7	4466388.3	587301.6	4466397.8	587189.9	4466420.7	587190.4	4466420.6
501	-1.6	-1.8	-1.2	-1.8	-1.1	-0.1	587347.1	4466357.8	587300.7	4466367.4	587186.2	4466390.8	587181.4	4466391.8
502	-1.6	-1.8	-1.3	-1.9	-1.2	-0.1	587344.8	4466327.7	587300.1	4466336.8	587178.8	4466361.7	587175.9	4466362.3
503	-1.5	-1.9	-1.3	-2.0	-1.2	-0.1	587342.8	4466297.5	587299.8	4466306.3	587172.7	4466332.4	587169.3	4466333.1
504	-1.6	-1.9	-1.3	-2.0	-1.3	-0.1	587343.2	4466266.7	587296.9	4466276.3	587168.7	4466302.6	587163.2	4466303.7
505	-1.7	-1.9	-1.3	-2.0	-1.3	-0.1	587341.4	4466236.5	587294.2	4466246.2	587166.3	4466272.4	587160.2	4466273.7
506	-1.7	-1.9	-1.3	-2.0	-1.2	-0.1	587338.9	4466206.4	587291.1	4466216.2	587165.3	4466242.0	587160.8	4466242.9
507	-1.7	-1.9	-1.3	-1.9	-1.2	-0.1	587335.3	4466176.5	587287.9	4466186.2	587164.3	4466211.6	587161.5	4466212.2
508	-1.6	-1.8	-1.3	-1.9	-1.2	-0.1	587331.6	4466146.6	587286.0	4466156.0	587164.9	4466180.8	587161.6	4466181.5
509	-1.7	-1.8	-1.3	-1.9	-1.1	-0.1	587331.7	4466116.0	587283.5	4466125.9	587166.0	4466150.0	587161.3	4466150.9
510	-1.9	-1.8	-1.3	-1.8	-1.1	-0.1	587332.8	4466085.1	587278.8	4466096.2	587165.4	4466119.5	587161.2	4466120.3
511	-2.2	-1.8	-1.3	-1.6	-1.0	-0.1	587331.7	4466054.7	587270.3	4466067.3	587165.8	4466088.8	587161.5	4466089.7
512	-2.5	-1.8	-1.3	-1.5	-0.9	-0.1	587330.0	4466024.5	587259.5	4466038.9	587164.4	4466058.4	587161.7	4466059.0
513	-2.8	-1.8	-1.2	-1.4	-0.8	-0.0	587329.0	4465994.0	587250.1	4466010.2	587162.6	4466028.2	587161.3	4466028.5
514	-2.7	-1.7	-1.2	-1.3	-0.8	-0.1	587325.3	4465964.2	587247.4	4465980.1	587166.2	4465996.8	587161.3	4465997.8
515	-2.7	-1.7	-1.2	-1.2	-0.8	-0.2	587323.5	4465933.9	587246.5	4465949.7	587168.6	4465965.7	587160.8	4465967.3
516	-3.0	-1.7	-1.2	-1.2	-0.8	-0.1	587324.3	4465903.1	587240.1	4465920.4	587166.0	4465935.6	587159.9	4465936.9
517	-3.0	-1.8	-1.2	-1.2	-0.8	-0.1	587326.2	4465872.1	587240.2	4465889.8	587161.3	4465906.0	587158.1	4465906.6
518	-2.8	-1.8	-1.2	-1.4	-0.8	0.0	587322.3	4465842.3	587242.8	4465858.6	587155.8	4465876.5	587156.1	4465876.4
519	-2.7	-1.8	-1.2	-1.4	-0.9	-0.0	587321.6	4465811.8	587245.5	4465827.4	587155.6	4465845.9	587154.2	4465846.2
520	-2.9	-1.9	-1.3	-1.4	-0.9	-0.1	587325.7	4465780.3	587243.5	4465797.2	587155.6	4465815.3	587152.2	4465815.9
521	-2.8	-1.9	-1.3	-1.5	-0.9	-0.1	587326.1	4465749.6	587246.7	4465765.9	587153.5	4465785.0	587151.2	4465785.5
522	-2.8	-1.9	-1.3	-1.6	-0.9	0.0	587326.6	4465718.9	587248.0	4465735.0	587148.4	4465755.5	587150.3	4465755.1
523	-2.8	-1.9	-1.3	-1.6	-0.9	0.0	587325.8	4465688.4	587247.2	4465704.6	587147.4	4465725.1	587148.7	4465724.8
524	-2.7	-1.9	-1.3	-1.5	-0.9	-0.1	587323.9	4465658.2	587247.2	4465673.9	587149.9	4465693.9	587146.6	4465694.6
525	-2.6	-1.9	-1.3	-1.5	-1.0	-0.1	587320.9	4465628.2	587247.6	4465643.2	587150.2	4465663.2	587145.5	4465664.2
526	-2.7						587321.5	4465597.4	587244.5	4465613.2				
527	-3.0	-1.6	-1.2	-1.0	-0.7	-0.4	587324.7	4465566.2	587239.0	4465583.7	587177.0	4465596.5	587159.6	4465600.1
528	-3.2	-1.7	-1.3	-1.0	-0.8	-0.4	587324.5	4465535.6	587233.9	4465554.2	587167.8	4465567.7	587151.9	4465571.0
529	-3.3	-1.8	-1.4	-1.1	-0.8	-0.5	587323.3	4465505.2	587228.6	4465524.6	587158.5	4465539.0	587139.0	4465543.0
530	-3.5	-1.9	-1.4	-1.2	-0.8	-0.2	587323.3	4465474.6	587225.2	4465494.7	587146.2	4465510.9	587135.8	4465513.0

Table B-1. High-Water Shoreline Position Change - Sandy Hook to Barnegat Inlet, New Jersey

	High-Water Shoreline Position Change Rate (m/yr)						High-Water Shoreline Position (UTM Zone 18, NAD 1983)							
	1836/39 to			1855/75 to		1932/33 to	1836/39		1855/75		1932/33		1977	
Transect #	1855/75	1932/33	1977	1932/33	1977	1977	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)
531	-3.3	-2.0	-1.4	-1.3	-0.9	-0.3	587323.4	4465443.9	587229.8	4465463.1	587144.3	4465480.7	587133.6	4465482.9
532	-3.5	-2.0	-1.4	-1.3	-0.9	-0.3	587324.6	4465413.1	587225.6	4465433.4	587142.7	4465450.4	587131.2	4465452.7
533	-3.6		-1.4		-0.9		587324.3	4465382.5	587222.8	4465403.3			587129.7	4465422.4
534	-3.4	-2.0	-1.4	-1.3	-0.8	0.0	587319.3	4465352.9	587222.2	4465372.8	587137.2	4465390.3	587137.2	4465390.3
535	-3.2						587314.2	4465323.3	587222.4	4465342.1				
536	-3.1						587309.3	4465293.7	587222.1	4465311.6				
537	-3.1						587305.4	4465263.9	587218.0	4465281.8				
538	-3.2						587302.3	4465233.9	587212.9	4465252.2				
539	-3.2	-0.8	-0.3	0.3	0.5	0.9	587299.8	4465203.8	587209.5	4465222.3	587226.3	4465218.8	587265.9	4465210.7
540	-3.4	-1.0	-0.5	0.1	0.3	0.7	587299.7	4465173.1	587204.6	4465192.7	587208.6	4465191.9	587239.4	4465185.5
541	-3.3	-1.0	-0.5	-0.0	0.3	0.7	587294.1	4465143.7	587200.2	4465162.9	587199.2	4465163.2	587227.2	4465157.4
542	-3.3	-1.1	-0.6	-0.2	0.1	0.6	587292.4	4465113.4	587199.2	4465132.5	587190.0	4465134.4	587213.5	4465129.6
543	-3.4	-1.2	-0.7	-0.2	0.0	0.4	587293.0	4465082.7	587197.4	4465102.3	587183.8	4465105.1	587200.4	4465101.7
544	-3.2	-1.2	-0.7	-0.3	-0.1	0.2	587286.7	4465053.3	587196.5	4465071.8	587179.3	4465075.4	587186.8	4465073.8
545	-3.2	-1.2	-0.8	-0.3	-0.2	-0.1	587286.0	4465022.9	587193.8	4465041.8	587176.9	4465045.2	587173.8	4465045.9
546	-3.4	-1.2	-0.9	-0.2	-0.2	-0.1	587287.8	4464991.8	587190.2	4465011.9	587176.0	4465014.8	587170.3	4465016.0
547	-3.6	-1.3	-0.9	-0.2	-0.2	-0.1	587287.6	4464961.3	587185.5	4464982.2	587172.8	4464984.8	587167.3	4464986.0
548	-3.7	-1.3	-0.9	-0.2	-0.2	-0.1	587286.2	4464930.9	587180.2	4464952.7	587169.9	4464954.8	587164.4	4464955.9
549	-3.9	-1.3	-0.9	-0.1	-0.1	-0.1	587286.0	4464900.3	587175.9	4464922.9	587167.1	4464924.7	587163.6	4464925.5
550	-4.0	-1.4	-1.0	-0.2	-0.2	-0.2	587286.9	4464869.5	587172.8	4464892.9	587162.1	4464895.1	587154.1	4464896.8
551	-4.1	-1.4	-1.0	-0.2	-0.2	-0.1	587284.3	4464839.4	587168.4	4464863.2	587155.5	4464865.9	587152.2	4464866.6
552	-4.2	-1.4	-1.0	-0.2	-0.1	-0.0	587282.9	4464809.1	587163.9	4464833.5	587149.9	4464836.4	587149.6	4464836.5
553	-4.2	-1.5	-1.0	-0.3	-0.2	-0.0	587280.7	4464778.9	587162.2	4464803.3	587146.6	4464806.5	587146.0	4464806.6
554	-4.3	-1.5	-1.0	-0.2	-0.1	0.0	587277.7	4464748.9	587156.2	4464773.8	587142.2	4464776.7	587143.7	4464776.4
555	-4.5	-1.5	-1.0	-0.2	-0.1	0.1	587276.2	4464718.6	587148.8	4464744.8	587136.9	4464747.2	587140.9	4464746.4
556	-4.7	-1.6	-1.0	-0.2	-0.1	0.1	587275.1	4464688.2	587143.1	4464715.3	587130.1	4464718.0	587135.2	4464716.9
557	-4.8	-1.6	-1.1	-0.2	-0.1	0.0	587273.2	4464658.0	587137.6	4464685.8	587123.8	4464688.6	587125.0	4464688.4
558	-4.6	-1.6	-1.1	-0.3	-0.2	0.0	587266.0	4464628.8	587135.7	4464655.6	587118.9	4464659.0	587120.1	4464658.8
559	-4.4	-1.6	-1.1	-0.3	-0.2	0.0	587259.8	4464599.5	587133.7	4464625.4	587115.7	4464629.0	587116.2	4464628.9
560	-4.4	-1.6	-1.1	-0.3	-0.2	-0.0	587255.1	4464569.8	587129.9	4464595.5	587109.9	4464599.6	587109.1	4464599.8
561	-4.4	-1.7	-1.1	-0.5	-0.3	-0.0	587249.7	4464540.3	587126.1	4464565.7	587097.1	4464571.6	587095.5	4464571.9
562	-4.3	-1.8	-1.1	-0.6	-0.2	0.4	587243.8	4464510.9	587122.4	4464535.8	587082.7	4464543.9	587101.1	4464540.2
563	-4.2	-1.8	-1.1	-0.7	-0.3	0.2	587238.8	4464481.3	587118.7	4464505.9	587076.0	4464514.7	587084.4	4464513.0
564	-4.2	-1.8	-1.2	-0.7	-0.4	0.0	587233.2	4464451.8	587115.0	4464476.1	587071.2	4464485.1	587072.6	4464484.8
565	-4.0		-1.2		-0.5		587227.1	4464422.4	587112.7	4464445.9			587063.1	4464456.1
566	-3.9		-1.3		-0.6		587221.6	4464392.9	587111.4	4464415.5			587052.6	4464427.6
567	-3.9						587218.3	4464363.0	587109.0	4464385.4				
568	-3.9		-1.2		-0.5		587214.8	4464333.1	587105.4	4464355.5			587053.6	4464366.2
569	-3.9		-1.2		-0.5		587212.9	4464302.8	587101.8	4464325.6			587047.0	4464336.9
570	-3.9		-1.3		-0.6		587212.1	4464272.4	587100.1	4464295.4			587041.1	4464307.5
571	-4.0		-1.3		-0.6		587212.4	4464241.7	587098.5	4464265.1			587034.9	4464278.1
572	-4.1		-1.4		-0.6		587211.8	4464211.2	587096.6	4464234.8			587028.0	4464248.9
573	-4.1	-2.0	-1.4	-1.0	-0.7	-0.2	587211.0	4464180.7	587093.5	4464204.8	587029.8	4464217.9	587020.8	4464219.8
574	-4.2	-2.0	-1.4	-1.1	-0.7	-0.1	587208.2	4464150.7	587090.3	4464174.9	587021.0	4464189.1	587015.2	4464190.3
575	-4.1	-2.1	-1.5	-1.2	-0.8	-0.1	587204.1	4464120.9	587088.4	4464144.6	587013.5	4464160.0	587008.3	4464161.1
576	-4.0	-2.1	-1.5	-1.2	-0.8	-0.2	587202.1	4464090.7	587087.8	4464114.1	587010.1	4464130.1	587001.0	4464131.9
577	-3.9	-2.0	-1.6	-1.2	-0.9	-0.5	587198.1	4464060.9	587086.4	4464083.8	587009.9	4464099.5	586987.8	4464104.0
578	-3.8	-2.0	-1.6	-1.2	-1.0	-0.6	587192.6	4464031.4	587084.1	4464053.6	587008.1	4464069.2	586982.5	4464074.5
579	-3.6		-1.5		-1.0		587187.5	4464001.8	587084.0	4464023.0			586979.7	4464044.5
580	-3.5						587182.0	4463972.3	587081.8	4463992.9				
581	-3.4	-1.0	-0.9	0.1	-0.2	-0.6	587177.1	4463942.7	587080.2	4463962.6	587087.2	4463961.1	587059.9	4463966.7
582	-3.3	-1.2	-1.0	-0.2	-0.4	-0.6	587171.7	4463913.2	587077.5	4463932.5	587063.2	4463935.4	587037.6	4463940.7
583	-3.4	-1.3	-1.1	-0.4	-0.5	-0.6	587171.4	4463882.6	587074.4	4463902.5	587051.8	4463907.1	587024.9	4463912.7

Table B-1. High-Water Shoreline Position Change - Sandy Hook to Barnegat Inlet, New Jersey

High-Water Shoreline Position Change Rate (m/yr)						High-Water Shoreline Position (UTM Zone 18, NAD 1983)								
	1836/39 to		1855/75 to		1932/33 to		1836/39		1855/75		1932/33		1977	
Transect #	1855/75	1932/33	1977	1932/33	1977	1977	Transect #	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)
584	-3.5	-1.4	-1.2	-0.4	-0.5	-0.7	584	587172.9	4463851.7	587072.8	4463872.2	587044.8	4463878.0	587015.5	4463884.0
585	-3.7	-1.5	-1.2	-0.5	-0.6	-0.6	585	587173.4	4463820.9	587069.6	4463842.2	587037.1	4463848.9	587010.3	4463854.4
586	-3.7	-1.5	-1.2	-0.6	-0.6	-0.6	586	587172.4	4463790.5	587068.0	4463811.9	587031.5	4463819.4	587006.8	4463824.5
587	-3.7	-1.5		-0.6			587	587169.3	4463760.5	587065.5	4463781.8	587028.6	4463789.4		
588	-3.7	-1.5	-1.1	-0.6	-0.4	-0.1	588	587165.9	4463730.6	587061.0	4463752.1	587025.6	4463759.4	587019.5	4463760.6
589	-3.7	-1.6	-1.2	-0.6	-0.5	-0.4	589	587165.9	4463700.0	587059.7	4463721.8	587022.8	4463729.3	587006.3	4463732.7
590	-3.8	-1.6	-1.2	-0.6	-0.6	-0.5	590	587165.9	4463669.3	587057.8	4463691.5	587018.9	4463699.5	586997.7	4463703.9
591	-3.8	-1.6	-1.3	-0.6	-0.6	-0.7	591	587162.9	4463639.3	587053.8	4463661.7	587015.2	4463669.7	586986.6	4463675.5
592	-3.8	-1.6	-1.3	-0.6	-0.7	-0.7	592	587158.9	4463609.5	587050.0	4463631.9	587010.1	4463640.1	586980.0	4463646.2
593	-3.8	-1.7	-1.3	-0.7	-0.6	-0.5	593	587158.7	4463578.9	587051.4	4463601.0	587004.2	4463610.7	586984.3	4463614.7
594	-3.7	-1.8	-1.3	-0.9	-0.7	-0.4	594	587158.6	4463548.3	587052.6	4463570.1	586997.3	4463581.5	586978.2	4463585.4
595	-3.7	-1.8	-1.4	-1.0	-0.8	-0.4	595	587158.9	4463517.7	587053.0	4463539.4	586990.8	4463552.2	586973.1	4463555.8
596	-3.7	-1.9	-1.4	-1.0	-0.8	-0.4	596	587157.8	4463487.2	587052.9	4463508.8	586986.5	4463522.4	586970.5	4463525.7
597	-3.8	-1.9	-1.4	-1.0	-0.7	-0.2	597	587157.0	4463456.8	587049.7	4463478.8	586983.4	4463492.4	586974.1	4463494.3
598	-3.9	-1.9	-1.2	-1.0	-0.5	0.3	598	587158.2	4463425.9	587046.4	4463448.9	586980.4	4463462.4	586991.5	4463460.1
599	-4.0	-2.0	-1.3	-1.0	-0.6	0.0	599	587157.8	4463395.4	587043.7	4463418.8	586978.0	4463432.3	586978.8	4463432.1
600	-4.1	-2.0	-1.4	-1.0	-0.7	-0.1	600	587158.7	4463364.6	587041.1	4463388.7	586975.0	4463402.3	586969.6	4463403.4
601	-4.1	-2.0	-1.4	-1.1	-0.7	-0.2	601	587154.6	4463334.8	587038.1	4463358.7	586969.3	4463372.8	586960.5	4463374.6
602	-4.1	-2.0	-1.5	-1.1	-0.8	-0.4	602	587149.6	4463305.2	587034.6	4463328.8	586966.3	4463342.8	586950.8	4463346.0
603	-4.1	-2.0	-1.5	-1.1	-0.8	-0.5	603	587147.4	4463275.0	587030.5	4463299.0	586963.7	4463312.7	586942.1	4463317.2
604	-4.3	-2.1	-1.6	-1.1	-0.9	-0.5	604	587147.4	4463244.4	587026.4	4463269.2	586959.0	4463283.1	586936.1	4463287.8
605	-4.2	-2.0	-1.6	-1.1	-0.9	-0.6	605	587142.0	4463214.9	587022.5	4463239.4	586953.8	4463253.5	586929.4	4463258.5
606	-4.3	-2.1	-1.6	-1.1	-0.9	-0.6	606	587140.0	4463184.6	587019.0	4463209.5	586947.3	4463224.2	586921.7	4463229.5
607	-4.3	-2.1	-1.6	-1.1	-0.9	-0.7	607	587138.1	4463154.4	587017.5	4463179.2	586945.5	4463194.0	586917.0	4463199.8
608	-4.3	-2.1	-1.6	-1.1	-0.9	-0.6	608	587137.1	4463124.0	587016.0	4463148.9	586944.0	4463163.6	586918.0	4463169.0
609	-4.3	-2.1	-1.6	-1.1	-0.9	-0.5	609	587136.4	4463093.5	587013.8	4463118.7	586942.9	4463133.2	586923.1	4463137.3
610	-4.4	-2.1	-1.3	-1.1	-0.4	0.6	610	587135.9	4463063.0	587010.9	4463088.7	586938.6	4463103.5	586966.1	4463097.8
611	-4.4	-2.2	-1.3	-1.2	-0.5	0.4	611	587133.2	4463032.9	587007.8	4463058.7	586933.6	4463073.9	586951.7	4463070.2
612	-4.4	-2.2	-1.4	-1.2	-0.6	0.3	612	587130.0	4463003.0	587004.7	4463028.7	586928.0	4463044.4	586941.6	4463041.6
613	-4.5	-2.2	-1.5	-1.2	-0.7	0.1	613	587128.9	4462972.5	587001.8	4462998.6	586923.6	4463014.7	586929.2	4463013.5
614	-4.6	-2.3	-1.5	-1.2	-0.7	0.0	614	587126.6	4462942.4	586997.1	4462969.0	586919.7	4462934.9	586919.6	4462984.9
615	-4.6	-2.3	-1.6	-1.2	-0.8	-0.2	615	587123.7	4462912.4	586992.4	4462939.3	586916.4	4462954.9	586909.7	4462956.3
616	-4.6	-2.3	-1.6	-1.2	-0.8	-0.2	616	587120.1	4462882.5	586988.8	4462909.4	586911.4	4462925.3	586901.0	4462927.4
617	-4.6	-2.3	-1.7	-1.2	-0.9	-0.4	617	587118.4	4462852.2	586986.6	4462879.3	586908.5	4462895.3	586893.0	4462898.5
618	-4.6	-2.1	-1.6	-0.9	-0.8	-0.7	618	587112.8	4462822.7	586981.4	4462849.7	586922.9	4462861.7	586891.6	4462868.1
619	-4.7						619	587110.7	4462792.5	586977.0	4462820.0				
620	-4.7	-1.3	-1.1	0.2	-0.2	-0.7	620	587108.4	4462762.4	586974.5	4462789.9	586985.5	4462787.6	586954.7	4462793.9
621	-4.6	-1.4	-1.2	-0.1	-0.3	-0.7	621	587101.5	4462733.2	586972.4	4462759.7	586969.3	4462760.3	586940.7	4462766.2
622	-4.4	-1.5	-1.2	-0.2	-0.3	-0.6	622	587094.0	4462704.1	586969.8	4462729.6	586959.6	4462731.7	586935.0	4462736.7
623	-4.4	-1.5	-1.2	-0.2	-0.3	-0.6	623	587090.1	4462674.3	586966.2	4462698.7	586956.7	4462701.6	586930.2	4462707.1
624	-4.3	-1.4	-1.2	-0.1	-0.3	-0.7	624	587084.3	4462644.8	586962.1	4462669.9	586953.5	4462671.7	586925.4	4462677.4
625	-4.3	-1.5	-1.2	-0.2	-0.4	-0.6	625	587079.7	4462615.1	586957.8	4462640.2	586946.2	4462642.6	586920.4	4462647.8
626	-4.4	-1.2	-1.1	0.2	-0.2	-0.8	626	587077.2	4462585.0	586953.6	4462610.4	586965.4	4462608.0	586931.3	4462615.0
627	-4.3	-1.3	-1.1	0.0	-0.3	-0.7	627	587072.5	4462555.4	586949.4	4462580.6	586949.6	4462580.6	586920.4	4462586.6
628	-4.4	-1.4	-1.2	-0.1	-0.4	-0.7	628	587070.6	4462525.1	586945.6	4462550.8	586939.1	4462552.1	586908.6	4462558.4
629	-4.4	-1.4	-1.2	-0.1	-0.4	-0.8	629	587065.9	4462495.5	586942.1	4462520.9	586938.2	4462521.7	586902.9	4462528.9
630	-4.4	-1.5	-1.2	-0.2	-0.4	-0.6	630	587063.1	4462485.4	586939.2	4462490.9	586924.6	4462493.9	586897.6	4462499.4
631	-4.4		-1.2		-0.4		631	587060.4	4462435.4	586936.6	4462460.8			586898.2	4462468.7
632	-4.5	-1.4	-1.1	0.0	-0.2	-0.5	632	587062.5	4462404.3	586934.5	4462430.6	586935.0	4462430.5	586914.7	4462434.6
633	-4.5	-1.5	-1.2	-0.1	-0.3	-0.6	633	587059.9	4462374.2	586932.1	4462400.4	586924.9	4462401.9	586900.1	4462407.0
634	-4.5	-1.5	-1.2	-0.1	-0.4	-0.7	634	587055.3	4462344.5	586928.9	4462370.5	586920.3	4462372.2	586888.9	4462378.7
635	-4.5	-1.5	-1.2	-0.2	-0.4	-0.6	635	587052.8	4462314.4	586924.4	4462340.8	586913.4	4462343.0	586887.4	4462348.4
636	-4.5	-1.5	-1.2	-0.2	-0.3	-0.5	636	587046.3	4462285.1	586918.7	4462311.3	586906.2	4462313.9	586883.0	4462318.6

Table B-1. High-Water Shoreline Position Change - Sandy Hook to Barnegat Inlet, New Jersey

	High-Water Shoreline Position Change Rate (m/yr)						High-Water Shoreline Position (UTM Zone 18, NAD 1983)							
	1836/39 to			1855/75 to		1932/33 to	1836/39		1855/75		1932/33		1977	
Transect #	1855/75	1932/33	1977	1932/33	1977	1977	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)
637	-4.5		-1.2		-0.3		587042.0	4462255.4	586913.9	4462281.7			586885.9	4462287.4
638	-4.5	-1.3	-1.2	0.2	-0.3	-0.9	587039.0	4462225.4	586910.3	4462251.8	586920.0	4462249.8	586882.7	4462257.5
639	-4.5	-1.4	-1.2	0.1	-0.3	-0.9	587035.2	4462195.5	586906.4	4462222.0	586911.4	4462220.9	586872.1	4462229.0
640	-4.5	-1.4	-1.2	-0.0	-0.3	-0.8	587031.4	4462165.7	586902.6	4462192.1	586901.8	4462192.3	586868.9	4462199.0
641	-4.5	-1.4	-1.2	-0.1	-0.3	-0.6	587028.2	4462135.7	586899.9	4462162.0	586895.4	4462163.0	586869.6	4462168.3
642	-4.4		-1.1		-0.2		587023.4	4462106.1	586897.2	4462132.0			586873.2	4462136.9
643	-4.5	-1.3	-1.0	0.2	-0.1	-0.6	587021.2	4462075.9	586894.5	4462101.9	586906.6	4462099.4	586883.0	4462104.3
644	-4.4	-1.3	-1.1	0.1	-0.2	-0.6	587018.1	4462045.9	586892.5	4462071.7	586897.7	4462070.6	586871.5	4462076.0
645	-4.4	-1.3	-1.1	0.0	-0.2	-0.6	587014.9	4462015.9	586890.2	4462041.5	586892.5	4462041.1	586867.7	4462046.2
646	-4.3	-1.3	-1.0	0.0	-0.2	-0.5	587010.3	4461986.2	586888.6	4462011.2	586890.9	4462010.8	586869.7	4462015.1
647	-4.3	-1.2	-1.0	0.1	-0.2	-0.6	587010.1	4461955.7	586887.4	4461980.9	586895.8	4461979.1	586871.6	4461984.1
648	-4.3						587008.8	4461925.3	586886.2	4461950.5				
649	-4.2						587003.5	4461895.8	586885.4	4461920.0				
650	-4.1						586998.1	4461866.3	586883.2	4461889.8				
651	-4.0	-1.1	-0.8	0.2	0.1	-0.0	586992.5	4461836.8	586879.4	4461860.0	586890.3	4461857.8	586888.7	4461858.1
652	-4.0	-1.1	-0.8	0.2	0.0	-0.3	586987.0	4461807.3	586874.6	4461830.4	586886.4	4461827.9	586875.8	4461830.1
653	-3.9	-1.1	-0.9	0.2	-0.1	-0.4	586981.9	4461777.7	586870.8	4461800.5	586882.0	4461798.2	586864.8	4461801.7
654	-3.8	-1.1	-0.9	0.1	-0.1	-0.4	586976.5	4461748.2	586867.6	4461770.5	586873.0	4461769.4	586854.8	4461773.2
655	-3.8	-1.2	-0.9	-0.0	-0.1	-0.3	586970.0	4461718.9	586863.4	4461740.8	586861.8	4461741.1	586848.3	4461743.9
656	-3.6	-1.2		-0.1			586964.3	4461689.4	586861.1	4461710.6	586852.5	4461712.4		
657	-3.8	-1.3	-1.0	-0.2	-0.2	-0.3	586962.5	4461659.2	586855.3	4461681.2	586845.9	4461683.1	586833.1	4461685.7
658	-3.7	-1.2	-0.9	-0.1	-0.2	-0.4	586955.3	4461630.0	586850.2	4461651.6	586845.5	4461652.6	586829.7	4461655.8
659	-3.6	-1.1	-0.9	0.0	-0.1	-0.4	586948.7	4461600.8	586845.3	4461622.0	586847.1	4461621.6	586830.6	4461625.0
660	-3.6						586942.9	4461571.3	586840.4	4461592.4				
661	-3.7	-1.0	-0.8	0.2	-0.0	-0.3	586939.3	4461541.5	586835.1	4461562.8	586845.6	4461560.7	586832.0	4461563.5
662	-3.7	-1.1	-0.9	0.1	-0.1	-0.4	586935.3	4461511.6	586829.3	4461533.4	586836.5	4461531.9	586817.9	4461535.7
663	-3.9	-1.1	-0.9	0.1	-0.2	-0.5	586933.0	4461481.5	586823.6	4461503.9	586829.9	4461502.7	586808.2	4461507.1
664	-3.8	-1.1	-1.0	0.1	-0.2	-0.6	586928.2	4461451.9	586819.3	4461474.2	586824.0	4461473.2	586798.2	4461478.5
665	-3.9	-1.2	-1.0	-0.0	-0.3	-0.6	586928.0	4461421.3	586818.4	4461443.8	586815.8	4461444.3	586788.3	4461449.9
666	-3.8	-1.3	-1.0	-0.2	-0.3	-0.6	586924.0	4461391.5	586817.1	4461413.4	586807.6	4461415.4	586783.6	4461420.3
667	-3.7	-1.2	-1.0	-0.2	-0.3	-0.6	586917.6	4461362.1	586812.7	4461383.7	586803.2	4461385.6	586779.1	4461390.6
668	-3.6	-1.3	-1.0	-0.2	-0.3	-0.5	586911.4	4461332.8	586808.6	4461353.9	586795.7	4461356.5	586774.9	4461360.8
669	-3.5	-1.3	-1.0	-0.3	-0.3	-0.4	586904.8	4461303.5	586805.0	4461324.0	586785.4	4461328.0	586769.7	4461331.2
670	-3.4	-1.3	-1.0	-0.3	-0.3	-0.3	586897.6	4461274.4	586801.3	4461294.1	586782.5	4461298.0	586768.4	4461300.9
671	-3.2		-0.9		-0.2		586889.7	4461245.4	586797.6	4461264.3			586774.9	4461268.9
672	-3.3	-0.9	-0.7	0.2	-0.0	-0.3	586886.2	4461215.5	586793.8	4461234.4	586803.6	4461232.4	586790.4	4461235.1
673	-3.3	-1.0	-0.8	0.0	-0.1	-0.3	586884.8	4461185.1	586790.0	4461204.6	586791.5	4461204.3	586780.1	4461206.6
674	-3.3	-1.1	-0.8	-0.1	-0.1	-0.3	586879.7	4461155.5	586785.5	4461174.9	586782.1	4461175.6	586771.3	4461177.8
675	-3.3	-1.1	-0.8	-0.1	-0.2	-0.3	586875.7	4461125.7	586780.9	4461145.2	586774.4	4461146.5	586763.1	4461148.9
676	-3.5	-1.2	-0.9	-0.2	-0.2	-0.3	586875.5	4461095.2	586776.1	4461115.6	586766.1	4461117.6	586753.5	4461120.2
677	-3.6	-1.3	-1.0	-0.2	-0.3	-0.3	586874.4	4461064.8	586771.4	4461085.9	586757.1	4461088.8	586744.7	4461091.4
678	-3.7	-1.3	-1.0	-0.3	-0.3	-0.3	586870.4	4461034.9	586766.7	4461056.2	586748.6	4461059.9	586735.3	4461062.7
679	-3.7	-1.4	-1.0	-0.3	-0.3	-0.2	586867.1	4461005.0	586761.7	4461026.6	586743.0	4461030.5	586734.9	4461032.1
680	-3.8		-0.9		-0.2		586862.4	4460975.3	586755.9	4460997.2			586736.8	4461001.1
681	-3.9	-1.2	-0.7	-0.0	0.2	0.6	586856.4	4460945.9	586746.6	4460968.5	586744.7	4460968.9	586768.8	4460963.9
682	-3.9	-1.3	-0.7	-0.1	0.1	0.4	586847.8	4460917.1	586738.2	4460939.6	586733.2	4460940.6	586750.8	4460937.0
683	-3.8	-1.3	-0.8	-0.1	0.1	0.3	586844.3	4460887.2	586735.2	4460909.6	586728.4	4460911.0	586740.9	4460908.4
684	-3.9	-1.3		-0.1			586841.2	4460857.2	586731.2	4460879.8	586725.3	4460881.0		
685	-4.0	-1.3	-0.8	-0.1	0.0	0.3	586837.3	4460827.4	586725.1	4460850.4	586716.4	4460852.2	586728.3	4460849.8
686	-4.1	-1.4	-0.9	-0.2	-0.1	0.0	586835.0	4460797.2	586719.9	4460820.8	586709.0	4460823.1	586709.4	4460823.0
687	-4.1	-1.4	-1.0	-0.1	-0.1	-0.1	586831.8	4460767.3	586715.0	4460791.2	586705.9	4460793.1	586703.0	4460793.7
688	-4.0		-0.9		-0.1		586824.5	4460738.1	586710.1	4460761.6			586703.7	4460762.9
689	-3.8	-1.1	-0.9	0.1	-0.1	-0.3	586813.8	4460709.7	586704.6	4460732.1	586709.0	4460731.2	586696.5	4460733.8

Table B-1. High-Water Shoreline Position Change - Sandy Hook to Barnegat Inlet, New Jersey

	High-Water Shoreline Position Change Rate (m/yr)						High-Water Shoreline Position (UTM Zone 18, NAD 1983)								
	1836/39 to			1855/75 to		1932/33 to	1836/39		1855/75		1932/33		1977		
Transect #	1855/75	1932/33	1977	1932/33	1977	1977	Transect #	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)
690	-3.6	-1.1	-0.9	0.0	-0.2	-0.4	690	586804.7	4460680.9	586701.5	4460702.1	586701.8	4460702.1	586683.2	4460705.9
691	-3.6	-1.1	-0.9	-0.0	-0.2	-0.5	691	586797.0	4460651.9	586695.4	4460672.8	586694.5	4460672.9	586673.5	4460677.2
692	-3.6	-1.1	-0.9	-0.0	-0.2	-0.4	692	586789.8	4460622.7	586688.8	4460643.5	586687.3	4460643.8	586670.9	4460647.2
693	-3.4	-1.1	-0.8	-0.0	-0.0	-0.1	693	586779.4	4460594.2	586682.2	4460614.2	586679.6	4460614.7	586677.6	4460615.1
694	-3.3	-1.1	-0.8	-0.1	-0.1	-0.2	694	586768.9	4460565.8	586676.5	4460584.8	586671.0	4460585.9	586661.4	4460587.9
695	-3.1	-1.0	-0.8	-0.1	-0.2	-0.2	695	586759.1	4460537.2	586671.4	4460555.2	586664.6	4460556.6	586655.8	4460558.4
696	-3.0	-1.0	-0.7	-0.2	-0.1	-0.1	696	586752.2	4460508.0	586666.2	4460525.6	586656.1	4460527.7	586653.3	4460528.3
697	-3.0	-1.1	-0.7	-0.2	-0.1	0.1	697	586746.6	4460478.5	586660.8	4460496.1	586649.0	4460498.5	586653.6	4460497.6
698	-3.1	-1.1	-0.6	-0.2	0.1	0.6	698	586743.9	4460448.4	586654.9	4460466.7	586642.5	4460469.2	586670.2	4460463.5
699	-3.2	-1.1	-0.7	-0.2	0.0	0.3	699	586739.7	4460418.7	586648.8	4460437.3	586639.1	4460439.3	586651.7	4460436.7
700	-3.3	-1.1	-0.7	-0.1	-0.1	0.1	700	586736.4	4460388.7	586642.2	4460408.0	586633.9	4460409.8	586636.7	4460409.2
701	-3.3	-1.1	-0.8	-0.1	-0.1	-0.1	701	586730.9	4460359.2	586636.8	4460378.5	586628.7	4460380.2	586626.6	4460380.6
702	-3.2	-1.1	-0.8	-0.2	-0.1	-0.1	702	586725.2	4460329.8	586633.2	4460348.6	586623.2	4460350.7	586620.0	4460351.3
703	-3.2	-1.1	-0.8	-0.2	-0.1	-0.1	703	586719.7	4460300.3	586629.9	4460318.7	586618.2	4460321.1	586615.1	4460321.7
704	-3.2	-1.1	-0.8	-0.2	-0.1	-0.0	704	586717.4	4460270.1	586626.9	4460288.7	586614.6	4460291.2	586613.0	4460291.5
705	-3.4	-1.2		-0.2			705	586717.6	4460239.4	586622.4	4460259.0	586609.7	4460261.6		
706	-3.5		-0.7		0.1		706	586718.2	4460208.7	586618.0	4460229.3			586622.8	4460228.3
707	-3.6	-1.2	-0.8	-0.2	-0.0	0.2	707	586715.2	4460178.7	586614.4	4460199.4	586603.1	4460201.7	586609.8	4460200.3
708	-3.5	-1.2	-0.8	-0.2	-0.1	0.2	708	586710.5	4460149.0	586611.1	4460169.4	586597.6	4460172.2	586605.8	4460170.5
709	-3.5	-1.2		-0.2			709	586707.7	4460119.0	586609.2	4460139.2	586595.2	4460142.1		
710	-3.5	-1.2	-0.7	-0.2	0.1	0.5	710	586705.9	4460088.7	586607.3	4460108.9	586592.6	4460112.0	586612.6	4460107.9
711	-3.5	-1.2	-0.7	-0.2	0.0	0.3	711	586703.5	4460058.6	586604.1	4460079.0	586591.5	4460081.6	586605.8	4460078.6
712	-3.6	-1.3	-0.7	-0.2	0.0	0.4	712	586701.4	4460028.4	586599.3	4460049.3	586586.4	4460052.0	586603.6	4460048.5
713	-3.6	-1.3	-0.7	-0.2	0.1	0.4	713	586697.4	4459998.6	586594.3	4460019.7	586582.6	4460022.1	586601.6	4460018.2
714	-3.4	-1.2	-0.5	-0.1	0.3	0.8	714	586689.3	4459969.6	586591.5	4459989.7	586583.2	4459991.4	586618.7	4459984.1
715	-3.5	-1.2	-0.6	-0.1	0.1	0.5	715	586686.7	4459939.5	586588.8	4459959.6	586580.0	4459961.4	586601.7	4459957.0
716	-3.4	-1.2	-0.7	-0.2	-0.0	0.3	716	586683.3	4459909.6	586587.4	4459929.3	586574.2	4459932.0	586586.9	4459929.4
717	-3.2	-1.2	-0.8	-0.3	-0.1	0.2	717	586681.1	4459879.4	586589.2	4459898.3	586568.2	4459902.6	586576.3	4459900.9
718	-3.2		-0.8		-0.2		718	586676.8	4459849.7	586586.1	4459868.3			586566.3	4459872.4
719	-3.1	-1.3	-0.9	-0.5	-0.3	0.2	719	586670.6	4459820.3	586582.9	4459838.3	586548.3	4459845.4	586556.0	4459843.9
720	-3.1	-1.3	-0.9	-0.5	-0.3	0.0	720	586666.3	4459790.6	586577.1	4459808.9	586545.1	4459815.5	586546.1	4459815.3
721	-3.2	-1.3	-0.9	-0.5	-0.3	-0.1	721	586662.3	4459760.8	586570.9	4459779.5	586540.0	4459785.9	586536.2	4459786.7
722	-3.3	-1.4	-0.9	-0.5	-0.3	-0.1	722	586659.0	4459730.8	586565.2	4459750.1	586534.8	4459756.3	586531.5	4459757.0
723	-3.3	-1.3	-0.9	-0.5	-0.3	0.0	723	586652.7	4459701.5	586560.1	4459720.5	586529.7	4459726.7	586530.2	4459726.6
724	-3.2	-1.3	-0.8	-0.4	-0.1	0.4	724	586645.0	4459672.4	586554.7	4459691.0	586529.0	4459696.3	586544.1	4459693.2
725	-3.0	-1.1	-0.8	-0.3	-0.2	0.0	725	586636.8	4459643.5	586551.2	4459661.1	586531.8	4459665.1	586533.2	4459664.8
726	-3.0	-1.1	-0.8	-0.3	-0.2	-0.1	726	586632.9	4459613.7	586548.5	4459631.0	586532.8	4459634.2	586528.9	4459635.0
727	-3.1	-1.1	-0.8	-0.3	-0.2	0.0	727	586631.5	4459583.4	586543.1	4459601.5	586526.6	4459604.9	586527.1	4459604.8
728	-3.2	-1.2	-0.7	-0.3	0.0	0.5	728	586629.7	4459553.1	586539.1	4459571.7	586518.8	4459575.8	586542.0	4459571.1
729	-3.2	-1.3	-0.8	-0.4	-0.1	0.3	729	586627.1	4459523.0	586535.5	4459541.8	586512.0	4459546.6	586524.6	4459544.0
730	-3.0	-1.2	-0.7	-0.4	-0.1	0.2	730	586618.4	4459494.2	586531.9	4459511.9	586509.8	4459516.5	586518.0	4459514.8
731	-2.9	-1.1	-0.7	-0.3	-0.1	0.2	731	586611.4	4459465.0	586528.5	4459482.0	586509.1	4459486.0	586517.0	4459484.3
732	-2.9	-1.1		-0.3			732	586606.5	4459435.4	586524.9	4459452.1	586504.4	4459456.3		
733	-2.9	-1.2	-0.6	-0.4	-0.0	0.5	733	586602.3	4459405.6	586520.8	4459422.3	586496.7	4459427.3	586517.5	4459423.0
734	-2.9	-1.2	-0.7	-0.5	-0.1	0.5	734	586596.7	4459376.1	586515.8	4459392.7	586485.7	4459398.9	586505.1	4459394.9
735	-3.0	-1.3	-0.7	-0.5	-0.1	0.5	735	586595.5	4459345.7	586509.8	4459363.3	586478.2	4459369.8	586498.7	4459365.6
736	-3.2	-1.3	-0.8	-0.4	-0.1	0.3	736	586596.8	4459314.8	586506.0	4459333.5	586479.6	4459338.9	586494.1	4459335.9
737	-3.1	-1.2	-0.7	-0.3	-0.1	0.2	737	586592.8	4459285.0	586504.6	4459303.1	586485.3	4459307.1	586494.4	4459305.2
738	-3.2	-1.2	-0.7	-0.3	-0.0	0.3	738	586590.7	4459254.8	586501.2	4459273.2	586482.2	4459277.1	586497.0	4459274.1
739	-3.4	-1.2	-0.8	-0.3	-0.1	0.1	739	586590.0	4459224.4	586494.0	4459244.1	586477.1	4459247.5	586481.2	4459246.7
740	-3.5	-1.3	-0.8	-0.3	-0.1	0.1	740	586586.9	4459194.4	586488.8	4459214.5	586472.1	4459217.9	586474.6	4459217.4
741	-3.4	-1.3	-0.8	-0.3	-0.1	0.1	741	586581.5	4459164.8	586484.1	4459184.8	586465.5	4459188.7	586470.6	4459187.6
742	-3.4	-1.3	-0.8	-0.3	-0.1	0.2	742	586577.2	4459135.1	586480.4	4459155.0	586459.9	4459159.2	586468.2	4459157.5

Table B-1. High-Water Shoreline Position Change - Sandy Hook to Barnegat Inlet, New Jersey

	High-Water Shoreline Position Change Rate (m/yr)						High-Water Shoreline Position (UTM Zone 18, NAD 1983)							
	1836/39 to			1855/75 to		1932/33 to	1836/39		1855/75		1932/33		1977	
Transect #	1855/75	1932/33	1977	1932/33	1977	1977	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)
743	-3.4	-1.3		-0.4			586573.1	4459105.3	586477.0	4459125.1	586455.0	4459129.6		
744	-3.4	-1.3	-0.7	-0.4	0.0	0.6	586569.3	4459075.5	586473.4	4459095.2	586451.4	4459099.7	586476.2	4459094.6
745	-3.4	-1.3	-0.8	-0.3	-0.1	0.3	586565.5	4459045.6	586468.9	4459065.5	586449.6	4459069.4	586461.5	4459067.0
746	-3.5	-1.3	-0.8	-0.3	-0.1	0.1	586564.9	4459015.1	586465.5	4459035.5	586445.6	4459039.6	586451.5	4459038.4
747	-3.7	-1.5	-0.9	-0.5	-0.2	0.3	586567.9	4458983.9	586462.2	4459005.6	586431.1	4459012.0	586441.7	4459009.8
748	-3.9	-1.7	-1.0	-0.7	-0.2	0.5	586567.5	4458953.3	586457.2	4458976.0	586411.6	4458985.4	586431.7	4458981.2
749	-4.0	-1.7	-1.0	-0.8	-0.3	0.5	586564.0	4458923.4	586451.9	4458946.4	586403.4	4458956.4	586423.0	4458952.4
750	-4.0	-1.8	-1.1	-0.8	-0.3	0.4	586561.4	4458893.3	586448.2	4458916.6	586400.1	4458926.5	586417.2	4458923.0
751	-4.0						586559.5	4458863.1	586447.3	4458886.1				
752			-0.9				586550.9	4458834.3					586428.6	4458859.3
753	-3.1		-0.9		-0.3		586531.8	4458807.6	586445.1	4458825.3			586413.5	4458831.8
754	-2.3		-0.7		-0.3		586499.6	4458783.5	586433.6	4458797.1			586404.6	4458803.0
755					-0.2				586421.0	4458769.0			586396.1	4458774.2
756	-3.0	-1.2	-0.8	-0.3	-0.2	0.0	586497.9	4458722.6	586412.2	4458740.2	586390.9	4458744.6	586390.9	4458744.6
757	-3.5	-1.3	-0.9	-0.3	-0.2	-0.1	586507.2	4458690.1	586406.6	4458710.7	586388.7	4458714.4	586386.6	4458714.8
758	-3.7	-1.3	-0.9	-0.2	-0.1	-0.0	586505.0	4458659.9	586399.8	4458681.5	586385.4	4458684.5	586384.6	4458684.6
759	-3.6	-1.2		-0.2			586495.3	4458631.3	586392.0	4458652.5	586380.9	4458654.8		
760	-3.6	-1.2	-0.8	-0.2	-0.1	0.0	586485.7	4458602.6	586384.2	4458623.5	586374.0	4458625.6	586374.2	4458625.5
761	-3.5	-1.2	-0.8	-0.2	-0.1	-0.1	586477.7	4458573.6	586377.9	4458594.1	586367.6	4458596.2	586364.1	4458597.0
762	-3.5	-1.2	-0.8	-0.2	-0.1	0.0	586471.2	4458544.3	586371.5	4458564.8	586358.3	4458567.5	586358.9	4458567.4
763	-3.5	-1.2	-0.8	-0.2	-0.1	0.0	586462.2	4458515.6	586363.1	4458535.9	586351.6	4458538.3	586352.9	4458538.0
764	-3.7	-1.2	-0.8	-0.1	-0.0	0.1	586459.5	4458485.5	586354.0	4458507.2	586345.5	4458508.9	586349.4	4458508.1
765	-3.9	-1.3	-0.8	-0.2	-0.0	0.1	586457.7	4458455.3	586347.8	4458477.8	586337.8	4458479.9	586343.9	4458478.6
766	-3.9	-1.3	-0.8	-0.2	-0.0	0.3	586454.2	4458425.3	586344.0	4458448.0	586331.0	4458450.6	586342.2	4458448.3
767	-3.8	-1.3	-0.7	-0.2	0.1	0.6	586446.8	4458396.2	586339.1	4458418.4	586325.1	4458421.2	586351.3	4458415.8
768	-3.7	-1.3	-0.8	-0.2	-0.0	0.3	586437.4	4458367.5	586332.7	4458389.0	586317.5	4458392.2	586330.8	4458389.4
769	-3.6	-1.3	-0.8	-0.2	-0.0	0.3	586430.6	4458338.3	586327.1	4458359.5	586312.5	4458362.6	586324.5	4458360.1
770	-3.6	-1.3	-0.8	-0.2	-0.0	0.2	586426.0	4458308.6	586323.6	4458329.6	586310.9	4458332.3	586320.9	4458330.2
771	-3.6	-1.3		-0.2			586422.4	4458278.8	586319.9	4458299.8	586307.6	4458302.3		
772	-3.7	-1.3	-0.8	-0.2	-0.1	0.2	586419.5	4458248.7	586315.8	4458270.0	586302.0	4458272.8	586308.6	4458271.5
773	-3.7	-1.3	-0.8	-0.2	-0.1	0.1	586415.1	4458219.0	586310.5	4458240.5	586297.3	4458243.2	586302.8	4458242.0
774	-3.8	-1.3		-0.2			586410.4	4458189.3	586304.0	4458211.2	586290.4	4458214.0		
775	-3.7	-1.3		-0.2			586403.6	4458160.1	586298.1	4458181.8	586283.9	4458184.7		
776	-3.6	-1.3		-0.3			586396.6	4458130.9	586294.0	4458152.0	586278.1	4458155.2		
777	-3.6	-1.3	-0.8	-0.3	-0.0	0.4	586391.3	4458101.4	586288.4	4458122.5	586272.3	4458125.8	586287.3	4458122.7
778	-3.6	-1.3	-0.8	-0.3	-0.1	0.2	586386.1	4458071.8	586283.0	4458093.0	586265.0	4458096.7	586273.1	4458095.0
779	-3.4	-1.2	-0.8	-0.3	-0.1	0.2	586374.5	4458043.6	586277.8	4458063.4	586260.2	4458067.0	586266.7	4458065.7
780	-3.4	-1.2		-0.3			586369.1	4458014.1	586271.8	4458034.0	586255.2	4458037.4		
781	-3.5	-1.3		-0.3			586365.1	4457984.2	586265.1	4458004.8	586248.4	4458008.2		
782	-3.6	-1.3		-0.3			586359.9	4457954.7	586258.3	4457975.6	586241.3	4457979.0		
783	-3.5		-0.7		0.0		586351.5	4457925.8	586251.5	4457946.3			586255.9	4457945.4
784	-3.6		-0.8		-0.1		586348.1	4457895.9	586244.7	4457917.1			586235.2	4457919.0
785	-3.6		-0.9		-0.1		586341.5	4457866.6	586238.2	4457887.8			586226.1	4457890.3
786	-3.5		-0.8		-0.1		586331.4	4457838.0	586232.0	4457858.5			586220.8	4457860.7
787	-3.5						586325.3	4457808.7	586224.8	4457829.3				
788	-3.5		-0.7		0.0		586319.0	4457779.3	586220.5	4457799.6			586222.9	4457799.1
789	-3.5		-0.8		-0.0		586311.3	4457750.3	586213.3	4457770.4			586209.4	4457771.2
790	-3.5		-0.7		0.0		586304.8	4457721.0	586205.7	4457741.3			586207.1	4457741.1
791	-3.7		-0.6		0.2		586302.2	4457690.9	586198.2	4457712.3			586216.0	4457708.6
792	-3.9						586299.8	4457660.8	586189.8	4457683.3				
793	-4.2		-0.8		0.1		586301.5	4457629.8	586183.7	4457654.0			586190.7	4457652.5
794	-4.5		-1.0		-0.0		586305.5	4457598.4	586178.0	4457624.5			586174.2	4457625.3
795	-4.5		-1.0		0.0		586301.2	4457568.6	586172.2	4457595.1			586173.0	4457594.9

Table B-1. High-Water Shoreline Position Change - Sandy Hook to Barnegat Inlet, New Jersey

High-Water Shoreline Position Change Rate (m/yr)

	1836/39 to			1855/75 to		1932/33 to
Transect #	1855/75	1932/33	1977	1932/33	1977	1977
796	-4.7		-0.8		0.2	
797	-4.8		-0.9		0.1	
798	-4.8		-1.1		-0.1	
799	-4.7		-1.2		-0.2	
800	-4.7		-1.2		-0.3	
801	-4.7		-1.2		-0.3	
802	-4.8					
803	-4.9		-1.1		-0.1	
804	-5.0	-1.7	-1.2	-0.3	-0.2	0.0
805	-5.0	-1.7	-1.2	-0.3	-0.2	-0.2
806	-5.1	-1.7	-1.2	-0.3	-0.2	-0.2
807	-5.1	-1.8	-1.2	-0.3	-0.2	-0.1
808	-5.2	-1.8	-1.2	-0.2	-0.1	0.0
809	-5.3	-1.7	-1.2	-0.2	-0.1	-0.1
810	-5.2	-1.7		-0.1		
811	-5.0	-1.7	-1.0	-0.2	0.0	0.3
812	-4.9	-1.7	-1.1	-0.2	-0.1	0.2
813	-4.8	-1.6	-1.1	-0.2	-0.1	0.0
814	-4.7	-1.6	-1.1	-0.2	-0.1	-0.0
815	-4.5	-1.5	-1.0	-0.2	-0.1	-0.0
816	-4.4	-1.5	-1.0	-0.2	-0.1	-0.0
817	-4.3	-1.4	-1.0	-0.2	-0.1	0.0
818	-4.0	-1.3	-0.9	-0.1	-0.1	-0.1
819	-3.8	-1.3		-0.1		
820	-3.8	-1.2	-0.7	-0.1	0.1	0.5
821	-3.7	-1.2	-0.7	-0.2	0.0	0.3
822	-3.6	-1.2	-0.7	-0.2	0.0	0.3
823	-3.4	-1.2	-0.7	-0.2	0.1	0.5
824	-3.3	-1.2	-0.7	-0.3	-0.1	0.3
825	-3.5	-1.3	-0.8	-0.3	-0.1	0.1
826	-3.5	-1.3	-0.9	-0.3	-0.2	-0.1
827	-3.4	-1.2	-0.9	-0.3	-0.3	-0.3
828	-3.5	-1.2	-1.0	-0.3	-0.3	-0.4
829	-3.5	-1.2	-1.0	-0.3	-0.4	-0.6
830	-3.5	-1.3	-1.1	-0.3	-0.4	-0.7
831	-3.6	-1.3	-1.1	-0.3	-0.5	-0.8
832	-3.7	-1.3		-0.2		
833	-3.9		-1.1		-0.4	
834	-3.8	-1.4	-1.1	-0.4	-0.4	-0.4
835	-3.8	-1.4	-1.1	-0.4	-0.3	-0.2
836	-3.7	-1.4	-1.0	-0.5	-0.2	0.1
837	-3.4	-1.4	-0.6	-0.6	0.2	1.2
838	-3.3	-1.4	-0.7	-0.6	0.0	1.0
839	-3.4	-1.5	-0.8	-0.7	-0.0	0.9
840	-3.4	-1.5	-0.8	-0.7	-0.1	0.7
841	-3.4	-1.5	-0.8	-0.7	-0.2	0.6
842	-3.4	-1.5	-0.9	-0.7	-0.2	0.5
843	-3.4	-1.5	-0.9	-0.7	-0.2	0.5
844				-0.7	-0.2	0.6
845				-0.7	-0.2	0.6
846						
847				-0.6	-0.1	0.6
848				-0.6	-0.2	0.4

High-Water Shoreline Position (UTM Zone 18, NAD 1983)

	1836/39		1855/75		1932/33		1977	
Transect #	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)
796	586299.3	4457538.4	586165.1	4457565.9			586190.4	4457560.7
797	586296.8	4457508.3	586159.6	4457536.4			586172.4	4457533.8
798	586290.4	4457479.0	586154.1	4457506.9			586145.7	4457508.6
799	586283.4	4457449.8	586148.6	4457477.4			586128.1	4457481.6
800	586277.0	4457420.5	586143.2	4457447.9			586114.7	4457453.8
801	586269.5	4457391.4	586135.2	4457418.9			586107.8	4457424.5
802	586264.1	4457361.8	586126.8	4457390.0				
803	586258.8	4457332.3	586119.1	4457361.0			586114.3	4457362.0
804	586254.2	4457302.6	586113.6	4457331.5	586097.4	4457334.8	586097.8	4457334.7
805	586249.9	4457272.9	586107.5	4457302.1	586090.6	4457305.6	586084.4	4457306.9
806	586244.1	4457243.5	586100.4	4457273.0	586083.8	4457276.4	586076.0	4457278.0
807	586240.6	4457213.5	586095.8	4457243.3	586078.3	4457246.9	586074.4	4457247.7
808	586235.4	4457184.0	586088.9	4457214.0	586073.8	4457217.2	586074.5	4457217.0
809	586228.0	4457154.9	586078.6	4457185.5	586069.3	4457187.4	586066.7	4457188.0
810	586219.8	4457125.9	586073.0	4457156.1	586064.9	4457157.7		
811	586210.8	4457097.2	586067.9	4457126.5	586055.1	4457129.1	586069.8	4457126.1
812	586202.7	4457068.2	586063.7	4457096.7	586048.4	4457099.9	586058.0	4457097.9
813	586196.7	4457038.8	586060.4	4457066.8	586047.5	4457069.4	586048.4	4457069.2
814	586189.1	4457009.7	586055.7	4457037.1	586045.3	4457039.2	586044.2	4457039.5
815	586181.6	4456980.7	586053.3	4457007.0	586041.7	4457009.4	586040.6	4457009.6
816	586174.9	4456951.4	586049.3	4456977.2	586037.6	4456979.6	586036.7	4456979.8
817	586167.3	4456922.3	586045.5	4456947.3	586035.0	4456949.5	586035.1	4456949.5
818	586154.9	4456894.3	586041.9	4456917.5	586034.8	4456918.9	586031.5	4456919.6
819	586148.2	4456865.0	586039.8	4456887.3	586033.1	4456888.6		
820	586143.0	4456835.5	586035.8	4456857.5	586029.0	4456858.9	586049.9	4456854.6
821	586136.8	4456806.1	586032.9	4456827.4	586022.6	4456829.5	586036.5	4456826.7
822	586130.3	4456776.8	586029.6	4456797.5	586017.2	4456800.0	586030.5	4456797.3
823	586122.3	4456747.8	586025.9	4456767.6	586011.0	4456770.7	586034.1	4456765.9
824	586115.0	4456718.7	586021.7	4456737.8	586004.0	4456741.5	586015.2	4456739.2
825	586113.6	4456688.4	586013.8	4456708.8	585997.5	4456712.2	586000.7	4456711.5
826	586106.3	4456659.2	586007.4	4456679.5	585991.1	4456682.9	585985.5	4456684.0
827	586099.9	4456629.9	586002.7	4456649.9	585985.5	4456653.4	585972.5	4456656.1
828	586094.7	4456600.4	585996.7	4456620.5	585980.3	4456623.8	585961.4	4456627.7
829	586088.7	4456571.0	585990.6	4456591.1	585974.3	4456594.4	585948.8	4456599.7
830	586084.7	4456541.2	585985.0	4456561.6	585967.8	4456565.2	585939.3	4456571.0
831	586078.0	4456511.9	585977.1	4456532.6	585960.8	4456536.0	585928.6	4456542.6
832	586073.2	4456482.3	585967.9	4456503.9	585953.7	4456506.8		
833	586068.1	4456452.7	585958.7	4456475.1			585914.4	4456484.2
834	586061.2	4456423.5	585952.4	4456445.8	585929.7	4456450.5	585911.7	4456454.2
835	586053.8	4456394.4	585946.4	4456416.4	585921.6	4456421.5	585911.4	4456423.6
836	586044.5	4456365.7	585940.9	4456386.9	585911.5	4456393.0	585914.9	4456392.3
837	586034.3	4456337.1	585936.8	4456357.1	585902.0	4456364.3	585953.3	4456353.8
838	586024.6	4456308.5	585931.4	4456327.6	585891.9	4456335.7	585936.1	4456326.7
839	586020.5	4456278.7	585924.0	4456298.5	585882.2	4456307.1	585919.5	4456299.4
840	586014.1	4456249.4	585917.3	4456269.3	585873.0	4456278.4	585904.9	4456271.8
841	586006.0	4456220.4	585910.5	4456240.0	585868.9	4456248.6	585892.5	4456243.7
842	586000.1	4456191.0	585903.2	4456210.9	585860.8	4456219.6	585882.1	4456215.2
843	585992.9	4456161.9	585895.7	4456181.8	585852.7	4456190.6	585874.0	4456186.3
844			585892.0	4456152.0	585844.6	4456161.7	585869.0	4456156.7
845			585886.1	4456122.5	585842.9	4456131.4	585869.2	4456126.0
846			585880.5	4456093.1				
847			585874.9	4456063.6	585839.3	4456070.9	585864.5	4456065.7
848			585867.7	4456034.4	585832.8	4456041.6	585849.0	4456038.3

Table B-1. High-Water Shoreline Position Change - Sandy Hook to Barnegat Inlet, New Jersey

	High-Water Shoreline Position Change Rate (m/yr)						High-Water Shoreline Position (UTM Zone 18, NAD 1983)									
	1836/39 to			1855/75 to		1932/33 to	1836/39		1855/75		1932/33		1977			
Transect #	1855/75	1932/33	1977	1932/33	1977	1977	Transect #	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)
849				-0.5	-0.3	0.1	849			585860.4	4456005.3	585826.2	4456012.3	585831.7	4456011.2
850				-0.5	-0.3	-0.1	850			585853.0	4455976.2	585819.4	4455983.1	585816.9	4455983.6
851	-2.0	-1.0	-0.7	-0.5	-0.4	-0.2	851	585903.4	4455935.2	585845.6	4455947.1	585812.5	4455953.9	585804.6	4455955.5
852	-2.1	-1.0	-0.8	-0.5	-0.4	-0.3	852	585898.2	4455905.7	585839.2	4455917.8	585805.7	4455924.7	585792.3	4455927.4
853	-2.0	-1.0	-0.8	-0.6	-0.5	-0.4	853	585891.3	4455876.5	585833.7	4455888.3	585798.7	4455895.5	585781.7	4455899.0
854	-2.0	-1.0	-0.8	-0.6	-0.5	-0.4	854	585884.1	4455847.3	585827.0	4455859.1	585791.5	4455866.3	585773.2	4455870.1
855	-1.9	-1.0	-0.8	-0.6	-0.5	-0.4	855	585875.1	4455818.5	585820.1	4455829.8	585784.3	4455837.2	585765.4	4455841.1
856	-1.9	-1.0	-0.8	-0.6	-0.5	-0.4	856	585865.7	4455789.8	585812.1	4455800.9	585777.0	4455808.0	585762.1	4455811.1
857	-1.8	-0.9	-0.8	-0.5	-0.5	-0.4	857	585856.6	4455761.1	585804.6	4455771.8	585770.9	4455778.7	585752.3	4455782.5
858	-1.7	-0.9	-0.8	-0.5	-0.6	-0.7	858	585846.7	4455732.5	585797.2	4455742.7	585764.9	4455749.3	585736.0	4455755.2
859	-1.9	-0.9	-0.9	-0.5	-0.6	-0.8	859	585843.6	4455702.5	585789.8	4455713.5	585758.3	4455720.0	585724.9	4455726.9
860	-1.9	-0.9	-0.9	-0.5	-0.6	-0.8	860	585836.8	4455673.3	585782.9	4455684.3	585751.6	4455690.8	585716.4	4455698.0
861	-2.1	-1.0	-1.0	-0.5	-0.7	-0.9	861	585835.4	4455642.9	585776.7	4455655.0	585744.9	4455661.5	585707.6	4455669.2
862	-2.2	-1.1	-1.0	-0.5	-0.7	-0.9	862	585834.9	4455612.4	585772.8	4455625.2	585738.2	4455632.3	585698.8	4455640.4
863	-2.3		-1.0		-0.7		863	585831.7	4455582.5	585767.0	4455595.7			585693.3	4455610.9
864	-2.3	-1.2	-0.8	-0.7	-0.4	0.0	864	585823.7	4455553.5	585758.4	4455566.9	585713.4	4455576.1	585713.6	4455576.1
865	-2.5	-1.3	-0.8	-0.7	-0.4	0.1	865	585821.5	4455523.3	585751.7	4455537.6	585706.2	4455547.0	585708.8	4455546.4
866	-2.6	-1.3	-0.9	-0.7	-0.4	0.0	866	585817.4	4455493.5	585745.0	4455508.4	585699.9	4455517.6	585701.6	4455517.3
867	-2.5	-1.3	-0.7	-0.7	-0.2	0.6	867	585810.5	4455464.3	585738.5	4455479.1	585693.9	4455488.2	585721.4	4455482.6
868	-2.6	-1.3	-0.8	-0.7	-0.3	0.3	868	585804.3	4455434.9	585731.7	4455449.8	585687.9	4455458.8	585700.3	4455456.3
869	-2.5	-1.3	-0.8	-0.7	-0.4	0.0	869	585796.8	4455405.9	585724.7	4455420.7	585681.0	4455429.6	585682.7	4455429.3
870	-2.6	-1.3	-0.9	-0.7	-0.4	-0.1	870	585788.5	4455376.9	585714.9	4455392.0	585673.5	4455400.6	585667.6	4455401.8
871	-2.7	-1.3	-0.9	-0.6	-0.5	-0.3	871	585781.4	4455347.8	585704.3	4455363.6	585666.5	4455371.4	585654.4	4455373.8
872	-2.6	-1.2	-0.9	-0.6	-0.5	-0.4	872	585771.4	4455319.2	585697.5	4455334.4	585659.5	4455342.2	585643.8	4455345.4
873	-2.3	-1.1	-0.9	-0.6	-0.5	-0.4	873	585757.7	4455291.4	585691.3	4455305.0	585652.5	4455313.0	585636.4	4455316.3
874	-2.2	-1.1	-0.8	-0.6	-0.5	-0.2	874	585748.6	4455262.6	585685.1	4455275.7	585645.4	4455283.8	585634.9	4455286.0
875	-2.1	-1.1	-0.7	-0.6	-0.3	0.3	875	585739.5	4455233.9	585679.8	4455246.1	585638.8	4455254.5	585650.0	4455252.2
876	-2.0	-1.1	-0.6	-0.7	-0.3	0.3	876	585730.9	4455205.0	585674.8	4455216.5	585633.1	4455225.1	585646.2	4455222.4
877	-2.0	-1.0	-0.6	-0.6	-0.2	0.4	877	585722.1	4455176.2	585666.4	4455187.6	585627.3	4455195.6	585645.1	4455192.0
878	-1.8	-1.0	-0.5	-0.6	-0.1	0.6	878	585713.1	4455147.4	585661.2	4455158.1	585620.4	4455166.4	585647.7	4455160.8
879	-1.5	-0.9	-0.4	-0.7	-0.1	0.9	879	585698.4	4455119.8	585656.1	4455128.5	585612.9	4455137.4	585649.3	4455129.9
880	-1.4	-0.9	-0.5	-0.7	-0.2	0.6	880	585690.8	4455090.7	585650.2	4455099.1	585606.5	4455108.1	585630.4	4455103.1
881	-1.4	-0.9	-0.5	-0.7	-0.3	0.3	881	585683.5	4455061.6	585644.1	4455069.7	585600.0	4455078.8	585613.4	4455076.0
882	-1.3	-0.9	-0.5	-0.7	-0.3	0.1	882	585671.6	4455033.4	585635.1	4455040.9	585593.5	4455049.5	585599.5	4455048.2
883	-1.2	-0.8	-0.5	-0.7	-0.4	0.1	883	585664.4	4455004.3	585629.3	4455011.5	585587.1	4455020.2	585592.1	4455019.1
884	-1.3	-0.8	-0.5	-0.6	-0.3	0.1	884	585656.9	4454975.2	585620.9	4454982.6	585580.6	4454990.9	585585.2	4454989.9
885	-1.2	-0.8	-0.5	-0.6	-0.3	0.1	885	585649.5	4454946.1	585614.7	4454953.2	585574.0	4454961.6	585579.3	4454960.5
886	-1.2	-0.8	-0.5	-0.7	-0.3	0.2	886	585643.0	4454916.8	585608.6	4454923.9	585567.5	4454932.3	585574.1	4454930.9
887	-1.2	-0.8	-0.5	-0.7	-0.3	0.3	887	585637.7	4454887.3	585602.5	4454894.5	585561.0	4454903.0	585574.7	4454900.2
888	-1.3	-0.9	-0.5	-0.7	-0.2	0.4	888	585633.1	4454857.6	585596.0	4454865.2	585554.4	4454873.7	585572.5	4454870.0
889	-1.5	-0.9	-0.6	-0.6	-0.3	0.2	889	585629.3	4454827.7	585586.8	4454836.5	585547.9	4454844.4	585555.7	4454842.8
890	-1.7	-0.9	-0.6	-0.6	-0.3	0.1	890	585625.9	4454797.8	585578.8	4454807.5	585541.4	4454815.2	585545.1	4454814.4
891	-1.9	-1.0	-0.6	-0.6	-0.3	0.1	891	585624.8	4454767.4	585572.3	4454778.2	585534.8	4454785.9	585538.0	4454785.2
892	-2.0	-1.0	-0.7	-0.6	-0.3	0.1	892	585622.2	4454737.3	585566.3	4454748.8	585528.4	4454756.6	585531.3	4454756.0
893	-2.0	-1.0	-0.7	-0.6	-0.3	0.1	893	585615.1	4454708.1	585558.8	4454719.7	585522.2	4454727.2	585524.7	4454726.7
894	-1.9	-1.0	-0.7	-0.6	-0.3	0.0	894	585607.4	4454679.1	585552.9	4454690.3	585516.0	4454697.9	585517.5	4454697.5
895	-1.9		-0.6		-0.3		895	585598.8	4454650.2	585545.7	4454661.1			585518.3	4454666.8
896	-2.0		-0.5		-0.1		896	585593.0	4454620.8	585536.4	4454632.4			585530.6	4454633.6
897	-2.0						897	585587.0	4454591.4	585531.5	4454602.8				
898	-1.8						898	585578.4	4454562.6	585527.2	4454573.1				
899	-1.6		0.2		0.7		899	585568.2	4454534.0	585521.9	4454543.5			585598.6	4454527.8
900	-1.7		0.0		0.5		900	585561.6	4454504.7	585514.7	4454514.4			585564.9	4454504.1
901	-1.7	-0.3	-0.1	0.3	0.4	0.4	901	585553.5	4454475.8	585506.1	4454485.5	585527.2	4454481.2	585544.4	4454477.7

Table B-1. High-Water Shoreline Position Change - Sandy Hook to Barnegat Inlet, New Jersey

	High-Water Shoreline Position Change Rate (m/yr)						High-Water Shoreline Position (UTM Zone 18, NAD 1983)							
	1836/39 to			1855/75 to		1932/33 to	1836/39		1855/75		1932/33		1977	
Transect #	1855/75	1932/33	1977	1932/33	1977	1977	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)
902	-1.8	-0.5	-0.2	0.1	0.3	0.5	585550.8	4454445.7	585500.6	4454456.0	585505.8	4454455.0	585527.7	4454450.4
903	-1.9	-0.6	-0.3	-0.1	0.2	0.5	585549.4	4454415.4	585494.9	4454426.6	585490.4	4454427.5	585513.2	4454422.8
904	-2.1	-0.7	-0.3	-0.0	0.1	0.4	585546.3	4454385.4	585487.8	4454397.4	585485.2	4454397.9	585502.4	4454394.4
905	-2.2	-0.6	-0.4	0.1	0.1	0.2	585541.1	4454355.8	585479.1	4454368.6	585487.9	4454366.7	585494.5	4454365.4
906	-2.2	-0.7	-0.3	0.0	0.1	0.4	585532.5	4454327.0	585471.3	4454339.5	585471.1	4454339.6	585486.5	4454336.4
907	-2.3	-0.8	-0.4	-0.1	0.1	0.4	585528.9	4454297.1	585463.0	4454310.6	585457.2	4454311.8	585474.7	4454308.2
908	-2.5	-0.9	-0.5	-0.1	0.0	0.3	585526.4	4454267.0	585456.1	4454281.4	585447.9	4454283.1	585459.6	4454280.7
909	-2.4	-0.8	-0.5	-0.1	-0.0	0.1	585517.7	4454238.1	585448.6	4454252.3	585442.2	4454253.6	585446.7	4454252.7
910	-2.6		-0.6		-0.1		585514.6	4454208.1	585441.4	4454223.2			585433.7	4454224.8
911	-2.4		-0.6		-0.1		585506.3	4454179.2	585437.2	4454193.4			585422.6	4454196.4
912	-2.3		-0.6		-0.2		585495.8	4454150.8	585430.4	4454164.2			585412.0	4454167.9
913	-2.2		-0.6		-0.2		585487.7	4454121.8	585424.3	4454134.8			585403.0	4454139.2
914	-2.3		-0.7		-0.3		585484.1	4454091.9	585417.5	4454105.6			585389.9	4454111.2
915	-2.3		-0.7		-0.3		585477.4	4454062.7	585412.7	4454075.9			585381.8	4454082.3
916	-2.1		-0.7		-0.3		585468.7	4454033.8	585409.7	4454045.9			585373.8	4454053.3
917	-1.7		-0.7		-0.4		585454.9	4454006.0	585406.9	4454015.9			585367.2	4454024.0
918	-1.4		-0.6		-0.4		585444.5	4453977.5	585404.8	4453985.7			585364.2	4453994.0
919	-1.2		-0.6		-0.4		585438.0	4453948.2	585403.8	4453955.3			585359.2	4453964.4
920	-1.2		-0.6		-0.4		585432.7	4453918.7	585400.1	4453925.4			585355.6	4453934.5
921	-1.1		-0.6		-0.4		585427.9	4453889.1	585397.6	4453895.3			585353.4	4453904.4
922			-0.5				585423.9	4453859.3					585360.0	4453872.4
923			-0.4				585418.9	4453829.7					585360.6	4453841.6
924							585415.9	4453799.6						
925	-0.9		0.2		0.4		585408.2	4453770.6	585383.1	4453775.8			585430.1	4453766.1
926	-0.7		0.1		0.3		585400.9	4453741.5	585381.2	4453745.5			585414.7	4453738.6
927	-0.8	0.2	0.1	0.6	0.3	-0.2	585394.2	4453712.2	585371.4	4453716.9	585408.1	4453709.4	585401.0	4453710.8
928	-0.8	-0.0	0.0	0.3	0.2	0.0	585388.2	4453682.8	585365.5	4453687.5	585387.3	4453683.0	585387.7	4453682.9
929	-0.9	-0.1	-0.0	0.3	0.2	0.1	585381.1	4453653.7	585355.2	4453659.0	585373.1	4453655.3	585377.8	4453654.3
930	-1.0	-0.2	-0.0	0.2	0.2	0.2	585376.0	4453624.1	585348.5	4453629.7	585361.0	4453627.2	585370.6	4453625.2
931	-0.9	-0.2	0.0	0.2	0.2	0.3	585367.8	4453595.1	585343.4	4453600.2	585354.0	4453598.0	585367.5	4453595.2
932	-0.9	-0.2	0.1	0.2	0.3	0.5	585362.7	4453565.6	585337.4	4453570.7	585349.3	4453568.3	585369.3	4453564.2
933	-1.0	-0.2	0.1	0.2	0.4	0.6	585357.6	4453536.0	585328.5	4453542.0	585342.5	4453539.1	585369.8	4453533.5
934	-1.1	-0.2	0.0	0.3	0.3	0.4	585348.7	4453507.2	585318.0	4453513.5	585334.5	4453510.1	585353.4	4453506.2
935	-0.9	-0.1	0.0	0.2	0.3	0.3	585338.4	4453478.7	585312.2	4453484.1	585326.0	4453481.2	585338.5	4453478.7
936	-0.7	-0.1	-0.0	0.1	0.2	0.2	585328.0	4453450.2	585309.0	4453454.1	585316.7	4453452.5	585324.8	4453450.8
937	-0.9	-0.2	-0.1	0.1	0.1	0.2	585324.5	4453420.3	585299.8	4453425.4	585304.9	4453424.3	585312.6	4453422.7
938	-1.0	-0.3	-0.1	0.1	0.1	0.1	585322.9	4453390.0	585295.6	4453395.6	585300.0	4453394.7	585304.4	4453393.8
939	-0.9	-0.2	-0.1	0.1	0.1	0.0	585315.9	4453360.8	585291.3	4453365.8	585298.2	4453364.4	585299.2	4453364.2
940	-0.9	-0.1	-0.1	0.2	0.1	-0.0	585308.6	4453331.7	585282.3	4453337.1	585297.5	4453333.9	585295.9	4453334.3
941	-0.9	0.0	-0.0	0.4	0.2	-0.1	585301.0	4453302.6	585274.4	4453308.1	585301.2	4453302.6	585295.1	4453303.8
942	-1.0	0.1	0.0	0.6	0.3	-0.3	585292.3	4453273.7	585263.8	4453279.6	585303.1	4453271.5	585292.1	4453273.8
943	-1.0	0.1	-0.1	0.5	0.1	-0.5	585283.6	4453244.9	585256.3	4453250.5	585290.9	4453243.4	585269.5	4453247.8
944	-1.0	0.0	-0.1	0.4	0.1	-0.5	585275.3	4453216.0	585247.1	4453221.8	585275.4	4453216.0	585255.8	4453220.0
945	-1.1	-0.1	-0.2	0.4	0.1	-0.3	585267.5	4453187.0	585237.3	4453193.2	585262.4	4453188.0	585247.8	4453191.0
946	-1.0	-0.1	-0.1	0.3	0.1	-0.2	585259.2	4453158.0	585232.3	4453163.6	585251.5	4453159.6	585243.4	4453161.3
947	-0.9	-0.1		0.3			585251.5	4453129.0	585225.7	4453134.3	585241.8	4453131.0		
948	-1.0						585242.9	4453100.2	585215.4	4453105.8				
949	-1.0						585234.7	4453071.2	585207.4	4453076.8				
950	-1.1						585230.4	4453041.5	585200.4	4453047.6				
951	-1.3	-0.2	0.1	0.3	0.5	0.8	585230.4	4453010.8	585193.3	4453018.4	585214.6	4453014.1	585248.8	4453007.1
952	-1.3	-0.2	0.0	0.3	0.4	0.6	585225.1	4452981.3	585187.5	4452989.0	585204.4	4452985.5	585229.3	4452980.4
953	-1.3	-0.1	0.0	0.4	0.4	0.4	585218.4	4452952.0	585182.4	4452959.4	585205.2	4452954.8	585221.9	4452951.3
954	-1.3	0.0	0.0	0.6	0.4	0.1	585212.3	4452922.7	585174.9	4452930.4	585213.3	4452922.5	585217.6	4452921.6

Table B-1. High-Water Shoreline Position Change - Sandy Hook to Barnegat Inlet, New Jersey

	High-Water Shoreline Position Change Rate (m/yr)					
	1836/39 to			1855/75 to		1932/33 to
Transect #	1855/75	1932/33	1977	1932/33	1977	1977
955	-1.3	0.2	0.1	0.9	0.5	-0.2
956	-1.4	0.2	0.2	0.9	0.6	0.2
957	-1.4	0.1	0.1	0.7	0.5	0.1
958	-1.5	-0.0	-0.0	0.7	0.4	0.0
959	-1.5	-0.1	-0.1	0.6	0.3	-0.0
960	-1.4	-0.1	-0.1	0.4	0.3	-0.0
961	-1.5	-0.2	-0.1	0.4	0.2	-0.0
962	-1.6	-0.2	-0.2	0.4	0.2	-0.1
963	-1.4	-0.2	-0.2	0.3	0.1	-0.2
964	-1.4	-0.3	-0.2	0.3	0.1	-0.2
965	-1.3	-0.2	-0.2	0.2	0.1	-0.0
966	-1.3	-0.3	-0.1	0.2	0.2	0.1
967	-1.3	-0.3	-0.1	0.2	0.3	0.3
968	-1.3	-0.2	0.2	0.3	0.6	1.1
969	-1.3	-0.2	0.1	0.2	0.5	0.9
970	-1.3	-0.3	0.1	0.2	0.4	0.8
971	-1.1	-0.2	0.1	0.2	0.4	0.7
972	-1.0		0.1		0.3	
973	-0.8		0.1		0.3	
974	-0.9		0.1		0.3	
975	-1.1					
976	-1.2					
977	-1.2		0.2		0.5	
978	-1.1		0.1		0.4	
979	-1.1	-0.4	0.0	-0.0	0.3	0.9
980	-1.1	-0.5	-0.0	-0.2	0.3	1.0
981	-1.4	-0.7	-0.1	-0.3	0.2	0.9
982	-1.6	-0.7		-0.3		
983	-1.5	-0.7		-0.3		
984	-1.6	-0.7		-0.3		
985	-1.6	-0.8		-0.4		
986	-1.7	-0.8		-0.4		
987	-1.7	-0.8		-0.4		
988	-1.6	-0.8		-0.4		
989	-1.7	-0.8		-0.4		
990	-1.8	-0.8		-0.3		
991	-1.7	-0.8		-0.4		
992	-1.8	-0.8		-0.4		
993	-2.0	-0.9		-0.4		
994	-2.3	-0.9		-0.3		
995	-2.2	-0.9		-0.3		
996	-1.9	-0.9		-0.4		
997	-1.8	-0.9		-0.4		
998	-1.9	-0.9		-0.5		
999	-1.9	-0.9		-0.5		
1000	-1.8	-0.9		-0.5		
1001	-1.7	-0.9		-0.5		
1002	-1.6	-0.9		-0.6		
1003	-1.8	-1.0		-0.6		
1004		-1.1				
1005		-1.1				
1006		-1.2				
1007						

	High-Water Shoreline Position (UTM Zone 18, NAD 1983)							
	1836/39		1855/75		1932/33		1977	
Transect #	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)
955	585206.5	4452893.2	585168.4	4452901.1	585225.8	4452889.3	585216.9	4452891.1
956	585200.9	4452863.8	585161.1	4452871.9	585218.3	4452860.2	585227.9	4452858.2
957	585197.6	4452833.8	585156.9	4452842.2	585203.1	4452832.7	585207.5	4452831.8
958	585189.9	4452804.8	585147.0	4452813.6	585189.0	4452804.9	585189.1	4452804.9
959	585180.9	4452776.0	585137.8	4452784.8	585174.3	4452777.3	585172.5	4452777.7
960	585173.1	4452747.0	585132.9	4452755.2	585161.1	4452749.4	585159.9	4452749.7
961	585166.7	4452717.6	585123.7	4452726.5	585148.7	4452721.3	585147.9	4452721.5
962	585158.2	4452688.8	585114.2	4452697.8	585139.4	4452692.6	585135.8	4452693.4
963	585151.2	4452659.6	585112.0	4452667.6	585133.4	4452663.2	585125.9	4452664.8
964	585147.5	4452629.7	585108.2	4452637.8	585124.5	4452634.4	585118.1	4452635.7
965	585138.4	4452601.0	585100.5	4452608.7	585116.1	4452605.5	585115.0	4452605.8
966	585131.8	4452571.7	585093.9	4452579.5	585107.3	4452576.7	585112.6	4452575.6
967	585123.6	4452542.8	585085.5	4452550.6	585099.4	4452547.7	585113.1	4452544.9
968	585114.1	4452514.1	585078.4	4452521.4	585094.5	4452518.1	585141.2	4452508.5
969	585109.2	4452484.5	585073.4	4452491.8	585088.2	4452488.8	585125.8	4452481.1
970	585102.8	4452455.1	585066.2	4452462.7	585078.8	4452460.1	585110.9	4452453.5
971	585090.1	4452427.1	585060.1	4452433.3	585069.4	4452431.4	585097.7	4452425.6
972	585082.4	4452398.1	585053.2	4452404.1			585088.5	4452396.8
973	585071.6	4452369.7	585048.7	4452374.4			585084.0	4452367.1
974	585066.4	4452340.1	585041.9	4452345.1			585073.9	4452338.6
975	585066.1	4452309.5	585036.0	4452315.7				
976	585064.8	4452279.2	585031.4	4452286.1				
977	585056.9	4452250.2	585023.7	4452257.0			585081.6	4452245.1
978	585048.4	4452221.3	585017.2	4452227.7			585064.3	4452218.0
979	585043.4	4452191.7	585012.7	4452198.0	585009.9	4452198.6	585047.2	4452190.9
980	585037.7	4452162.3	585006.6	4452168.6	584991.6	4452171.7	585033.5	4452163.1
981	585038.8	4452131.4	584998.1	4452139.7	584979.3	4452143.6	585019.3	4452135.4
982	585034.9	4452101.6	584990.2	4452110.8	584969.4	4452115.0		
983	585022.9	4452073.4	584979.2	4452082.4	584958.3	4452086.7		
984	585014.5	4452044.5	584969.6	4452053.7	584948.6	4452058.0		
985	585010.4	4452014.7	584963.9	4452024.3	584939.6	4452029.3		
986	585005.1	4451985.2	584957.8	4451994.9	584932.2	4452000.2		
987	584996.1	4451956.4	584947.9	4451966.3	584924.5	4451971.1		
988	584984.7	4451928.1	584940.4	4451937.2	584915.3	4451942.4		
989	584977.7	4451898.9	584930.7	4451908.6	584908.4	4451913.2		
990	584972.8	4451869.3	584923.1	4451879.5	584901.6	4451883.9		
991	584966.1	4451840.1	584916.9	4451850.2	584894.8	4451854.7		
992	584961.1	4451810.5	584910.5	4451820.8	584887.6	4451825.6		
993	584957.1	4451780.7	584901.6	4451792.1	584878.7	4451796.8		
994	584957.1	4451750.0	584892.0	4451763.4	584872.2	4451767.5		
995	584946.8	4451721.5	584885.5	4451734.1	584866.1	4451738.1		
996	584937.3	4451692.9	584883.2	4451704.0	584858.0	4451709.1		
997	584929.4	4451663.8	584877.5	4451674.5	584849.4	4451680.3		
998	584923.3	4451634.5	584870.1	4451645.4	584840.5	4451651.5		
999	584915.7	4451605.4	584863.1	4451616.2	584833.2	4451622.3		
1000	584906.7	4451576.6	584856.8	4451586.9	584825.7	4451593.2		
1001	584900.2	4451547.3	584852.0	4451557.2	584818.7	4451564.1		
1002	584892.9	4451518.2	584847.0	4451527.6	584810.8	4451535.1		
1003	584892.5	4451487.7	584842.2	4451498.0	584803.2	4451506.0		
1004	584893.7	4451456.8			584796.1	4451476.8		
1005	584892.5	4451426.4			584788.4	4451447.8		
1006	584887.0	4451396.9			584779.5	4451419.0		
1007	584879.5	4451367.8						

Table B-1. High-Water Shoreline Position Change - Sandy Hook to Barnegat Inlet, New Jersey

High-Water Shoreline Position Change Rate (m/yr)

	1836/39 to			1855/75 to		1932/33 to
Transect #	1855/75	1932/33	1977	1932/33	1977	1977
1008						
1009	-2.1	-1.2		-0.8		
1010	-2.1	-1.2		-0.8		
1011	-2.1	-1.2		-0.8		
1012	-2.2	-1.2		-0.8		
1013	-2.2	-1.2		-0.8		
1014	-2.1	-1.2		-0.8		
1015	-2.0	-1.2		-0.9		
1016	-2.0	-1.2		-0.9		
1017	-1.9	-1.3		-1.0		
1018	-1.8	-1.3		-1.0		
1019	-1.7	-1.3		-1.1		
1020	-1.8	-1.3		-1.0		
1021	-1.9	-1.3		-1.0		
1022	-1.9	-1.3		-1.0		
1023	-2.0	-1.4		-1.1		
1024	-2.2	-1.4		-1.1		
1025	-2.3	-1.4		-1.0		
1026	-2.5	-1.5		-1.1		
1027	-2.4	-1.5		-1.0		
1028	-2.5	-1.5		-1.1		
1029	-2.4	-1.5		-1.0		
1030	-2.5	-1.4		-1.0		
1031	-2.5					
1032	-2.5	-1.6		-1.2		
1033	-2.4	-1.6		-1.2		
1034	-2.4	-1.6		-1.2		
1035	-2.5	-1.6		-1.2		
1036	-2.5	-1.6		-1.2		
1037	-2.6	-1.6		-1.2		
1038	-2.5	-1.6		-1.2		
1039	-2.4	-1.6		-1.2		
1040	-2.5	-1.6		-1.2		
1041	-2.5					
1042	-2.5	-1.6		-1.2		
1043	-2.7	-1.6		-1.1		
1044	-2.6	-1.5		-1.1		
1045	-2.5	-1.6		-1.1		
1046	-2.4	-1.5		-1.0		
1047	-2.5	-1.5		-1.1		
1048	-2.5	-1.6		-1.3		
1049	-2.4					
1050	-2.5	-1.6		-1.1		
1051	-2.5	-1.6		-1.2		
1052	-2.6	-1.6		-1.2		
1053	-2.5	-1.6		-1.2		
1054	-2.6	-1.6		-1.2		
1055	-2.6	-1.6		-1.1		
1056	-2.5	-1.6		-1.2		
1057	-2.4	-1.7		-1.4		
1058	-2.3	-1.6		-1.3		
1059	-2.2	-1.4		-1.0		
1060	-2.1	-1.2		-0.8		

High-Water Shoreline Position (UTM Zone 18, NAD 1983)

	1836/39		1855/75		1932/33		1977	
Transect #	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)
1008	584870.6	4451339.0						
1009	584861.7	4451310.2	584802.4	4451322.4	584754.2	4451332.3		
1010	584854.3	4451281.1	584795.6	4451293.2	584745.9	4451303.4		
1011	584847.5	4451251.9	584787.2	4451264.3	584735.8	4451274.8		
1012	584841.1	4451222.6	584779.3	4451235.3	584730.5	4451245.3		
1013	584833.1	4451193.6	584771.0	4451206.3	584721.6	4451216.5		
1014	584824.1	4451164.8	584763.6	4451177.2	584712.2	4451187.8		
1015	584814.9	4451136.1	584758.1	4451147.8	584702.7	4451159.1		
1016	584806.7	4451107.2	584751.2	4451118.5	584692.8	4451130.5		
1017	584798.2	4451078.3	584743.9	4451089.4	584681.4	4451102.3		
1018	584788.6	4451049.6	584736.7	4451060.3	584670.6	4451073.8		
1019	584778.5	4451021.1	584729.8	4451031.1	584662.5	4451044.9		
1020	584770.4	4450992.1	584719.9	4451002.5	584654.7	4451015.9		
1021	584764.1	4450962.8	584711.3	4450973.6	584648.5	4450986.5		
1022	584758.0	4450933.4	584703.0	4450944.7	584639.3	4450957.8		
1023	584752.7	4450903.9	584696.8	4450915.3	584627.4	4450929.6		
1024	584750.1	4450873.8	584689.1	4450886.3	584620.1	4450900.5		
1025	584746.7	4450843.8	584680.2	4450857.5	584613.9	4450871.1		
1026	584741.7	4450814.2	584671.2	4450828.7	584604.3	4450842.4		
1027	584731.5	4450785.7	584663.2	4450799.7	584597.1	4450813.3		
1028	584727.0	4450756.0	584655.7	4450770.6	584588.9	4450784.3		
1029	584715.1	4450727.8	584647.4	4450741.7	584581.7	4450755.2		
1030	584709.0	4450698.4	584638.7	4450712.9	584577.2	4450725.5		
1031	584703.3	4450669.0	584631.4	4450683.8				
1032	584696.8	4450639.7	584625.0	4450654.4	584549.3	4450670.0		
1033	584689.0	4450610.7	584619.7	4450624.9	584543.3	4450640.6		
1034	584681.9	4450581.5	584614.3	4450595.4	584536.3	4450611.4		
1035	584678.1	4450551.7	584607.0	4450566.3	584528.2	4450582.4		
1036	584670.2	4450522.7	584598.7	4450537.3	584521.9	4450553.1		
1037	584663.3	4450493.5	584590.6	4450508.4	584514.8	4450523.9		
1038	584653.1	4450464.9	584583.6	4450479.2	584507.5	4450494.8		
1039	584646.1	4450435.7	584577.6	4450449.8	584498.5	4450466.0		
1040	584641.0	4450406.2	584570.9	4450420.5	584493.2	4450436.5		
1041	584635.8	4450376.6	584563.7	4450391.4				
1042	584626.9	4450347.8	584554.8	4450362.6	584479.7	4450378.0		
1043	584623.7	4450317.8	584546.4	4450333.7	584478.4	4450347.7		
1044	584611.3	4450289.7	584538.6	4450304.7	584471.7	4450318.4		
1045	584603.4	4450260.7	584531.7	4450275.4	584460.2	4450290.1		
1046	584595.0	4450231.8	584527.2	4450245.8	584461.0	4450259.4		
1047	584593.4	4450201.5	584523.0	4450216.0	584451.4	4450230.7		
1048	584590.2	4450171.6	584518.9	4450186.2	584439.5	4450202.5		
1049	584580.2	4450143.0	584511.2	4450157.2				
1050	584574.3	4450113.6	584502.6	4450128.3	584430.7	4450143.1		
1051	584567.1	4450084.4	584495.9	4450099.1	584421.3	4450114.4		
1052	584562.5	4450054.8	584489.9	4450069.7	584414.1	4450085.2		
1053	584555.3	4450025.6	584484.9	4450040.1	584407.5	4450055.9		
1054	584552.4	4449995.6	584480.0	4450010.4	584401.4	4450026.6		
1055	584549.5	4449965.5	584475.0	4449980.8	584405.5	4449995.1		
1056	584542.7	4449936.3	584470.5	4449951.1	584393.8	4449966.9		
1057	584535.4	4449907.2	584466.5	4449921.3	584380.7	4449939.0		
1058	584527.9	4449878.1	584461.5	4449891.7	584379.9	4449908.5		
1059	584517.8	4449849.6	584456.3	4449862.2	584390.7	4449875.6		
1060	584510.1	4449820.5	584450.4	4449832.8	584397.9	4449843.5		

Table B-1. High-Water Shoreline Position Change - Sandy Hook to Barnegat Inlet, New Jersey

	High-Water Shoreline Position Change Rate (m/yr)						High-Water Shoreline Position (UTM Zone 18, NAD 1983)									
	1836/39 to			1855/75 to		1932/33 to	1836/39		1855/75		1932/33		1977			
Transect #	1855/75	1932/33	1977	1932/33	1977	1977	Transect #	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)
1061	-2.1						1061	584503.6	4449791.2	584444.4	4449803.4				
1062	-2.1	-1.1		-0.7			1062	584496.9	4449762.0	584437.8	4449774.1	584393.1	4449783.3		
1063	-2.1	-1.1		-0.7			1063	584489.8	4449732.8	584431.2	4449744.8	584387.8	4449753.7		
1064	-2.0	-1.1		-0.7			1064	584481.1	4449704.0	584424.5	4449715.6	584382.1	4449724.3		
1065	-1.9						1065	584470.5	4449675.5	584415.3	4449686.8				
1066	-1.8						1066	584461.2	4449646.8	584409.0	4449657.5				
1067	-1.8	-1.0		-0.7			1067	584456.2	4449617.2	584404.4	4449627.8	584362.4	4449636.4		
1068	-1.7	-1.0		-0.7			1068	584449.0	4449588.0	584399.9	4449598.1	584354.9	4449607.4		
1069	-1.2	-0.9		-0.7			1069	584430.9	4449561.1	584396.5	4449568.2	584352.9	4449577.1		
1070	-1.1	-0.8		-0.7			1070	584424.0	4449531.9	584393.7	4449538.2	584350.8	4449546.9		
1071	-1.2	-0.9		-0.8			1071	584426.7	4449500.8	584391.9	4449507.9	584341.1	4449518.3		
1072	-1.1	-1.0		-0.9			1072	584422.8	4449470.9	584390.8	4449477.5	584335.7	4449488.8		
1073	-1.2	-1.0		-0.9			1073	584422.5	4449440.4	584387.5	4449447.6	584332.8	4449458.8		
1074	-1.1	-1.0		-0.9			1074	584413.8	4449411.5	584383.4	4449417.8	584323.3	4449430.1		
1075	-0.7	-0.9		-1.0			1075	584402.6	4449383.2	584381.9	4449387.4	584316.8	4449400.8		
1076	-0.1	-0.8		-1.0			1076	584384.0	4449356.4	584380.3	4449357.1	584314.5	4449370.7		
1077	0.8	-0.4		-1.0			1077	584357.3	4449331.2	584380.3	4449326.5	584317.8	4449339.4		
1078				-1.0			1078			584378.4	4449296.3	584317.0	4449308.9		
1079				-1.1			1079			584370.8	4449267.2	584302.4	4449281.3		
1080				-0.8			1080			584346.9	4449241.5	584297.6	4449251.6		
1081	-1.0						1081	584412.5	4449178.5	584376.5	4449186.5				
1082	-1.0						1082	584401.0	4449150.3	584365.8	4449158.1				
1083	-1.1						1083	584391.3	4449121.8	584353.3	4449130.2				
1084	-1.1						1084	584381.3	4449093.3	584344.3	4449101.4				
1085	-1.1						1085	584373.1	4449064.4	584335.6	4449072.7				
1086	-1.1						1086	584365.7	4449035.3	584326.2	4449044.0				
1087	-1.1						1087	584354.1	4449007.1	584317.1	4449015.3				
1088	-1.1						1088	584345.1	4448978.4	584306.6	4448986.9				
1089	-1.0						1089	584329.9	4448951.0	584295.9	4448958.5				
1090	-0.8		1.1		1.8		1090	584318.9	4448922.7	584290.1	4448929.1			584472.0	4448888.8
1091	-0.8	0.2	1.0	0.7	1.7	2.9	1091	584313.0	4448893.3	584286.5	4448899.2	584327.4	4448890.1	584451.7	4448862.6
1092	-0.8	0.1	0.9	0.7	1.5	2.7	1092	584304.4	4448864.5	584277.4	4448870.5	584316.5	4448861.8	584430.8	4448836.5
1093	-0.8		0.9		1.5		1093	584296.7	4448835.5	584267.3	4448842.0			584414.4	4448809.4
1094	-0.9	0.1	0.8	0.7	1.4	2.3	1094	584291.9	4448805.8	584260.7	4448812.7	584300.6	4448803.9	584398.7	4448782.1
1095	-0.8	0.1	0.8	0.7	1.3	2.1	1095	584282.0	4448777.3	584254.1	4448783.4	584292.7	4448774.9	584383.4	4448754.8
1096	-0.7	0.2	0.7	0.7	1.2	1.9	1096	584269.2	4448749.4	584246.4	4448754.4	584284.9	4448745.9	584368.3	4448727.4
1097	-0.5	0.2	0.7	0.7	1.2	1.8	1097	584256.1	4448721.5	584238.4	4448725.5	584276.3	4448717.1	584354.7	4448699.7
1098	-0.6	0.2	0.7	0.7	1.1	1.7	1098	584249.8	4448692.2	584228.8	4448696.9	584265.6	4448688.7	584340.1	4448672.2
1099	-0.7	0.1	0.6	0.6	1.1	1.7	1099	584244.4	4448662.7	584219.7	4448668.2	584253.4	4448660.7	584327.6	4448644.2
1100	-0.7	0.1	0.6	0.5	1.0	1.7	1100	584238.1	4448633.4	584212.1	4448639.1	584242.5	4448632.4	584314.5	4448616.4
1101	-0.7	0.0	0.5	0.5	1.0	1.6	1101	584229.5	4448604.5	584204.4	4448610.1	584231.9	4448604.0	584302.3	4448588.4
1102	-0.7	-0.0	0.5	0.4	0.9	1.7	1102	584220.1	4448575.9	584194.9	4448581.5	584217.9	4448576.4	584288.7	4448560.7
1103	-0.8	-0.1	0.5	0.4	0.9	1.6	1103	584212.4	4448546.9	584185.6	4448552.8	584206.2	4448548.2	584276.3	4448532.7
1104	-0.8	-0.1	0.4	0.3	0.9	1.6	1104	584205.4	4448517.7	584177.5	4448523.9	584195.7	4448519.8	584264.3	4448504.6
1105	-0.8	-0.1	0.4	0.3	0.8	1.6	1105	584196.4	4448489.0	584170.0	4448494.8	584184.4	4448491.6	584250.8	4448476.9
1106	-0.6	-0.2	0.4	0.1	0.8	1.6	1106	584186.7	4448460.4	584164.1	4448465.4	584171.8	4448463.7	584238.5	4448448.9
1107	-0.6	-0.2	0.3	-0.0	0.7	1.6	1107	584180.6	4448431.0	584158.8	4448435.8	584158.5	4448435.9	584226.9	4448420.7
1108	-0.7	-0.3	0.3	-0.1	0.6	1.5	1108	584177.5	4448400.9	584152.2	4448406.6	584148.9	4448407.3	584215.0	4448392.6
1109	-0.8	-0.4	0.2	-0.1	0.6	1.5	1109	584174.1	4448371.0	584145.6	4448377.3	584139.3	4448378.7	584202.1	4448364.8
1110	-0.9	-0.4	0.2	-0.2	0.5	1.5	1110	584170.0	4448341.2	584139.2	4448348.0	584130.5	4448349.9	584192.8	4448336.1
1111	-0.7	-0.3	0.2	-0.1	0.5	1.3	1111	584158.8	4448312.9	584133.2	4448318.6	584130.5	4448319.2	584185.1	4448307.1
1112	-0.5		0.3		0.5		1112	584144.8	4448285.3	584128.8	4448288.8			584177.8	4448278.0
1113	-0.3	-0.3	0.2	-0.3	0.4	1.4	1113	584135.0	4448256.7	584123.8	4448259.2	584108.7	4448262.6	584166.9	4448249.7

Table B-1. High-Water Shoreline Position Change - Sandy Hook to Barnegat Inlet, New Jersey

	High-Water Shoreline Position Change Rate (m/yr)						High-Water Shoreline Position (UTM Zone 18, NAD 1983)								
	1836/39 to			1855/75 to		1932/33 to		1836/39		1855/75		1932/33		1977	
Transect #	1855/75	1932/33	1977	1932/33	1977	1977	Transect #	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)
1114	-0.2	-0.3	0.2	-0.3	0.4	1.3	1114	584125.3	4448228.1	584117.9	4448229.8	584098.5	4448234.1	584155.5	4448221.5
1115	-0.1	-0.3	0.2	-0.3	0.4	1.3	1115	584115.5	4448199.6	584110.7	4448200.7	584091.3	4448205.0	584146.9	4448192.6
1116	-0.2	-0.3	0.2	-0.3	0.3	1.2	1116	584109.9	4448170.1	584103.9	4448171.4	584084.9	4448175.7	584137.4	4448164.0
1117	-0.2	-0.3	0.2	-0.3	0.3	1.2	1117	584103.2	4448140.9	584097.1	4448142.2	584078.4	4448146.4	584127.9	4448135.4
1118	-0.1	-0.2	0.2	-0.3	0.3	1.1	1118	584094.8	4448112.0	584090.0	4448113.1	584072.6	4448116.9	584121.2	4448106.2
1119	-0.1		0.2		0.3		1119	584086.9	4448083.0	584083.1	4448083.9			584115.3	4448076.7
1120	-0.1		0.3		0.4		1120	584078.0	4448054.3	584075.5	4448054.8			584112.6	4448046.6
1121	-0.1						1121	584069.6	4448025.4	584067.9	4448025.8				
1122	0.0	-0.1	0.8	-0.1	1.1	2.8	1122	584060.1	4447996.8	584060.7	4447996.7	584053.4	4447998.3	584173.4	4447971.7
1123	0.1	-0.2	0.7	-0.3	0.9	2.5	1123	584049.8	4447968.3	584053.3	4447967.6	584034.3	4447971.8	584142.0	4447947.9
1124	-0.0	-0.3	0.6	-0.4	0.8	2.3	1124	584045.7	4447938.5	584044.7	4447938.7	584021.6	4447943.9	584120.0	4447922.1
1125	0.0	-0.3	0.5	-0.4	0.7	2.2	1125	584034.7	4447910.2	584035.4	4447910.1	584010.3	4447915.6	584103.1	4447895.1
1126	0.0	-0.3	0.5	-0.5	0.6	2.0	1126	584024.8	4447881.7	584025.4	4447881.6	583998.9	4447887.4	584086.0	4447868.1
1127	-0.0	-0.3	0.4	-0.5	0.6	1.9	1127	584015.7	4447853.0	584015.5	4447853.0	583989.0	4447858.9	584069.8	4447841.0
1128	0.0	-0.4	0.4	-0.6	0.5	2.0	1128	584007.6	4447824.1	584007.7	4447824.0	583974.1	4447831.5	584058.1	4447812.9
1129	0.0		0.3		0.5		1129	584000.7	4447794.8	584000.8	4447794.8			584045.5	4447784.9
1130	0.1		0.3		0.4		1130	583989.4	4447766.6	583991.2	4447766.2			584035.0	4447756.5
1131	0.0	-0.3	0.3	-0.6	0.4	1.8	1131	583980.6	4447737.9	583982.1	4447737.5	583949.1	4447744.8	584024.5	4447728.1
1132	-0.1	-0.4	0.3	-0.6	0.4	1.7	1132	583974.9	4447708.4	583972.5	4447708.9	583941.3	4447715.8	584015.4	4447699.4
1133	-0.2		0.3		0.5		1133	583968.2	4447679.1	583962.9	4447680.3			584008.4	4447670.2
1134	-0.3	-0.4	0.3	-0.5	0.5	1.8	1134	583965.5	4447649.0	583953.5	4447651.7	583928.3	4447657.3	584005.7	4447640.1
1135	-0.4	-0.5	0.4	-0.5	0.6	2.1	1135	583960.2	4447619.5	583944.6	4447622.9	583919.0	4447628.6	584008.7	4447608.7
1136	-0.3		0.5		0.8		1136	583949.4	4447591.1	583937.7	4447593.7			584017.5	4447576.0
1137	-0.3	-0.4	0.4	-0.5	0.7	2.1	1137	583940.3	4447562.4	583930.6	4447564.6	583903.6	4447570.6	583995.0	4447550.3
1138	-0.3	-0.4	0.3	-0.5	0.6	2.0	1138	583933.6	4447533.2	583923.4	4447535.4	583895.3	4447541.7	583979.7	4447523.0
1139	-0.3		0.3		0.5		1139	583925.5	4447504.2	583915.8	4447506.4			583965.8	4447495.3
1140	-0.2	-0.4	0.3	-0.5	0.5	1.8	1140	583914.9	4447475.9	583907.0	4447477.6	583878.4	4447483.9	583953.4	4447467.3
1141	-0.2	-0.4	0.3	-0.5	0.5	1.7	1141	583906.3	4447447.0	583898.5	4447448.8	583870.5	4447455.0	583943.0	4447438.9
1142	-0.2		0.3		0.5		1142	583896.8	4447418.4	583890.6	4447419.8			583935.0	4447409.9
1143	-0.1	-0.3	0.3	-0.5	0.5	1.7	1143	583886.8	4447389.9	583882.6	4447390.8	583856.8	4447396.6	583931.4	4447380.0
1144	-0.1	-0.3	0.4	-0.5	0.6	1.9	1144	583878.3	4447361.1	583875.1	4447361.8	583849.7	4447367.4	583932.7	4447349.0
1145	-0.2	-0.3		-0.4			1145	583871.5	4447331.8	583865.0	4447333.3	583845.0	4447337.7		
1146	-0.4		0.4		0.6		1146	583866.9	4447302.1	583853.8	4447305.0			583914.9	4447291.5
1147	-0.4		0.3		0.5		1147	583861.3	4447272.7	583848.0	4447275.6			583896.6	4447264.8
1148	-0.4		0.2		0.4		1148	583855.0	4447243.3	583841.7	4447246.3			583881.3	4447237.5
1149	-0.4	-0.4	0.2	-0.4	0.3	1.3	1149	583848.7	4447214.0	583835.6	4447216.9	583811.5	4447222.2	583868.5	4447209.6
1150	-0.4	-0.4	0.1	-0.4	0.3	1.2	1150	583842.2	4447184.7	583828.6	4447187.7	583804.0	4447193.2	583856.4	4447181.6
1151	-0.4	-0.4	0.1	-0.5	0.3	1.2	1151	583833.7	4447155.8	583820.4	4447158.8	583795.0	4447164.4	583845.8	4447153.2
1152	-0.3	-0.4	0.1	-0.5	0.3	1.2	1152	583823.5	4447127.4	583811.7	4447130.0	583786.1	4447135.7	583836.1	4447124.6
1153	-0.3	-0.4	0.1	-0.5	0.2	1.1	1153	583814.6	4447098.6	583803.3	4447101.1	583777.8	4447106.8	583826.1	4447096.1
1154	-0.3	-0.4	0.1	-0.4	0.2	1.1	1154	583806.3	4447069.7	583795.1	4447072.2	583771.1	4447077.6	583818.2	4447067.1
1155	-0.4	-0.4	0.1	-0.4	0.3	1.2	1155	583799.7	4447040.5	583786.5	4447043.4	583763.8	4447048.4	583815.7	4447036.9
1156	-0.4	-0.4	0.2	-0.4	0.4	1.5	1156	583792.4	4447011.4	583778.7	4447014.4	583754.1	4447019.9	583819.1	4447005.4
1157	-0.3		0.2		0.4		1157	583782.6	4446982.8	583773.3	4446984.9			583814.2	4446975.8
1158	-0.3	-0.4	0.1	-0.5	0.3	1.3	1158	583776.8	4446953.4	583766.0	4446955.8	583740.6	4446961.4	583795.6	4446949.2
1159	-0.2	-0.4	0.1	-0.5	0.2	1.1	1159	583764.6	4446925.3	583757.7	4446926.9	583731.0	4446932.8	583777.2	4446922.5
1160	0.0	-0.4	0.1	-0.6	0.1	0.9	1160	583754.6	4446896.8	583756.1	4446896.5	583722.8	4446903.9	583761.8	4446895.2
1161	-0.0	-0.3	-0.0	-0.5	-0.0	0.7	1161	583750.3	4446867.1	583749.8	4446867.2	583720.0	4446873.8	583749.3	4446867.3
1162	-0.3		-0.1		-0.0		1162	583751.1	4446836.2	583741.2	4446838.3			583738.5	4446839.0
1163	-0.5	-0.6	-0.2	-0.6	-0.1	0.7	1163	583749.5	4446805.8	583733.8	4446809.3	583698.6	4446817.1	583729.0	4446810.3
1164				-0.6	-0.1	0.5	1164			583727.7	4446779.9	583696.8	4446786.7	583718.6	4446781.9
1165					-0.1		1165			583719.0	4446751.1			583711.0	4446752.8
1166	-0.5	-0.4	-0.2	-0.4	-0.1	0.3	1166	583731.6	4446717.6	583713.7	4446721.5	583693.5	4446726.0	583707.1	4446723.0

Table B-1. High-Water Shoreline Position Change - Sandy Hook to Barnegat Inlet, New Jersey

	High-Water Shoreline Position Change Rate (m/yr)						High-Water Shoreline Position (UTM Zone 18, NAD 1983)								
	1836/39 to			1855/75 to		1932/33 to	1836/39		1855/75		1932/33		1977		
Transect #	1855/75	1932/33	1977	1932/33	1977	1977	Transect #	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)
1167	-0.6	-0.5	-0.2	-0.4	-0.1	0.5	1167	583727.1	4446687.8	583707.2	4446692.2	583682.4	4446697.8	583702.5	4446693.3
1168	-0.6	-0.5	-0.1	-0.4	0.0	0.6	1168	583719.2	4446658.9	583699.0	4446663.3	583674.5	4446668.8	583700.8	4446662.9
1169	-0.7	-0.5	-0.1	-0.4	0.1	0.8	1169	583714.3	4446629.2	583689.8	4446634.6	583670.2	4446639.0	583703.4	4446631.6
1170	-0.8		0.1		0.5		1170	583710.8	4446599.3	583681.5	4446605.8			583729.5	4446595.1
1171	-0.8	-0.5	0.1	-0.4	0.3	1.2	1171	583703.1	4446570.2	583675.6	4446576.3	583656.1	4446580.7	583709.2	4446568.9
1172	-0.6		0.0		0.2		1172	583692.3	4446541.9	583669.7	4446546.9			583693.7	4446541.6
1173	-0.6	-0.4	-0.0	-0.4	0.2	0.9	1173	583683.1	4446513.2	583662.6	4446517.8	583642.5	4446522.2	583681.8	4446513.5
1174	-0.5	-0.4	-0.0	-0.4	0.1	0.7	1174	583675.8	4446484.1	583658.2	4446488.0	583638.2	4446492.4	583670.0	4446485.4
1175	-0.5	-0.4	-0.1	-0.4	0.0	0.6	1175	583671.4	4446454.4	583655.6	4446457.9	583633.4	4446462.8	583659.9	4446456.9
1176	-0.4	-0.4	-0.1	-0.4	0.0	0.6	1176	583664.9	4446425.1	583649.8	4446428.4	583626.9	4446433.5	583652.2	4446427.9
1177	-0.3	-0.4	-0.0	-0.4	0.1	0.7	1177	583653.6	4446396.9	583642.9	4446399.2	583619.5	4446404.4	583648.2	4446398.0
1178	-0.1	-0.3	0.0	-0.4	0.1	0.8	1178	583640.8	4446369.0	583635.7	4446370.1	583611.8	4446375.4	583645.8	4446367.8
1179	0.0	-0.2	0.2	-0.4	0.2	1.0	1179	583628.9	4446340.9	583630.4	4446340.5	583606.6	4446345.8	583650.1	4446336.2
1180	0.2	-0.2	0.2	-0.4	0.3	1.1	1180	583616.9	4446312.8	583625.3	4446310.9	583600.8	4446316.4	583649.8	4446305.5
1181	0.3	-0.1	0.2	-0.4	0.1	0.9	1181	583607.2	4446284.2	583618.7	4446281.7	583594.1	4446287.1	583632.0	4446278.7
1182	0.4	-0.1	0.2	-0.5	0.1	0.8	1182	583597.7	4446255.6	583611.5	4446252.5	583585.4	4446258.3	583617.9	4446251.1
1183	0.4	-0.1	0.1	-0.4	0.0	0.6	1183	583588.0	4446227.0	583602.1	4446223.9	583577.8	4446229.3	583605.1	4446223.2
1184	0.4	-0.1	0.1	-0.4	0.0	0.5	1184	583580.5	4446198.0	583592.9	4446195.2	583571.2	4446200.0	583593.2	4446195.1
1185	0.3	-0.1	0.1	-0.3	-0.0	0.4	1185	583571.9	4446169.1	583583.8	4446166.5	583565.5	4446170.5	583582.7	4446166.7
1186	0.3	-0.1	0.1	-0.3	-0.0	0.4	1186	583566.2	4446139.7	583575.2	4446137.7	583557.3	4446141.6	583572.8	4446138.2
1187	0.2	-0.1	0.0	-0.3	-0.0	0.4	1187	583560.0	4446110.3	583567.4	4446108.7	583549.2	4446112.7	583565.8	4446109.0
1188	0.2	-0.1	0.1	-0.3	0.0	0.4	1188	583551.8	4446081.4	583560.0	4446079.6	583545.2	4446082.9	583562.3	4446079.1
1189	0.3	-0.0	0.2	-0.2	0.1	0.5	1189	583541.8	4446052.9	583553.2	4446050.4	583541.0	4446053.1	583563.0	4446048.2
1190	0.4	0.0	0.2	-0.2	0.2	0.7	1190	583532.0	4446024.3	583545.8	4446021.3	583534.3	4446023.8	583564.6	4446017.1
1191	0.4	0.1	0.5	-0.2	0.5	1.5	1191	583522.5	4445995.7	583538.0	4445992.3	583527.4	4445994.6	583590.8	4445980.6
1192	0.4	0.1	0.4	-0.2	0.4	1.1	1192	583515.8	4445966.5	583529.4	4445963.4	583520.9	4445965.3	583569.9	4445954.5
1193	0.3	0.0	0.3	-0.1	0.3	0.9	1193	583511.4	4445936.7	583521.5	4445934.5	583514.4	4445936.1	583553.2	4445927.5
1194	0.3	0.0	0.3	-0.2	0.3	0.8	1194	583505.1	4445907.4	583513.8	4445905.5	583505.3	4445907.3	583539.7	4445899.7
1195	0.3	0.0	0.2	-0.2	0.2	0.7	1195	583497.4	4445878.4	583507.2	4445876.2	583497.4	4445878.4	583528.0	4445871.6
1196	0.2	-0.0	0.2	-0.2	0.2	0.6	1196	583493.0	4445848.6	583500.7	4445846.9	583491.3	4445849.0	583518.9	4445842.9
1197	0.2	-0.1	0.2	-0.2	0.2	0.7	1197	583489.3	4445818.7	583494.5	4445817.5	583483.3	4445820.0	583512.7	4445813.5
1198	0.2	-0.1	0.2	-0.2	0.2	0.8	1198	583482.4	4445789.5	583489.7	4445787.9	583476.3	4445790.9	583512.2	4445782.9
1199	0.3	-0.1	0.3	-0.3	0.3	1.1	1199	583476.0	4445760.2	583484.9	4445758.2	583468.6	4445761.8	583515.0	4445751.5
1200	0.3	-0.1		-0.3			1200	583469.7	4445730.8	583479.8	4445728.6	583460.8	4445732.8		
1201	0.4	-0.1	0.3	-0.3	0.3	1.1	1201	583462.0	4445701.8	583474.6	4445699.1	583455.5	4445703.3	583502.7	4445692.8
1202	0.4	-0.0	0.3	-0.3	0.2	0.8	1202	583453.6	4445673.0	583468.2	4445669.7	583450.9	4445673.6	583486.6	4445665.7
1203	0.4	0.0	0.2	-0.3	0.1	0.6	1203	583446.1	4445643.9	583461.5	4445640.5	583445.9	4445644.0	583470.8	4445638.4
1204	0.4	-0.0	0.1	-0.3	0.0	0.5	1204	583440.2	4445614.5	583455.3	4445611.1	583439.0	4445614.8	583459.2	4445610.3
1205	0.4	-0.1	0.1	-0.3	0.0	0.4	1205	583437.1	4445584.4	583449.3	4445581.8	583432.7	4445585.4	583449.3	4445581.7
1206	0.2	-0.1	0.1	-0.3	0.0	0.4	1206	583435.6	4445554.1	583442.4	4445552.5	583427.3	4445555.9	583443.1	4445552.4
1207	0.2	-0.1	0.1	-0.3	0.0	0.4	1207	583427.9	4445525.0	583436.3	4445523.2	583421.1	4445526.5	583439.0	4445522.6
1208	0.2	-0.1	0.1	-0.3	0.1	0.5	1208	583420.8	4445495.9	583429.4	4445494.0	583414.5	4445497.3	583436.1	4445492.5
1209	0.2	-0.1	0.2	-0.2	0.2	0.6	1209	583415.7	4445466.3	583421.4	4445465.0	583408.4	4445467.9	583436.1	4445461.8
1210	0.1	-0.1		-0.2			1210	583411.5	4445436.5	583413.1	4445436.1	583403.8	4445438.2		
1211	0.2	-0.1	0.3	-0.2	0.3	1.0	1211	583402.1	4445407.8	583407.6	4445406.6	583396.9	4445409.0	583438.6	4445399.7
1212	0.2	-0.0	0.2	-0.2	0.2	0.7	1212	583395.1	4445378.7	583402.0	4445377.1	583391.5	4445379.4	583420.4	4445373.1
1213	0.2	-0.0	0.1	-0.2	0.1	0.5	1213	583389.1	4445349.3	583397.2	4445347.5	583387.4	4445349.6	583406.6	4445345.4
1214	0.3	0.0	0.1	-0.2	0.0	0.2	1214	583381.0	4445320.3	583392.7	4445317.7	583383.2	4445319.8	583393.7	4445317.5
1215	0.4	0.0	0.1	-0.2	-0.1	0.1	1215	583375.6	4445290.8	583389.0	4445287.8	583376.7	4445290.6	583382.3	4445289.3
1216	0.3	-0.0	0.0	-0.2	-0.1	0.1	1216	583371.8	4445260.9	583381.3	4445258.8	583367.9	4445261.8	583372.8	4445260.7
1217	0.2	-0.1	0.0	-0.3	-0.1	0.2	1217	583366.6	4445231.3	583374.3	4445229.6	583359.4	4445232.9	583366.5	4445231.4
1218	0.0	-0.1	-0.0	-0.2	-0.0	0.3	1218	583367.3	4445200.5	583368.0	4445200.3	583355.5	4445203.1	583366.4	4445200.7
1219	-0.1	-0.2		-0.2			1219	583366.1	4445170.0	583363.2	4445170.6	583351.3	4445173.3		

Table B-1. High-Water Shoreline Position Change - Sandy Hook to Barnegat Inlet, New Jersey

	High-Water Shoreline Position Change Rate (m/yr)						High-Water Shoreline Position (UTM Zone 18, NAD 1983)								
	1836/39 to			1855/75 to		1932/33 to	1836/39		1855/75		1932/33		1977		
Transect #	1855/75	1932/33	1977	1932/33	1977	1977	Transect #	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)
1220	-0.0	-0.1	0.5	-0.2	0.7	1.8	1220	583359.8	4445140.7	583359.5	4445140.7	583347.1	4445143.5	583424.1	4445126.4
1221	0.1	-0.1	0.4	-0.2	0.5	1.3	1221	583350.2	4445112.0	583354.0	4445111.2	583345.1	4445113.2	583400.5	4445100.9
1222	0.2	-0.0	0.3	-0.2	0.3	1.0	1222	583341.5	4445083.3	583348.3	4445081.7	583339.1	4445083.8	583380.7	4445074.6
1223	0.1	-0.1	0.2	-0.2	0.2	0.7	1223	583336.3	4445053.7	583339.4	4445053.0	583330.3	4445055.0	583360.3	4445048.4
1224	0.0	-0.1	0.1	-0.2	0.1	0.5	1224	583332.5	4445023.8	583332.8	4445023.7	583323.7	4445025.7	583343.3	4445021.4
1225	0.1	-0.1	0.0	-0.2	0.0	0.2	1225	583327.2	4444994.2	583329.4	4444993.8	583320.1	4444995.8	583330.5	4444993.5
1226	0.3	-0.0	0.0	-0.2	-0.1	0.1	1226	583316.2	4444966.0	583324.8	4444964.0	583313.8	4444966.5	583319.3	4444965.3
1227	0.3	0.0	0.0	-0.2	-0.1	0.0	1227	583307.6	4444937.1	583319.0	4444934.6	583308.8	4444936.9	583308.7	4444936.9
1228	0.1	-0.1	-0.1	-0.2	-0.1	0.0	1228	583308.4	4444906.2	583310.7	4444905.7	583299.0	4444908.3	583298.9	4444908.3
1229	0.3	-0.1	0.0	-0.3	-0.1	0.1	1229	583295.5	4444878.4	583304.6	4444876.3	583290.4	4444879.5	583294.9	4444878.5
1230	0.2	-0.1		-0.2			1230	583288.6	4444849.2	583295.1	4444847.7	583281.9	4444850.7		
1231	0.3	0.0	0.4	-0.2	0.4	1.1	1231	583276.1	4444821.2	583286.8	4444818.8	583276.9	4444821.0	583323.2	4444810.8
1232	0.3	0.0	0.3	-0.2	0.3	0.9	1232	583267.5	4444792.4	583279.4	4444789.7	583269.2	4444792.0	583305.7	4444783.9
1233	0.4	0.0	0.2	-0.2	0.2	0.7	1233	583259.3	4444763.5	583273.3	4444760.4	583262.3	4444762.8	583290.6	4444756.5
1234	0.5	0.1	0.2	-0.2	0.1	0.5	1234	583251.3	4444734.5	583268.1	4444730.8	583256.6	4444733.3	583276.0	4444729.0
1235	0.3	0.1	0.1	-0.1	0.0	0.2	1235	583249.3	4444704.2	583260.4	4444701.8	583254.6	4444703.0	583264.7	4444700.8
1236	0.3	0.0	0.1	-0.2	0.0	0.2	1236	583244.1	4444674.7	583255.2	4444672.2	583245.7	4444674.3	583256.1	4444672.0
1237	0.4	-0.0	0.1	-0.3	-0.0	0.3	1237	583238.2	4444645.2	583250.6	4444642.5	583235.0	4444645.9	583249.5	4444642.7
1238	0.2	-0.1	0.0	-0.3	-0.0	0.3	1238	583239.7	4444614.2	583247.2	4444612.5	583229.2	4444616.5	583243.9	4444613.3
1239	0.1	-0.2		-0.3			1239	583239.8	4444583.4	583242.7	4444582.8	583223.2	4444587.1		
1240	0.1	-0.2		-0.4			1240	583234.8	4444553.8	583236.6	4444553.4	583217.0	4444557.8		
1241	0.1	-0.2	0.3	-0.4	0.3	1.3	1241	583231.3	4444523.8	583233.5	4444523.4	583209.7	4444528.6	583266.9	4444516.0
1242	0.3	-0.2	0.2	-0.5	0.2	1.1	1242	583221.5	4444495.3	583230.7	4444493.2	583202.4	4444499.5	583249.0	4444489.2
1243	0.3	-0.2	0.1	-0.5	0.1	0.9	1243	583215.5	4444465.9	583226.4	4444463.5	583196.6	4444470.1	583233.5	4444461.9
1244	0.3	-0.2	0.1	-0.6	0.0	0.8	1244	583210.1	4444436.4	583221.5	4444433.8	583189.4	4444440.9	583222.5	4444433.6
1245	0.2	-0.3	0.0	-0.6	-0.0	0.7	1245	583207.8	4444406.1	583216.2	4444404.3	583182.6	4444411.7	583212.5	4444405.1
1246	0.1	-0.3	-0.0	-0.6	-0.1	0.6	1246	583206.1	4444375.8	583208.8	4444375.2	583177.8	4444382.1	583203.6	4444376.4
1247	-0.2	-0.4	-0.1	-0.5	0.0	0.6	1247	583206.0	4444345.1	583198.4	4444346.8	583172.7	4444352.5	583198.4	4444346.8
1248	-0.3	-0.4	-0.0	-0.5	0.1	0.7	1248	583198.1	4444316.1	583189.4	4444318.0	583163.4	4444323.8	583194.7	4444316.9
1249	-0.4	-0.4	0.0	-0.4	0.2	0.9	1249	583193.5	4444286.4	583180.3	4444289.3	583156.2	4444294.7	583196.6	4444285.7
1250	-0.5	-0.4		-0.4			1250	583187.8	4444256.9	583170.0	4444260.9	583148.5	4444265.6		
1251	-0.7	-0.5	0.1	-0.3	0.3	1.2	1251	583182.7	4444227.3	583159.7	4444232.4	583141.8	4444236.4	583192.2	4444225.2
1252	-0.7	-0.4	0.0	-0.3	0.3	1.0	1252	583172.3	4444198.9	583149.4	4444204.0	583133.8	4444207.4	583174.7	4444198.4
1253	-0.5	-0.3	0.0	-0.2	0.2	0.8	1253	583158.0	4444171.4	583139.0	4444175.6	583126.5	4444178.3	583161.7	4444170.5
1254	-0.7	-0.3	0.0	-0.1	0.2	0.7	1254	583150.8	4444142.2	583127.7	4444147.4	583120.2	4444149.0	583150.8	4444142.2
1255	-0.6	-0.3	-0.0	-0.1	0.2	0.7	1255	583142.4	4444113.4	583119.9	4444118.4	583112.8	4444119.9	583141.1	4444113.7
1256	-0.7	-0.3	-0.0	-0.1	0.2	0.6	1256	583134.8	4444084.3	583111.6	4444089.5	583104.5	4444091.0	583129.6	4444085.5
1257	-0.9	-0.4	-0.1	-0.1	0.2	0.6	1257	583133.0	4444054.0	583102.3	4444060.8	583098.0	4444061.8	583121.4	4444056.6
1258	-0.8	-0.4	-0.1	-0.1	0.2	0.6	1258	583124.0	4444025.3	583094.6	4444031.8	583088.4	4444033.1	583115.1	4444027.2
1259	-0.8	-0.4	0.0	-0.2	0.3	0.9	1259	583113.6	4443996.8	583087.3	4444002.7	583078.4	4444004.6	583116.4	4443996.2
1260	-0.9	-0.4	0.1	-0.1	0.4	1.1	1260	583112.6	4443966.3	583081.2	4443973.3	583073.5	4443975.0	583119.0	4443964.9
1261	-1.1	-0.5	-0.0	-0.1	0.4	1.0	1261	583114.7	4443935.1	583075.2	4443943.9	583069.8	4443945.1	583110.8	4443936.0
1262	-1.2	-0.5	-0.1	-0.1	0.2	0.7	1262	583112.4	4443904.9	583069.5	4443914.4	583063.6	4443915.7	583093.3	4443909.2
1263	-1.2	-0.6	-0.2	-0.2	0.1	0.6	1263	583107.2	4443875.3	583065.6	4443884.6	583054.7	4443887.0	583080.0	4443881.4
1264	-1.2	-0.6	-0.3	-0.2	0.1	0.5	1264	583102.8	4443845.6	583059.5	4443855.2	583048.0	4443857.7	583067.6	4443853.4
1265	-1.0	-0.5	-0.2	-0.1	0.1	0.3	1265	583086.9	4443818.4	583051.1	4443826.3	583043.0	4443828.1	583056.3	4443825.2
1266	-0.8	-0.4	-0.2	-0.2	0.0	0.3	1266	583074.5	4443790.4	583044.9	4443797.0	583035.8	4443799.0	583048.3	4443796.2
1267	-0.9	-0.5	-0.2	-0.2	0.1	0.4	1267	583069.5	4443760.8	583038.5	4443767.7	583026.4	4443770.3	583044.2	4443766.4
1268	-0.9	-0.5	-0.1	-0.2	0.1	0.6	1268	583063.2	4443731.5	583031.4	4443738.5	583021.0	4443740.8	583044.8	4443735.5
1269	-1.1	-0.5	-0.1	-0.2	0.2	0.8	1269	583064.2	4443700.5	583026.4	4443708.9	583015.3	4443711.3	583050.4	4443703.6
1270	-1.1	-0.6	0.1	-0.2	0.5	1.5	1270	583066.3	4443669.3	583026.9	4443678.0	583014.3	4443680.8	583077.1	4443666.9
1271	-1.2	-0.6	-0.1	-0.3	0.3	1.0	1271	583070.2	4443637.7	583027.6	4443647.2	583011.5	4443650.7	583054.9	4443641.1
1272			-0.2				1272	583066.5	4443607.8					583038.6	4443614.0

Table B-1. High-Water Shoreline Position Change - Sandy Hook to Barnegat Inlet, New Jersey

	High-Water Shoreline Position Change Rate (m/yr)						High-Water Shoreline Position (UTM Zone 18, NAD 1983)							
	1836/39 to			1855/75 to		1932/33 to	1836/39		1855/75		1932/33		1977	
Transect #	1855/75	1932/33	1977	1932/33	1977	1977	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)
1273													583025.2	4443586.2
1274													583013.8	4443558.0
1275			-0.5				583071.1	4443514.6					583003.9	4443529.5
1276	-1.8		-0.6		-0.2		583070.8	4443483.9	583008.0	4443497.9			582991.3	4443501.6
1277	-1.9	-1.1	-0.6	-0.6	-0.2	0.4	583066.6	4443454.1	583001.6	4443468.6	582965.3	4443476.6	582982.4	4443472.8
1278	-2.2	-1.3	-0.7	-0.7	-0.1	0.5	583067.2	4443423.3	582989.0	4443440.6	582952.5	4443448.7	582975.8	4443443.5
1279	-2.5	-1.4	-0.7	-0.7	0.0	0.9	583065.2	4443393.0	582977.9	4443412.3	582939.9	4443420.8	582977.8	4443412.4
1280	-2.3	-1.3		-0.7			583046.3	4443366.5	582966.9	4443384.1	582928.1	4443392.7		
1281	-2.2	-1.2	-0.4	-0.6	0.2	1.3	583031.2	4443339.1	582954.7	4443356.0	582918.7	4443364.0	582974.4	4443351.7
1282	-2.0	-1.1	-0.4	-0.5	0.1	1.0	583011.2	4443312.8	582942.5	4443328.0	582914.5	4443334.2	582956.3	4443324.9
1283	-1.9	-1.0	-0.4	-0.4	0.1	0.8	582997.4	4443285.1	582931.0	4443299.8	582908.0	4443304.9	582940.8	4443297.6
1284	-1.8	-0.9	-0.4	-0.4	0.1	0.6	582982.2	4443257.7	582919.5	4443271.7	582899.6	4443276.1	582926.6	4443270.1
1285	-1.5	-0.8	-0.4	-0.3	0.0	0.5	582964.0	4443231.1	582911.7	4443242.6	582894.1	4443246.6	582915.1	4443241.9
1286	-1.2	-0.6	-0.3	-0.3	0.1	0.5	582946.8	4443204.1	582904.2	4443213.6	582889.2	4443216.9	582908.9	4443212.5
1287	-1.1	-0.6	-0.3	-0.3	0.0	0.4	582935.3	4443176.0	582895.9	4443184.7	582881.0	4443188.0	582898.0	4443184.2
1288	-1.1	-0.6	-0.3	-0.3	-0.0	0.4	582928.7	4443146.7	582889.0	4443155.5	582871.4	4443159.4	582888.5	4443155.6
1289	-1.0	-0.6	-0.3	-0.4	-0.0	0.4	582921.3	4443117.6	582884.6	4443125.7	582864.0	4443130.3	582881.9	4443126.3
1290	-0.9	-0.6	-0.3	-0.4	-0.0	0.5	582913.7	4443088.6	582881.0	4443095.8	582857.2	4443101.1	582879.2	4443096.2
1291	-1.0	-0.6	-0.2	-0.4	0.1	0.6	582906.6	4443059.4	582870.3	4443067.5	582850.7	4443071.8	582877.9	4443065.8
1292	-0.9	-0.6	-0.1	-0.4	0.2	1.0	582896.5	4443030.9	582864.9	4443037.9	582843.8	4443042.6	582887.9	4443032.8
1293	-0.8	-0.5	-0.1	-0.3	0.2	0.8	582886.0	4443002.5	582856.7	4443009.0	582838.0	4443013.2	582871.5	4443005.7
1294	-0.8	-0.5	-0.2	-0.3	0.1	0.5	582876.0	4442974.0	582849.6	4442979.9	582832.4	4442983.7	582854.5	4442978.8
1295	-0.6	-0.5	-0.2	-0.3	0.0	0.5	582866.6	4442945.4	582844.6	4442950.2	582825.7	4442954.4	582845.6	4442950.0
1296	-0.6	-0.5	-0.2	-0.4	-0.1	0.4	582863.0	4442915.4	582840.4	4442920.5	582820.0	4442925.0	582835.1	4442921.6
1297	-0.9	-0.6	-0.3	-0.4	-0.1	0.2	582864.4	4442884.4	582833.4	4442891.3	582813.3	4442895.7	582823.8	4442893.4
1298	-1.1	-0.6	-0.4	-0.3	-0.1	0.1	582864.2	4442853.7	582825.6	4442862.3	582808.7	4442866.0	582813.6	4442864.9
1299	-1.6	-0.8	-0.5	-0.2	-0.1	-0.0	582871.5	4442821.4	582815.3	4442833.8	582802.2	4442836.7	582801.4	4442836.9
1300	-1.8	-0.8		-0.2			582869.6	4442791.1	582805.8	4442805.2	582796.3	4442807.3		
1301	-1.7	-0.7	-0.4	-0.1	0.0	0.2	582858.1	4442762.9	582796.9	4442776.5	582790.8	4442777.8	582798.3	4442776.1
1302	-1.5	-0.7	-0.4	-0.2	-0.1	0.1	582844.1	4442735.3	582791.0	4442747.0	582782.4	4442748.9	582785.7	4442748.2
1303	-1.2	-0.6	-0.4	-0.3	-0.1	0.2	582829.3	4442707.8	582785.9	4442717.4	582770.3	4442720.9	582777.3	4442719.3
1304	-1.0	-0.5	-0.3	-0.3	-0.1	0.2	582811.8	4442681.0	582777.9	4442688.5	582764.1	4442691.5	582773.3	4442689.5
1305	-0.6	-0.4	-0.1	-0.2	0.1	0.5	582790.9	4442654.9	582771.1	4442659.3	582758.7	4442662.0	582778.7	4442657.6
1306	-0.3	-0.2	0.3	-0.2	0.5	1.3	582773.1	4442628.1	582761.9	4442630.6	582752.9	4442632.6	582810.1	4442619.9
1307	-0.2	-0.2	0.2	-0.2	0.3	0.9	582763.5	4442599.5	582755.2	4442601.3	582746.8	4442603.2	582783.4	4442595.1
1308	-0.3	-0.2	0.0	-0.2	0.2	0.6	582758.3	4442569.9	582749.1	4442571.9	582740.4	4442573.9	582764.0	4442568.6
1309	-0.2	-0.2	-0.0	-0.2	0.1	0.4	582751.4	4442540.7	582744.8	4442542.2	582732.9	4442544.8	582749.6	4442541.1
1310	-0.2	-0.2	-0.1	-0.2	0.0	0.3	582746.7	4442511.0	582739.0	4442512.7	582726.4	4442515.5	582738.8	4442512.8
1311	-0.5	-0.3	-0.1	-0.2	-0.0	0.2	582749.3	4442479.7	582732.6	4442483.4	582719.8	4442486.3	582730.0	4442484.0
1312	-0.7	-0.4	-0.3	-0.2	-0.1	0.0	582751.9	4442448.4	582726.1	4442454.1	582713.8	4442456.9	582715.7	4442456.4
1313	-1.1	-0.5	-0.4	-0.2	-0.2	-0.2	582760.5	4442415.8	582720.4	4442424.7	582710.6	4442426.8	582701.6	4442428.8
1314	-1.4	-0.6	-0.5	-0.1	-0.2	-0.3	582762.4	4442384.6	582712.8	4442395.6	582705.2	4442397.3	582691.4	4442400.4
1315	-1.5	-0.7	-0.6	-0.1	-0.2	-0.4	582758.5	4442354.8	582706.0	4442366.4	582698.0	4442368.2	582682.6	4442371.6
1316	-1.7	-0.8	-0.6	-0.2	-0.2	-0.1	582761.0	4442323.5	582700.1	4442337.0	582689.8	4442339.3	582684.0	4442340.6
1317	-1.9	-0.9	-0.7	-0.2	-0.2	-0.2	582764.1	4442292.1	582697.3	4442306.9	582684.0	4442309.8	582677.0	4442311.4
1318	-2.0	-0.9	-0.7	-0.3	-0.2	-0.1	582764.2	4442261.3	582694.0	4442276.9	582678.2	4442280.4	582675.5	4442281.0
1319	-2.0	-0.9	-0.5	-0.2	0.1	0.5	582758.2	4442231.9	582689.1	4442247.2	582675.6	4442250.2	582695.4	4442245.8
1320	-1.9	-0.9	-0.5	-0.2	-0.1	0.2	582751.3	4442202.7	582684.8	4442217.5	582671.3	4442220.5	582678.8	4442218.8
1321	-1.9	-0.9	-0.6	-0.2	-0.2	-0.1	582745.7	4442173.2	582678.8	4442188.1	582665.0	4442191.1	582663.0	4442191.6
1322	-1.9	-0.9	-0.6	-0.3	-0.2	-0.1	582739.4	4442143.9	582673.3	4442158.6	582657.0	4442162.2	582652.7	4442163.1
1323	-1.9	-0.9	-0.7	-0.3	-0.2	-0.2	582734.4	4442114.3	582667.4	4442129.1	582651.2	4442132.7	582644.9	4442134.1
1324	-2.1	-0.9	-0.7	-0.2	-0.2	-0.2	582733.6	4442083.7	582660.2	4442100.0	582647.2	4442102.9	582640.7	4442104.3
1325	-2.1	-0.9	-0.4	-0.2	0.2	0.8	582724.7	4442055.0	582651.3	4442071.3	582641.1	4442073.5	582673.3	4442066.4

Table B-1. High-Water Shoreline Position Change - Sandy Hook to Barnegat Inlet, New Jersey

	High-Water Shoreline Position Change Rate (m/yr)					
		1836/39 to		1855/75 to		1932/33 to
Transect #	1855/75	1932/33	1977	1932/33	1977	1977
1326	-2.0	-0.9	-0.4	-0.1	0.2	0.5
1327	-1.8	-0.8	-0.4	-0.1	0.1	0.4
1328	-1.7	-0.7	-0.4	-0.1	0.1	0.3
1329	-1.7	-0.7	-0.4	-0.2	0.1	0.5
1330	-1.8	-0.8	-0.2	-0.2	0.3	1.1
1331	-1.7	-0.8	-0.4	-0.2	0.1	0.6
1332	-1.7	-0.8	-0.5	-0.3	-0.0	0.3
1333	-1.9	-0.9	-0.6	-0.3	-0.1	0.2
1334	-2.0	-1.0	-0.6	-0.4	-0.1	0.3
1335	-2.1	-1.0	-0.5	-0.4	0.0	0.5
1336	-2.2	-1.1	-0.4	-0.4	0.2	0.9
1337	-2.4	-1.2	-0.6	-0.4	0.1	0.6
1338	-2.6	-1.2	-0.7	-0.3	-0.0	0.4
1339	-3.0	-1.3	-0.8	-0.3	-0.1	0.3
1340	-3.4	-1.4	-0.9	-0.2	-0.0	0.3
1341	-3.5	-1.5		-0.2		
1342	-3.5	-1.4	-0.7	-0.2	0.3	0.8
1343	-3.5	-1.4	-0.8	-0.2	0.2	0.5
1344	-3.4	-1.4	-0.8	-0.2	0.1	0.4
1345	-3.3	-1.4	-0.8	-0.2	0.1	0.3
1346	-3.2	-1.3	-0.8	-0.2	0.1	0.4
1347	-3.1	-1.3	-0.6	-0.3	0.3	1.0
1348	-3.1	-1.3	-0.7	-0.2	0.1	0.6
1349	-3.1	-1.3	-0.8	-0.2	0.1	0.3
1350	-3.2	-1.3	-0.8	-0.2	0.0	0.2
1351	-3.1	-1.3	-0.9	-0.3	-0.1	0.1
1352	-3.0	-1.3	-0.9	-0.3	-0.2	-0.0
1353	-3.0	-1.3		-0.2		
1354	-3.0	-1.3	-0.6	-0.2	0.3	0.9
1355	-3.0	-1.3		-0.2		
1356	-3.1	-1.3	-0.5	-0.2	0.3	1.1
1357	-3.6	-1.5	-0.7	-0.2	0.3	0.9
1358				-0.1	0.3	0.7
1359				-0.1	0.2	0.6
1360	-5.1	-2.0	-1.1	-0.1	0.3	0.8
1361	-5.4	-2.1		-0.0		
1362	-6.0	-2.3	-1.3	-0.0	0.4	1.0
1363	-6.5	-2.5	-1.4	-0.1	0.3	0.9
1364	-6.7	-2.6	-1.6	-0.1	0.2	0.7
1365	-7.0	-2.7	-1.7	-0.1	0.2	0.6
1366	-7.4	-2.8	-1.8	-0.0	0.2	0.5
1367	-7.7	-2.9		0.0		
1368	-8.1	-3.0	-1.8	0.1	0.4	0.9
1369	-8.3	-3.2	-1.8	0.0	0.5	1.0
1370	-8.1	-3.1		0.0		
1371				0.1	0.9	2.0
1372	-8.3	-3.2	-1.6	-0.0	0.7	1.7
1373	-8.3	-3.2	-1.7	-0.1	0.6	1.5
1374	-8.4	-3.2	-1.8	-0.0	0.5	1.2
1375	-8.4	-3.2	-1.9	0.0	0.4	0.9
1376	-8.1	-3.1	-1.8	0.1	0.4	0.8
1377	-8.1	-3.1	-1.9	-0.0	0.3	0.7
1378	-7.7	-3.0	-1.8	-0.1	0.3	0.8

	High-Water Shoreline Position (UTM Zone 18, NAD 1983)							
	1836/39		1855/75		1932/33		1977	
Transect #	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)
1326	582712.8	4442026.9	582641.9	4442042.6	582635.3	4442044.1	582657.5	4442039.1
1327	582698.4	4441999.4	582633.7	4442013.7	582629.0	4442014.7	582645.8	4442011.0
1328	582689.6	4441970.6	582628.5	4441984.1	582624.6	4441985.0	582638.4	4441981.9
1329	582684.7	4441940.9	582625.4	4441954.1	582617.1	4441955.9	582637.4	4441951.4
1330	582685.0	4441910.1	582623.2	4441923.8	582610.6	4441926.6	582656.2	4441916.5
1331	582679.3	4441880.7	582620.6	4441893.7	582607.2	4441896.7	582631.7	4441891.2
1332	582678.9	4441850.0	582618.1	4441863.5	582602.8	4441866.9	582617.5	4441863.6
1333	582681.2	4441818.8	582615.8	4441833.3	582598.2	4441837.2	582605.7	4441835.5
1334	582682.7	4441787.7	582611.5	4441803.5	582589.5	4441808.4	582603.2	4441805.4
1335	582676.9	4441758.3	582605.0	4441774.2	582584.2	4441778.8	582607.5	4441773.7
1336	582675.1	4441728.0	582598.1	4441745.0	582577.7	4441749.6	582618.2	4441740.6
1337	582676.5	4441696.9	582592.0	4441715.7	582570.5	4441720.4	582597.2	4441714.5
1338	582677.9	4441665.9	582586.2	4441686.2	582567.4	4441690.4	582583.6	4441686.8
1339	582683.0	4441634.0	582578.5	4441657.2	582562.3	4441660.8	582572.8	4441658.5
1340	582688.7	4441602.0	582570.8	4441628.2	582557.5	4441631.1	582569.7	4441628.4
1341	582688.7	4441571.3	582565.2	4441598.7	582554.7	4441601.0		
1342	582681.5	4441542.2	582560.3	4441569.0	582550.9	4441571.1	582585.2	4441563.5
1343	582674.5	4441513.0	582552.8	4441540.0	582544.5	4441541.8	582567.3	4441536.8
1344	582667.2	4441483.9	582547.0	4441510.5	582538.5	4441512.4	582555.4	4441508.7
1345	582658.9	4441455.0	582543.0	4441480.7	582533.7	4441482.7	582548.0	4441479.6
1346	582652.4	4441425.7	582541.8	4441450.2	582529.5	4441453.0	582548.5	4441448.7
1347	582647.7	4441396.0	582538.7	4441420.2	582524.8	4441423.3	582565.5	4441414.3
1348	582642.2	4441366.5	582534.8	4441390.3	582523.6	4441392.8	582547.3	4441387.6
1349	582637.4	4441336.8	582528.6	4441361.0	582520.2	4441362.8	582533.8	4441359.8
1350	582636.1	4441306.4	582522.9	4441331.5	582514.4	4441333.4	582523.9	4441331.3
1351	582632.6	4441276.5	582524.6	4441300.4	582510.2	4441303.6	582514.3	4441302.7
1352	582627.5	4441246.9	582521.3	4441270.4	582506.2	4441273.7	582504.4	4441274.1
1353	582620.9	4441217.6	582515.3	4441241.0	582502.4	4441243.9		
1354	582616.4	4441187.9	582511.0	4441211.2	582498.9	4441213.9	582535.6	4441205.8
1355	582610.2	4441158.5	582505.0	4441181.8	582495.3	4441184.0		
1356	582608.3	4441128.2	582501.2	4441151.9	582490.3	4441154.4	582535.4	4441144.4
1357	582620.3	4441094.8	582495.6	4441122.5	582484.3	4441125.0	582522.8	4441116.4
1358			582487.6	4441093.5	582480.6	4441095.1	582512.4	4441088.0
1359			582482.9	4441063.8	582477.6	4441065.0	582504.7	4441059.0
1360	582656.9	4440994.5	582478.6	4441034.1	582474.4	4441035.0	582507.2	4441027.7
1361	582661.2	4440962.8	582472.4	4441004.7	582470.7	4441005.1		
1362	582679.3	4440928.1	582467.2	4440975.1	582465.5	4440975.5	582508.7	4440965.9
1363	582691.3	4440894.7	582463.9	4440945.1	582459.4	4440946.1	582497.6	4440937.7
1364	582698.1	4440862.5	582461.7	4440914.9	582455.6	4440916.2	582485.5	4440909.6
1365	582703.5	4440830.5	582457.1	4440885.2	582452.0	4440886.3	582477.5	4440880.6
1366	582709.6	4440798.5	582451.0	4440855.8	582450.1	4440856.0	582472.3	4440851.1
1367	582717.9	4440765.9	582445.7	4440826.2	582448.1	4440825.7		
1368	582723.6	4440733.9	582440.8	4440796.6	582444.3	4440795.8	582484.6	4440786.9
1369	582727.7	4440702.3	582437.2	4440766.7	582437.3	4440766.6	582481.9	4440756.7
1370	582717.2	4440673.9	582433.6	4440736.7	582435.0	4440736.4		
1371			582429.9	4440706.8	582433.6	4440706.0	582519.2	4440687.0
1372	582721.2	4440611.5	582429.7	4440676.1	582428.6	4440676.4	582502.4	4440660.0
1373	582719.3	4440581.2	582427.2	4440646.0	582424.6	4440646.6	582487.4	4440632.6
1374	582717.2	4440551.0	582423.5	4440616.1	582422.4	4440616.3	582474.0	4440604.9
1375	582714.5	4440520.8	582419.6	4440586.2	582421.4	4440585.8	582461.3	4440577.0
1376	582700.1	4440493.3	582414.0	4440556.7	582419.5	4440555.5	582451.6	4440548.4
1377	582697.8	4440463.1	582414.3	4440525.9	582413.8	4440526.0	582444.7	4440519.2
1378	582685.2	4440435.1	582415.3	4440495.0	582409.3	4440496.3	582444.5	4440488.5

Table B-1. High-Water Shoreline Position Change - Sandy Hook to Barnegat Inlet, New Jersey

	High-Water Shoreline Position Change Rate (m/yr)						High-Water Shoreline Position (UTM Zone 18, NAD 1983)							
	1836/39 to			1855/75 to		1932/33 to	1836/39		1855/75		1932/33		1977	
Transect #	1855/75	1932/33	1977	1932/33	1977	1977	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)
1379	-7.6	-3.0		-0.2			582682.0	4440405.1	582413.8	4440464.6	582403.3	4440466.9		
1380				-0.2	0.6	1.7			582410.7	4440434.5	582397.9	4440437.4	582471.6	4440421.0
1381		-2.9	-1.5			1.5	582657.9	4440349.0			582396.4	4440407.0	582460.2	4440392.8
1382		-2.9	-1.6			1.3	582661.4	4440317.5			582392.6	4440377.1	582449.1	4440364.5
1383	-7.0	-3.0	-1.7	-0.5	0.2	1.2	582661.0	4440286.9	582415.0	4440341.4	582387.5	4440347.5	582437.6	4440336.4
1384	-6.2	-3.0	-1.7	-1.0	-0.1	1.0	582658.1	4440256.8	582440.3	4440305.0	582385.5	4440317.2	582426.4	4440308.1
1385	-5.8	-2.9	-1.8	-1.1	-0.3	0.8	582651.0	4440227.6	582448.2	4440272.6	582383.8	4440286.8	582415.9	4440279.7
1386	-5.7	-2.9	-1.8	-1.2	-0.4	0.6	582648.8	4440197.4	582449.2	4440241.6	582380.1	4440256.9	582406.3	4440251.1
1387	-5.7	-3.0	-1.9	-1.3	-0.5	0.5	582648.7	4440166.7	582448.9	4440211.0	582376.1	4440227.1	582398.0	4440222.2
1388	-5.7	-3.0	-1.9	-1.3	-0.6	0.4	582647.4	4440136.2	582447.7	4440180.5	582374.8	4440196.7	582389.8	4440193.3
1389	-5.6	-3.0	-1.9	-1.3	-0.6	0.3	582642.9	4440106.5	582445.5	4440150.3	582369.8	4440167.0	582382.3	4440164.3
1390	-5.2	-2.9	-1.9	-1.4	-0.7	0.2	582627.8	4440079.1	582443.5	4440120.0	582362.7	4440137.9	582373.0	4440135.6
1391	-5.1	-2.8	-1.9	-1.4	-0.7	0.2	582620.9	4440049.9	582440.7	4440089.9	582361.6	4440107.4	582369.7	4440105.6
1392	-5.0	-2.8	-1.8	-1.4	-0.7	0.3	582613.6	4440020.8	582438.2	4440059.7	582358.8	4440077.3	582372.2	4440074.3
1393	-4.6	-2.7	-1.7	-1.4	-0.7	0.2	582599.9	4439993.1	582437.2	4440029.2	582357.1	4440046.9	582365.6	4440045.0
1394	-4.3	-2.6	-1.7	-1.5	-0.8	0.1	582589.4	4439964.7	582439.2	4439998.0	582355.4	4440016.6	582361.4	4440015.3
1395	-3.9	-2.4	-1.5	-1.5	-0.7	0.5	582576.4	4439936.9	582439.5	4439967.2	582353.3	4439986.3	582373.5	4439981.9
1396	-3.6	-2.3	-1.5	-1.5	-0.7	0.3	582565.0	4439908.7	582437.5	4439936.9	582353.1	4439955.7	582364.5	4439953.1
1397	-3.4	-2.2	-1.5	-1.5	-0.8	0.1	582553.3	4439880.5	582434.0	4439907.0	582351.9	4439925.2	582355.1	4439924.5
1398	-3.3	-2.2	-1.4	-1.5	-0.7	0.3	582547.7	4439851.0	582431.8	4439876.7	582347.0	4439895.5	582359.1	4439892.9
1399	-3.2	-2.2	-1.4	-1.5	-0.8	0.2	582539.3	4439822.2	582426.7	4439847.1	582342.2	4439865.9	582350.7	4439864.0
1400	-3.2	-2.2	-1.4	-1.6	-0.7	0.4	582531.4	4439793.2	582420.1	4439817.9	582330.1	4439837.8	582347.2	4439834.0
1401	-2.9	-2.1	-1.1	-1.6	-0.5	1.0	582516.3	4439765.8	582414.8	4439788.3	582322.7	4439808.7	582364.2	4439799.5
1402	-2.7	-2.0	-1.1	-1.6	-0.5	0.9	582502.2	4439738.2	582408.0	4439759.1	582316.4	4439779.4	582354.9	4439770.9
1403	-2.7	-2.0	-1.1	-1.5	-0.5	0.8	582492.4	4439709.7	582398.7	4439730.4	582312.0	4439749.6	582345.8	4439742.2
1404	-3.0		-1.1		-0.5		582490.6	4439679.3	582386.0	4439702.5			582339.7	4439712.8
1405	-3.4	-2.0	-1.2	-1.1	-0.4	0.5	582495.0	4439647.6	582375.6	4439674.1	582313.7	4439687.8	582333.8	4439683.4
1406	-3.6		-1.2		-0.4		582494.0	4439617.1	582368.5	4439644.9			582332.5	4439652.9
1407	-3.6						582486.4	4439588.1	582361.7	4439615.7				
1408	-3.4						582474.6	4439560.0	582355.5	4439586.4				
1409	-3.2						582463.4	4439531.7	582351.1	4439556.6				
1410	-2.9						582451.2	4439503.7	582348.5	4439526.5				
1411	-2.8						582442.0	4439480.9	582343.1	4439494.0				
1412	-2.4						582425.0	4439452.9	582338.4	4439464.3				
1413	-2.1						582410.0	4439424.6	582333.4	4439434.7				
1414	-2.1	0.4		2.0			582400.5	4439395.6	582324.6	4439405.6	582440.0	4439390.4		
1415	-2.1	0.1		1.5			582391.0	4439366.6	582316.7	4439376.4	582402.6	4439365.1		
1416	-2.0	-0.0	1.1	1.2	2.2	3.5	582382.1	4439337.5	582310.8	4439346.9	582380.3	4439337.8	582531.9	4439317.8
1417	-1.9	-0.1	1.0	1.0	2.0	3.4	582371.8	4439308.6	582304.8	4439317.4	582361.7	4439310.0	582511.1	4439290.3
1418	-1.9	-0.3	0.9	0.7	1.9	3.4	582369.2	4439278.7	582302.7	4439287.5	582344.4	4439282.0	582492.1	4439262.5
1419	-1.8	-0.4	0.8	0.5	1.7	3.3	582365.5	4439248.9	582302.5	4439257.2	582329.6	4439253.7	582473.9	4439234.7
1420	-1.6	-0.4	0.8	0.3	1.6	3.3	582355.3	4439220.0	582298.7	4439227.5	582318.3	4439224.9	582462.0	4439206.0
1421	-1.3	-0.4	0.8	0.2	1.6	3.3	582341.2	4439191.6	582293.7	4439197.9	582307.7	4439196.0	582452.3	4439177.0
1422	-1.2	-0.4	0.8	0.2	1.5	3.4	582331.8	4439162.6	582287.7	4439168.4	582296.5	4439167.2	582442.7	4439148.0
1423	-1.3	-0.4	0.7	0.1	1.5	3.3	582328.7	4439132.8	582281.3	4439139.0	582287.5	4439138.2	582429.1	4439119.5
1424	-1.4	-0.5	0.7	0.1	1.4	3.2	582323.8	4439103.1	582274.4	4439109.6	582279.6	4439109.0	582417.9	4439090.7
1425	-1.6	-0.6	0.6	0.1	1.4	3.1	582323.3	4439072.9	582267.8	4439080.3	582271.1	4439079.8	582406.5	4439062.0
1426	-1.6	-0.6	0.6	0.1	1.3	3.0	582320.0	4439043.1	582261.9	4439050.8	582264.9	4439050.4	582395.5	4439033.2
1427	-1.7	-0.6	0.5	0.1	1.3	2.9	582316.1	4439013.4	582255.6	4439021.3	582259.2	4439020.9	582385.0	4439004.3
1428	-1.6	-0.6	0.5	0.1	1.3	2.8	582306.7	4438984.4	582248.6	4438992.0	582251.7	4438991.6	582375.1	4438975.3
1429	-1.6	-0.6	0.5	-0.0	1.2	2.8	582303.9	4438954.5	582245.9	4438962.1	582243.9	4438962.4	582365.0	4438946.4
1430	-1.6	-0.6	0.4	-0.1	1.1	2.7	582296.4	4438925.2	582240.9	4438932.5	582236.4	4438933.1	582353.2	4438917.7
1431	-1.7	-0.7	0.4	-0.1	1.1	2.6	582294.1	4438895.2	582232.9	4438903.3	582229.0	4438903.8	582342.5	4438888.9

Table B-1. High-Water Shoreline Position Change - Sandy Hook to Barnegat Inlet, New Jersey

	High-Water Shoreline Position Change Rate (m/yr)						High-Water Shoreline Position (UTM Zone 18, NAD 1983)							
	1836/39 to			1855/75 to		1932/33 to	1836/39		1855/75		1932/33		1977	
Transect #	1855/75	1932/33	1977	1932/33	1977	1977	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)
1432	-1.8	-0.7	0.3	-0.1	1.0	2.5	582290.3	4438865.5	582227.2	4438873.8	582223.0	4438874.3	582332.6	4438859.9
1433	-1.8	-0.7	0.3	-0.0	1.0	2.4	582285.1	4438835.9	582220.3	4438844.4	582217.9	4438844.7	582322.8	4438830.9
1434	-2.1	-0.8	0.2	-0.0	1.0	2.3	582287.6	4438805.3	582212.4	4438815.2	582211.3	4438815.4	582312.6	4438802.0
1435	-2.2	-0.9	0.1	-0.1	1.0	2.3	582283.2	4438775.6	582205.1	4438785.9	582202.0	4438786.3	582302.6	4438773.1
1436	-2.4	-1.0	0.1	-0.1	0.9	2.3	582283.9	4438745.3	582198.3	4438756.6	582193.2	4438757.2	582293.8	4438744.0
1437	-2.5	-1.0	0.1	-0.1	1.0	2.3	582276.8	4438716.0	582188.8	4438727.5	582184.9	4438728.1	582285.4	4438714.8
1438	-2.4	-1.0	0.0	-0.1	0.9	2.2	582269.3	4438686.7	582182.9	4438698.1	582179.1	4438698.6	582275.3	4438685.9
1439	-2.5	-1.0	0.0	-0.0	0.9	2.0	582265.2	4438657.0	582177.9	4438668.5	582176.7	4438668.6	582265.1	4438657.0
1440	-2.6	-1.0	-0.1	0.0	0.8	1.9	582265.1	4438626.7	582172.9	4438638.9	582172.9	4438638.9	582255.0	4438628.0
1441	-2.6	-1.0	-0.1	0.0	0.8	1.8	582260.9	4438597.0	582168.1	4438609.2	582168.8	4438609.1	582245.0	4438599.1
1442	-2.5	-1.0	-0.1	-0.1	0.7	1.8	582253.9	4438567.7	582163.8	4438579.5	582157.8	4438580.3	582234.3	4438570.3
1443	-2.4	-1.0	-0.2	-0.2	0.7	1.8	582246.4	4438538.4	582159.7	4438549.8	582149.2	4438551.2	582225.7	4438541.1
1444	-2.4	-1.1	-0.2	-0.2	0.6	1.7	582241.0	4438508.9	582154.6	4438520.2	582140.9	4438522.0	582216.6	4438512.1
1445	-2.5	-1.1	-0.2	-0.2	0.6	1.7	582237.1	4438479.1	582147.1	4438491.0	582133.4	4438492.8	582208.4	4438482.9
1446	-2.6	-1.1	-0.2	-0.3	0.6	1.7	582231.7	4438449.6	582140.5	4438461.6	582125.9	4438463.5	582199.3	4438453.8
1447	-2.4	-1.1	-0.2	-0.3	0.6	1.7	582221.2	4438420.7	582134.1	4438432.2	582118.3	4438434.2	582190.4	4438424.7
1448	-2.4	-1.1	-0.2	-0.3	0.5	1.6	582212.7	4438391.6	582128.1	4438402.7	582112.0	4438404.8	582181.9	4438395.6
1449	-2.5	-1.1	-0.3	-0.3	0.5	1.6	582210.9	4438361.5	582122.2	4438373.2	582106.4	4438375.3	582174.2	4438366.4
1450	-2.6	-1.2	-0.3	-0.3	0.5	1.5	582209.6	4438331.4	582116.5	4438343.7	582100.7	4438345.8	582164.9	4438337.3
1451	-2.8	-1.2	-0.4	-0.3	0.5	1.5	582209.8	4438301.2	582109.6	4438314.4	582094.2	4438316.4	582157.5	4438308.0
1452	-3.0	-1.3	-0.4	-0.2	0.5	1.4	582208.2	4438271.1	582101.7	4438285.1	582088.6	4438286.9	582150.8	4438278.7
1453	-3.0	-1.3	-0.4	-0.3	0.5	1.4	582201.9	4438241.7	582096.1	4438255.6	582081.2	4438257.6	582143.0	4438249.4
1454	-3.0	-1.3	-0.5	-0.3	0.5	1.4	582196.8	4438212.1	582089.6	4438226.2	582075.2	4438228.1	582135.3	4438220.2
1455	-3.1	-1.3	-0.5	-0.2	0.4	1.3	582194.8	4438182.1	582083.6	4438196.7	582069.8	4438198.6	582126.2	4438191.1
1456	-3.2	-1.4	-0.6	-0.2	0.4	1.2	582193.2	4438152.1	582079.5	4438167.0	582067.1	4438168.6	582118.7	4438161.9
1457	-3.3	-1.4	-0.6	-0.2	0.4	1.2	582190.5	4438122.1	582074.6	4438137.4	582061.7	4438139.1	582113.2	4438132.3
1458	-3.3	-1.4	-0.6	-0.3	0.4	1.1	582187.1	4438092.3	582070.1	4438107.7	582055.8	4438109.6	582105.5	4438103.1
1459	-3.3	-1.4	-0.6	-0.2	0.3	1.0	582183.1	4438062.6	582065.8	4438078.0	582052.1	4438079.8	582097.4	4438073.9
1460	-3.3	-1.4	-0.7	-0.2	0.3	1.0	582179.7	4438032.8	582060.5	4438048.5	582046.8	4438050.3	582090.3	4438044.6
1461	-3.4	-1.5	-0.7	-0.2	0.3	1.0	582176.5	4438002.9	582054.1	4438019.1	582040.4	4438020.9	582082.2	4438015.4
1462	-3.5	-1.5	-0.7	-0.2	0.3	0.9	582172.6	4437973.2	582046.8	4437989.8	582033.2	4437991.6	582074.2	4437986.2
1463	-3.5	-1.5	-0.7	-0.3	0.3	0.9	582167.2	4437943.7	582041.2	4437960.2	582025.7	4437962.3	582066.5	4437956.9
1464	-3.5	-1.5	-0.8	-0.3	0.2	0.9	582160.7	4437914.3	582034.6	4437930.9	582020.5	4437932.7	582058.6	4437927.7
1465	-3.6	-1.5	-0.8	-0.2	0.2	0.8	582156.3	4437884.6	582027.7	4437901.5	582015.9	4437903.1	582050.7	4437898.5
1466	-3.8	-1.5	-0.8	-0.1	0.3	0.8	582153.3	4437854.7	582018.6	4437872.4	582010.5	4437873.5	582044.5	4437869.0
1467	-3.9	-1.5	-0.8	-0.1	0.3	0.8	582148.8	4437825.0	582009.8	4437843.3	582006.1	4437843.8	582039.0	4437839.5
1468	-4.0	-1.6	-0.8	-0.1	0.3	0.7	582147.2	4437795.0	582004.6	4437813.8	582001.0	4437814.2	582032.5	4437810.1
1469	-4.0	-1.6	-0.8	-0.0	0.3	0.7	582140.3	4437765.6	581998.4	4437784.3	581996.1	4437784.6	582026.4	4437780.6
1470	-3.9	-1.5	-0.8	0.0	0.3	0.6	582131.3	4437736.6	581993.2	4437754.7	581993.2	4437754.7	582019.8	4437751.2
1471	-3.8	-1.5	-0.8	0.0	0.3	0.6	582123.7	4437707.3	581986.8	4437725.3	581987.5	4437725.2	582015.1	4437721.6
1472	-3.8	-1.5	-0.8	-0.1	0.3	0.7	582115.9	4437678.1	581981.6	4437695.8	581977.7	4437696.3	582009.2	4437692.1
1473	-3.5	-1.4	-0.7	-0.1	0.3	0.7	582104.2	4437649.4	581978.1	4437666.0	581971.6	4437666.8	582003.4	4437662.6
1474	-3.6	-1.4	-0.8	-0.1	0.2	0.7	582101.7	4437619.4	581974.6	4437636.2	581967.2	4437637.1	581998.1	4437633.1
1475	-3.7	-1.5	-0.8	-0.1	0.2	0.7	582102.9	4437589.0	581971.3	4437606.3	581963.7	4437607.3	581992.5	4437603.5
1476	-3.7	-1.5	-0.8	-0.2	0.2	0.6	582101.0	4437559.0	581968.8	4437576.4	581959.7	4437577.6	581987.0	4437574.0
1477	-3.7	-1.5	-0.9	-0.2	0.2	0.6	582097.8	4437529.2	581964.4	4437546.7	581954.7	4437548.0	581982.1	4437544.4
1478	-3.9	-1.6	-0.9	-0.2	0.2	0.6	582098.2	4437498.9	581959.6	4437517.1	581949.5	4437518.4	581975.9	4437515.0
1479	-3.9	-1.6	-0.9	-0.1	0.2	0.6	582093.0	4437469.3	581953.1	4437487.7	581945.7	4437488.7	581970.6	4437485.4
1480	-3.9	-1.6	-0.9	-0.1	0.2	0.6	582086.1	4437439.9	581945.9	4437458.4	581938.5	4437459.4	581964.3	4437456.0
1481	-3.9	-1.6	-0.9	-0.2	0.2	0.7	582076.8	4437410.9	581939.4	4437429.0	581929.4	4437430.3	581958.0	4437426.5
1482	-4.0	-1.6	-0.9	-0.2	0.2	0.7	582075.0	4437380.9	581933.1	4437399.6	581923.0	4437400.9	581952.7	4437397.0
1483	-3.9	-1.6	-0.9	-0.1	0.2	0.7	582064.9	4437351.9	581924.7	4437370.4	581917.9	4437371.3	581947.5	4437367.4
1484	-3.9	-1.6	-0.8	-0.2	0.2	0.7	582057.9	4437322.6	581919.8	4437340.8	581911.3	4437341.9	581943.0	4437337.7

Table B-1. High-Water Shoreline Position Change - Sandy Hook to Barnegat Inlet, New Jersey

	High-Water Shoreline Position Change Rate (m/yr)						High-Water Shoreline Position (UTM Zone 18, NAD 1983)							
	1836/39 to			1855/75 to		1932/33 to	1836/39		1855/75		1932/33		1977	
Transect #	1855/75	1932/33	1977	1932/33	1977	1977	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)
1485	-4.0	-1.6	-0.9	-0.1	0.2	0.7	582055.0	4437292.7	581912.8	4437311.5	581905.7	4437312.4	581936.6	4437308.3
1486	-4.1	-1.7	-0.9	-0.1	0.2	0.7	582053.1	4437262.7	581906.7	4437282.0	581899.5	4437282.9	581930.9	4437278.8
1487	-3.9	-1.6	-0.9	-0.1	0.2	0.7	582042.1	4437233.9	581902.8	4437252.3	581895.4	4437253.2	581923.8	4437249.5
1488	-3.7	-1.5	-0.9	-0.2	0.2	0.6	582033.0	4437204.9	581899.6	4437222.4	581890.1	4437223.7	581916.4	4437220.2
1489	-3.7	-1.5	-0.9	-0.2	0.1	0.6	582028.1	4437175.2	581896.4	4437192.6	581884.2	4437194.2	581910.2	4437190.8
1490	-3.6	-1.5	-0.9	-0.3	0.1	0.6	582023.2	4437145.6	581893.9	4437162.7	581879.6	4437164.5	581906.6	4437161.0
1491	-3.6	-1.6	-0.9	-0.3	0.1	0.6	582018.9	4437115.9	581890.5	4437132.8	581874.9	4437134.9	581901.0	4437131.4
1492	-3.6	-1.6	-0.9	-0.3	0.1	0.6	582015.6	4437086.1	581886.0	4437103.2	581870.2	4437105.2	581896.4	4437101.8
1493	-3.5	-1.5	-0.8	-0.3	0.1	0.6	582005.2	4437057.2	581880.6	4437073.6	581865.6	4437075.6	581892.9	4437072.0
1494	-3.4	-1.5	-0.8	-0.3	0.1	0.6	581999.1	4437027.8	581876.7	4437043.9	581861.2	4437045.9	581889.2	4437042.2
1495	-3.3	-1.5	-0.8	-0.3	0.1	0.7	581993.0	4436998.3	581873.8	4437014.0	581856.1	4437016.3	581885.3	4437012.5
1496	-3.2	-1.4	-0.8	-0.3	0.1	0.7	581986.9	4436968.9	581871.3	4436984.1	581852.3	4436986.6	581880.6	4436982.9
1497	-3.1	-1.4	-0.8	-0.3	0.1	0.6	581980.8	4436939.4	581869.7	4436954.0	581850.1	4436956.6	581876.9	4436953.1
1498	-3.0	-1.4	-0.7	-0.4	0.0	0.6	581974.7	4436909.9	581869.0	4436923.9	581845.4	4436927.0	581872.9	4436923.3
1499	-2.9	-1.4	-0.7	-0.5	0.0	0.7	581970.6	4436880.2	581867.1	4436893.8	581839.7	4436897.5	581869.5	4436893.5
1500	-2.9	-1.4	-0.7	-0.5	0.0	0.7	581966.0	4436850.6	581863.3	4436864.1	581834.5	4436867.9	581865.2	4436863.8
1501	-2.9	-1.4	-0.7	-0.5	0.0	0.7	581961.6	4436820.9	581859.0	4436834.4	581829.4	4436838.3	581860.4	4436834.2
1502	-2.6	-1.3	-0.7	-0.5	0.0	0.7	581948.1	4436792.4	581854.6	4436804.7	581824.9	4436808.6	581854.5	4436804.7
1503	-2.7	-1.4	-0.7	-0.5	0.0	0.6	581946.9	4436762.3	581849.3	4436775.2	581821.5	4436778.8	581849.1	4436775.2
1504	-2.9	-1.4	-0.8	-0.5	0.0	0.7	581947.4	4436732.0	581843.9	4436745.6	581814.3	4436749.5	581844.5	4436745.5
1505	-2.9	-1.5	-0.8	-0.6	-0.0	0.8	581944.2	4436702.1	581840.7	4436715.8	581806.6	4436720.3	581839.6	4436715.9
1506	-2.8		-0.7		0.0	0.8	581937.2	4436672.8	581836.0	4436686.1			581835.9	4436686.1
1507	-2.7		-0.7		0.0	0.9	581929.7	4436643.5	581831.9	4436656.4			581832.5	4436656.3
1508	-2.6		-0.7		0.0	0.9	581922.4	4436614.2	581828.1	4436626.6			581830.7	4436626.3
1509	-2.8		-0.7		0.1	1.0	581921.9	4436584.0	581822.8	4436597.1			581827.4	4436596.5
1510	-2.8	-1.5	-0.7	-0.7	0.1	1.0	581917.2	4436554.4	581816.6	4436567.6	581779.2	4436572.6	581824.3	4436566.6
1511	-2.5	-1.4	-0.6	-0.6	0.1	1.1	581902.3	4436526.1	581811.7	4436538.0	581775.9	4436542.7	581822.8	4436536.6
1512	-2.7	-1.4	-0.6	-0.6	0.1	1.1	581902.5	4436495.8	581807.0	4436508.4	581771.9	4436513.0	581817.8	4436507.0
1513	-2.6	-1.4	-0.6	-0.6	0.1	1.1	581895.2	4436466.5	581802.3	4436478.8	581765.5	4436483.6	581812.6	4436477.4
1514	-2.4	-1.3	-0.6	-0.7	0.1	1.0	581885.2	4436437.6	581798.1	4436449.0	581760.9	4436454.0	581806.4	4436448.0
1515	-2.5	-1.3	-0.6	-0.6	0.1	0.9	581883.5	4436407.5	581794.5	4436419.3	581760.4	4436423.8	581799.9	4436418.5
1516	-2.6	-1.3	-0.7	-0.6	0.0	0.8	581884.8	4436377.1	581792.0	4436389.3	581759.8	4436393.6	581793.6	4436389.1
1517	-2.6	-1.4	-0.7	-0.6	-0.0	0.8	581881.1	4436347.3	581788.6	4436359.5	581754.2	4436364.1	581787.8	4436359.6
1518	-2.5	-1.4	-0.7	-0.6	-0.0	0.8	581874.6	4436317.9	581784.8	4436329.8	581748.8	4436334.5	581782.1	4436330.1
1519	-2.4	-1.3	-0.7	-0.7	-0.0	0.8	581868.4	4436288.5	581781.5	4436299.9	581743.4	4436305.0	581778.2	4436300.4
1520	-2.3	-1.3	-0.6	-0.7	-0.0	0.8	581861.0	4436259.2	581779.1	4436270.0	581739.1	4436275.3	581775.7	4436270.5
1521	-2.4		-0.6		0.0	0.9	581859.6	4436229.1	581775.4	4436240.2			581775.5	4436240.2
1522	-2.1	-1.2	-0.5	-0.7	0.1	1.0	581847.1	4436200.5	581771.6	4436210.5	581733.4	4436215.5	581777.4	4436209.7
1523	-2.1	-1.2	-0.5	-0.7	0.0	0.9	581841.7	4436171.0	581767.9	4436180.7	581730.3	4436185.6	581768.2	4436180.7
1524	-2.2	-1.3	-0.6	-0.7	-0.0	0.8	581839.6	4436141.0	581763.0	4436151.1	581723.5	4436156.3	581760.3	4436151.4
1525	-2.2	-1.3	-0.6	-0.7	-0.0	0.9	581836.2	4436111.2	581757.1	4436121.6	581719.1	4436126.6	581756.0	4436121.8
1526	-2.1	-1.2	-0.6	-0.7	-0.0	0.8	581829.4	4436081.8	581753.4	4436091.8	581715.1	4436096.9	581751.6	4436092.1
1527	-2.1	-1.2	-0.5	-0.6	0.0	0.9	581823.9	4436052.3	581747.5	4436062.3	581711.2	4436067.1	581750.7	4436061.9
1528	-2.2	-1.3	-0.5	-0.6	0.1	1.1	581822.4	4436022.2	581742.4	4436032.8	581705.4	4436037.6	581752.9	4436031.4
1529	-2.4	-1.3	-0.5	-0.7	0.2	1.2	581822.5	4435992.0	581737.8	4436003.1	581700.0	4436008.1	581753.2	4436001.1
1530	-2.4	-1.3	-0.5	-0.7	0.1	1.1	581819.0	4435962.2	581733.1	4435973.5	581696.0	4435978.4	581745.5	4435971.8
1531	-2.4	-1.3	-0.6	-0.6	0.1	1.0	581812.7	4435932.7	581728.3	4435943.8	581694.1	4435948.3	581736.3	4435942.8
1532	-2.3	-1.2	-0.6	-0.6	0.1	0.9	581806.9	4435903.2	581723.4	4435914.2	581691.5	4435918.4	581728.3	4435913.6
1533	-2.4	-1.3	-0.6	-0.5	0.0	0.8	581805.5	4435873.2	581718.3	4435884.6	581687.1	4435888.7	581722.2	4435884.1
1534	-2.3	-1.2	-0.6	-0.6	0.1	0.9	581795.5	4435844.2	581713.1	4435855.1	581681.5	4435859.2	581720.4	4435854.1
1535	-2.2	-1.2	-0.5	-0.5	0.2	1.1	581786.7	4435815.1	581707.7	4435825.5	581678.2	4435829.4	581724.5	4435823.3
1536	-2.3	-1.2	-0.4	-0.5	0.2	1.2	581784.8	4435785.1	581702.0	4435796.0	581674.4	4435799.6	581724.8	4435793.0
1537	-2.4	-1.2	-0.5	-0.5	0.2	1.1	581781.9	4435755.2	581696.1	4435766.5	581668.8	4435770.1	581717.5	4435763.7

Table B-1. High-Water Shoreline Position Change - Sandy Hook to Barnegat Inlet, New Jersey

	High-Water Shoreline Position Change Rate (m/yr)					
	1836/39 to			1855/75 to		1932/33 to
Transect #	1855/75	1932/33	1977	1932/33	1977	1977
1538	-2.5	-1.3	-0.5	-0.5	0.2	1.1
1539	-2.5	-1.2	-0.5	-0.5	0.2	1.1
1540	-2.4	-1.2		-0.4		
1541	-2.3	-1.1	-0.4	-0.4	0.3	1.1
1542	-2.2	-1.1	-0.4	-0.4	0.2	1.0
1543	-2.0	-1.0	-0.4	-0.4	0.2	1.0
1544	-1.8	-1.0	-0.4	-0.5	0.2	1.0
1545	-1.8	-1.0	-0.3	-0.5	0.2	1.1
1546	-1.8		-0.3		0.3	1.2
1547	-1.6		-0.2		0.3	1.1
1548	-1.6	-0.9	-0.3	-0.5	0.2	1.1
1549	-1.7	-0.9	-0.3	-0.4	0.2	1.0
1550	-1.6	-0.9	-0.3	-0.5	0.2	1.0
1551	-1.7	-0.9	-0.3	-0.4	0.2	0.9
1552	-1.7		-0.3		0.2	0.9
1553	-1.5	-0.8	-0.3	-0.4	0.1	0.9
1554	-1.6	-0.9	-0.4	-0.5	0.1	0.8
1555	-1.6	-0.9	-0.4	-0.5	0.0	0.7
1556	-1.3	-0.9	-0.4	-0.6	-0.1	0.6
1557	-1.2	-0.9	-0.4	-0.7	-0.2	0.6
1558	-1.1	-0.9	-0.4	-0.8	-0.2	0.7
1559	-0.8	-0.8	-0.4	-0.8	-0.2	0.6
1560	-0.9	-0.8	-0.4	-0.7	-0.2	0.5
1561	-0.9	-0.8	-0.4	-0.7	-0.2	0.5
1562	-0.9	-0.8	-0.4	-0.7	-0.2	0.5
1563	-1.0	-0.8	-0.4	-0.6	-0.1	0.5
1564	-1.2	-0.8	-0.4	-0.6	-0.1	0.6
1565	-1.3	-0.9	-0.4	-0.7	-0.1	0.6
1566	-1.3	-0.9	-0.4	-0.7	-0.1	0.6
1567	-1.3	-0.9	-0.4	-0.6	-0.1	0.6
1568	-1.3	-0.9	-0.4	-0.6	-0.1	0.5
1569	-1.2	-0.8	-0.4	-0.7	-0.1	0.5
1570	-1.1	-0.8	-0.4	-0.7	-0.1	0.6
1571	-1.0	-0.8	-0.4	-0.8	-0.1	0.7
1572	-0.8	-0.8	-0.3	-0.9	-0.2	0.8
1573	-0.6	-0.8	-0.3	-0.9	-0.2	0.8
1574	-0.6	-0.8	-0.3	-0.9	-0.2	0.7
1575	-0.6	-0.7	-0.3	-0.8	-0.2	0.6
1576	-0.5		-0.3		-0.2	0.6
1577	-0.6	-0.7	-0.3	-0.8	-0.2	0.7
1578	-0.6	-0.7	-0.3	-0.8	-0.1	0.8
1579	-0.7	-0.8	-0.3	-0.9	-0.1	0.9
1580	-0.7	-0.8	-0.3	-0.9	-0.1	0.9
1581	-0.6	-0.8	-0.2	-0.9	-0.1	0.9
1582	-0.6	-0.8	-0.2	-0.9	-0.1	0.9
1583	-0.5	-0.8	-0.2	-0.9	-0.1	0.8
1584	-0.4	-0.7	-0.2	-0.9	-0.1	0.9
1585	-0.3	-0.7	-0.2	-0.9	-0.1	0.9
1586	-0.3	-0.7	-0.2	-0.9	-0.1	0.9
1587	-0.3	-0.7	-0.2	-0.9	-0.1	0.9
1588	-0.4		-0.2		-0.1	0.8
1589	-0.6	-0.7	-0.2	-0.8	-0.1	0.8
1590	-0.6	-0.7	-0.2	-0.7	-0.1	0.7

	High-Water Shoreline Position (UTM Zone 18, NAD 1983)							
	1836/39		1855/75		1932/33		1977	
Transect #	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)
1538	581779.6	4435725.3	581690.8	4435737.0	581662.4	4435740.7	581711.9	4435734.2
1539	581774.7	4435695.7	581687.1	4435707.2	581661.2	4435710.6	581707.3	4435704.5
1540	581766.5	4435666.5	581682.2	4435677.6	581659.4	4435680.6		
1541	581758.1	4435637.3	581677.1	4435648.0	581654.5	4435651.0	581702.3	4435644.7
1542	581750.6	4435608.1	581671.1	4435618.5	581650.2	4435621.3	581693.5	4435615.6
1543	581739.2	4435579.3	581667.6	4435588.7	581645.9	4435591.6	581687.5	4435586.1
1544	581731.1	4435550.1	581665.4	4435558.8	581638.9	4435562.2	581683.5	4435556.4
1545	581725.9	4435520.5	581662.7	4435528.9	581634.1	4435532.6	581681.9	4435526.3
1546	581721.3	4435490.9	581656.3	4435499.4			581683.2	4435495.9
1547	581708.0	4435462.4	581649.6	4435470.1			581675.3	4435466.7
1548	581703.5	4435432.7	581644.9	4435440.4	581618.0	4435444.0	581666.3	4435437.6
1549	581696.5	4435403.4	581636.6	4435411.2	581612.2	4435414.5	581657.4	4435408.5
1550	581690.7	4435373.9	581633.1	4435381.5	581606.7	4435384.9	581649.3	4435379.3
1551	581687.9	4435344.0	581626.3	4435352.1	581602.3	4435355.2	581642.2	4435350.0
1552	581678.9	4435314.9	581620.0	4435322.7			581637.0	4435320.4
1553	581670.4	4435285.8	581616.3	4435292.9	581593.2	4435295.9	581630.9	4435291.0
1554	581672.1	4435255.3	581614.1	4435262.9	581588.3	4435266.3	581624.2	4435261.6
1555	581673.0	4435224.9	581614.4	4435232.6	581585.2	4435236.5	581616.0	4435232.4
1556	581667.3	4435195.4	581619.5	4435201.7	581584.7	4435206.3	581610.2	4435202.9
1557	581664.0	4435165.6	581621.3	4435171.2	581578.5	4435176.8	581604.4	4435173.4
1558	581657.4	4435136.2	581619.5	4435141.2	581571.6	4435147.5	581600.3	4435143.7
1559	581647.0	4435107.3	581617.2	4435111.2	581568.7	4435117.6	581596.7	4435113.9
1560	581640.4	4435077.9	581608.8	4435082.1	581566.7	4435087.6	581590.1	4435084.5
1561	581635.1	4435048.3	581602.0	4435052.7	581563.8	4435057.7	581584.1	4435055.1
1562	581630.8	4435018.6	581598.0	4435023.0	581560.8	4435027.9	581581.5	4435025.1
1563	581626.4	4434989.0	581591.9	4434993.5	581556.3	4434998.2	581577.9	4434995.4
1564	581627.4	4434958.6	581586.3	4434964.0	581549.3	4434968.9	581574.0	4434965.6
1565	581628.5	4434928.2	581582.0	4434934.3	581542.0	4434939.6	581568.3	4434936.1
1566	581622.1	4434898.8	581576.8	4434904.7	581538.7	4434909.7	581564.9	4434906.3
1567	581616.6	4434869.2	581571.9	4434875.1	581536.6	4434879.8	581560.9	4434876.6
1568	581613.5	4434839.4	581567.7	4434845.4	581532.4	4434850.1	581555.7	4434847.0
1569	581606.0	4434810.1	581565.1	4434815.5	581527.8	4434820.4	581551.1	4434817.3
1570	581598.9	4434780.8	581561.5	4434785.7	581522.1	4434790.9	581547.9	4434787.5
1571	581592.6	4434751.3	581558.5	4434755.8	581514.4	4434761.6	581544.6	4434757.7
1572	581586.0	4434722.0	581557.5	4434725.7	581507.9	4434732.2	581541.7	4434727.8
1573	581575.9	4434693.0	581554.7	4434695.8	581501.9	4434702.8	581537.3	4434698.1
1574	581571.0	4434663.4	581551.1	4434666.0	581499.4	4434672.8	581531.5	4434668.6
1575	581563.2	4434634.2	581543.5	4434636.8	581498.7	4434642.7	581525.3	4434639.2
1576	581554.2	4434605.1	581536.9	4434607.4			581519.4	4434609.7
1577	581551.3	4434575.2	581531.3	4434577.9	581485.4	4434583.9	581514.7	4434580.1
1578	581546.8	4434545.6	581524.1	4434548.6	581477.4	4434554.7	581512.1	4434550.1
1579	581544.1	4434515.7	581520.5	4434518.8	581470.1	4434525.4	581509.3	4434520.2
1580	581542.2	4434485.7	581517.7	4434488.9	581464.5	4434495.9	581504.7	4434490.6
1581	581533.2	4434456.6	581513.1	4434459.2	581460.0	4434466.2	581499.8	4434461.0
1582	581529.1	4434426.9	581508.9	4434429.5	581457.3	4434436.3	581496.0	4434431.2
1583	581523.6	4434397.3	581504.9	4434399.8	581453.9	4434406.5	581490.6	4434401.7
1584	581515.3	4434368.2	581500.6	4434370.1	581449.3	4434376.8	581487.3	4434371.8
1585	581507.1	4434339.0	581495.8	4434340.5	581442.3	4434347.5	581481.8	4434342.3
1586	581500.4	4434309.6	581489.9	4434311.0	581436.2	4434318.1	581475.7	4434312.9
1587	581495.8	4434279.9	581484.4	4434281.5	581433.6	4434288.1	581470.7	4434283.2
1588	581493.5	4434250.0	581479.1	4434251.9			581464.7	4434253.8
1589	581492.4	4434219.9	581471.7	4434222.6	581426.6	4434228.5	581460.6	4434224.1
1590	581486.1	4434190.4	581463.8	4434193.4	581423.8	4434198.7	581454.4	4434194.6

Table B-1. High-Water Shoreline Position Change - Sandy Hook to Barnegat Inlet, New Jersey

	High-Water Shoreline Position Change Rate (m/yr)						High-Water Shoreline Position (UTM Zone 18, NAD 1983)							
	1836/39 to			1855/75 to		1932/33 to	1836/39		1855/75		1932/33		1977	
Transect #	1855/75	1932/33	1977	1932/33	1977	1977	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)
1591	-0.7	-0.6	-0.2	-0.6	-0.1	0.7	581480.7	4434160.9	581455.7	4434164.2	581421.6	4434168.7	581450.5	4434164.9
1592	-0.8	-0.6	-0.2	-0.5	-0.0	0.6	581474.6	4434131.4	581447.9	4434135.0	581417.9	4434138.9	581445.3	4434135.3
1593	-0.9	-0.6	-0.2	-0.4	0.0	0.6	581471.1	4434101.6	581439.0	4434105.9	581414.7	4434109.1	581440.5	4434105.7
1594	-1.0	-0.6	-0.2	-0.4	0.1	0.6	581467.7	4434071.8	581430.7	4434076.7	581410.7	4434079.3	581435.5	4434076.1
1595	-1.1	-0.6	-0.3	-0.3	0.0	0.5	581464.3	4434042.0	581424.8	4434047.2	581409.3	4434049.3	581429.2	4434046.6
1596	-1.1	-0.5	-0.2	-0.2	0.0	0.4	581456.2	4434012.8	581418.8	4434017.8	581406.2	4434019.4	581422.8	4434017.2
1597	-1.0	-0.5	-0.2	-0.2	0.1	0.4	581447.4	4433983.7	581411.8	4433988.4	581401.4	4433989.8	581416.5	4433987.8
1598	-1.0	-0.5	-0.2	-0.2	0.1	0.4	581438.4	4433954.7	581403.3	4433959.3	581394.4	4433960.5	581410.8	4433958.3
1599	-1.1	-0.5	-0.2	-0.2	0.1	0.4	581433.3	4433925.1	581395.9	4433930.0	581386.9	4433931.2	581404.9	4433928.8
1600	-1.1	-0.5	-0.2	-0.2	0.1	0.4	581429.6	4433895.3	581389.3	4433900.6	581379.3	4433901.9	581398.6	4433899.4
1601	-1.1	-0.6	-0.2	-0.2	0.1	0.5	581424.3	4433865.7	581384.5	4433871.0	581372.9	4433872.5	581393.2	4433869.8
1602	-1.2	-0.6	-0.2	-0.3	0.1	0.5	581421.1	4433835.9	581379.9	4433841.3	581364.2	4433843.4	581387.8	4433840.3
1603	-1.2	-0.7	-0.3	-0.4	0.1	0.7	581417.9	4433806.1	581376.5	4433811.5	581353.0	4433814.6	581382.3	4433810.8
1604	-1.1	-0.7	-0.3	-0.5	0.0	0.7	581412.2	4433776.6	581373.9	4433781.6	581345.9	4433785.3	581376.5	4433781.3
1605	-1.0	-0.7	-0.3	-0.5	-0.0	0.6	581407.1	4433747.0	581371.7	4433751.6	581342.3	4433755.5	581369.9	4433751.9
1606	-0.9	-0.6	-0.3	-0.5	-0.0	0.6	581398.8	4433717.8	581366.5	4433722.1	581340.0	4433725.5	581365.1	4433722.2
1607	-0.9	-0.6	-0.3	-0.4	-0.0	0.5	581394.9	4433688.1	581362.2	4433692.4	581337.3	4433695.6	581360.3	4433692.6
1608	-0.8	-0.6	-0.2	-0.4	-0.0	0.4	581386.9	4433658.9	581357.2	4433662.8	581335.8	4433665.6	581354.7	4433663.1
1609	-0.8	-0.5	-0.2	-0.3	0.0	0.4	581378.1	4433629.7	581349.7	4433633.5	581331.9	4433635.8	581349.9	4433633.5
1610	-0.7	-0.5	-0.2	-0.3	0.0	0.4	581370.2	4433600.5	581344.2	4433604.0	581327.3	4433606.2	581345.1	4433603.8
1611	-0.8	-0.4	-0.2	-0.2	0.0	0.4	581363.3	4433571.2	581335.0	4433574.9	581322.6	4433576.5	581339.0	4433574.4
1612	-0.8	-0.4	-0.2	-0.2	0.1	0.4	581356.9	4433541.8	581327.8	4433545.6	581318.5	4433546.8	581333.7	4433544.8
1613	-0.9	-0.4	-0.2	-0.1	0.1	0.3	581353.2	4433512.0	581322.0	4433516.1	581314.3	4433517.1	581328.2	4433515.3
1614	-1.1	-0.5	-0.2	-0.1	0.1	0.3	581354.6	4433481.5	581316.3	4433486.6	581308.2	4433487.7	581323.1	4433485.7
1615	-1.3	-0.6	-0.3	-0.2	0.1	0.3	581359.1	4433450.7	581311.3	4433457.0	581302.8	4433458.1	581317.6	4433456.2
1616	-1.4	-0.6	-0.3	-0.2	0.0	0.3	581357.5	4433420.7	581308.7	4433427.1	581298.9	4433428.4	581312.9	4433426.5
1617	-1.3	-0.6	-0.3	-0.2	0.0	0.3	581353.0	4433391.0	581305.4	4433397.3	581294.4	4433398.7	581308.9	4433396.8
1618	-1.5	-0.7	-0.4	-0.2	0.0	0.3	581350.2	4433361.1	581298.4	4433367.9	581289.2	4433369.1	581302.3	4433367.4
1619	-1.5	-0.7	-0.4	-0.2	0.0	0.3	581346.4	4433331.3	581294.0	4433338.2	581285.1	4433339.4	581297.8	4433337.7
1620	-1.6	-0.7	-0.4	-0.1	0.0	0.2	581346.0	4433301.1	581290.6	4433308.4	581282.8	4433309.5	581293.3	4433308.1
1621	-1.6	-0.7	-0.4	-0.1	0.0	0.3	581342.8	4433271.3	581284.6	4433279.0	581277.0	4433280.0	581289.0	4433278.4
1622	-1.4	-0.7	-0.4	-0.2	0.0	0.3	581331.9	4433242.5	581280.4	4433249.2	581269.6	4433250.7	581284.0	4433248.8
1623	-1.4	-0.7	-0.4	-0.2	0.0	0.4	581327.4	4433212.8	581276.8	4433219.5	581263.0	4433221.3	581279.0	4433219.2
1624	-1.3	-0.7	-0.3	-0.3	0.0	0.4	581319.9	4433183.5	581273.5	4433189.6	581256.8	4433191.8	581273.8	4433189.6
1625	-1.1	-0.6	-0.3	-0.3	0.0	0.4	581308.2	4433154.8	581268.5	4433160.0	581250.1	4433162.5	581268.2	4433160.1
1626	-1.0	-0.6	-0.3	-0.4	-0.1	0.4	581302.7	4433125.3	581269.0	4433129.7	581246.0	4433132.7	581263.7	4433130.4
1627	-0.9	-0.6	-0.3	-0.4	-0.1	0.4	581297.6	4433095.7	581264.8	4433100.0	581240.7	4433103.2	581259.3	4433100.7
1628	-0.9	-0.7	-0.3	-0.5	-0.1	0.5	581293.3	4433066.0	581259.7	4433070.4	581233.1	4433073.9	581254.2	4433071.1
1629	-1.0	-0.7	-0.3	-0.5	-0.0	0.6	581289.0	4433036.3	581252.3	4433041.1	581225.1	4433044.7	581249.9	4433041.5
1630	-1.0	-0.7	-0.3	-0.6	-0.0	0.7	581282.5	4433006.9	581247.0	4433011.6	581215.2	4433015.8	581245.4	4433011.8
1631	-1.1	-0.8	-0.3	-0.6	0.0	0.8	581277.0	4432977.4	581239.1	4432982.4	581207.3	4432986.5	581239.8	4432982.3
1632	-1.1	-0.7	-0.3	-0.5	0.0	0.7	581271.7	4432947.8	581232.1	4432953.0	581204.2	4432956.7	581233.5	4432952.8
1633	-1.1		-0.3		0.0	0.4	581265.9	4432918.3	581227.2	4432923.4			581227.8	4432923.3
1634	-1.2	-0.6	-0.3	-0.2	0.0	0.3	581264.2	4432888.3	581221.2	4432893.9	581211.0	4432895.3	581223.1	4432893.7
1635	-1.5	-0.6	-0.4	-0.1	0.0	0.2	581268.2	4432857.5	581215.4	4432864.4	581208.7	4432865.3	581217.5	4432864.2
1636	-1.6	-0.7	-0.4	-0.1	0.0	0.2	581266.4	4432827.5	581210.0	4432834.9	581205.4	4432835.5	581213.1	4432834.5
1637	-1.5	-0.7	-0.4	-0.1	0.0	0.2	581259.3	4432798.1	581205.1	4432805.3	581199.0	4432806.1	581207.9	4432804.9
1638	-1.4	-0.6	-0.4	-0.1	0.0	0.2	581249.1	4432769.2	581200.7	4432775.6	581194.3	4432776.4	581201.4	4432775.5
1639	-1.3	-0.5	-0.3	-0.1	-0.0	0.1	581241.9	4432739.9	581197.0	4432745.8	581193.2	4432746.3	581196.1	4432745.9
1640	-1.1	-0.4	-0.3	-0.1	-0.0	0.0	581231.3	4432711.1	581194.0	4432716.0	581191.2	4432716.3	581192.1	4432716.2
1641	-1.0	-0.4	-0.3	-0.1	-0.1	-0.0	581226.2	4432681.5	581191.0	4432686.1	581186.4	4432686.7	581186.1	4432686.7
1642	-0.9	-0.4	-0.3	-0.1	-0.1	0.0	581217.3	4432652.4	581186.7	4432656.4	581179.2	4432657.4	581180.2	4432657.3
1643	-0.9	-0.4	-0.3	-0.1	-0.1	0.1	581211.8	4432622.8	581179.8	4432627.1	581171.6	4432628.1	581174.9	4432627.7

Table B-1. High-Water Shoreline Position Change - Sandy Hook to Barnegat Inlet, New Jersey

High-Water Shoreline Position Change Rate (m/yr)							High-Water Shoreline Position (UTM Zone 18, NAD 1983)									
1836/39 to			1855/75 to			1932/33 to	1836/39		1855/75		1932/33		1977			
Transect #	1855/75	1932/33	1977	1932/33	1977	1977	Transect #	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)
1644	-1.0	-0.4	-0.3	-0.1	-0.0	0.1	1644	581207.0	4432593.2	581172.4	4432597.8	581165.9	4432598.6	581169.3	4432598.2
1645	-1.1	-0.5	-0.3	-0.1	0.0	0.1	1645	581202.8	4432563.5	581164.4	4432568.6	581159.2	4432569.2	581164.4	4432568.6
1646	-1.2	-0.5	-0.3	-0.0	0.0	0.1	1646	581197.4	4432534.0	581156.0	4432539.4	581153.9	4432539.7	581158.1	4432539.1
1647	-1.3		-0.3		0.1	0.2	1647	581192.6	4432504.3	581147.9	4432510.2			581153.1	4432509.5
1648	-1.2		-0.3		0.1	0.2	1648	581185.8	4432475.0	581142.9	4432480.6			581147.7	4432480.0
1649	-1.1		-0.3		0.0	0.2	1649	581178.6	4432445.7	581139.3	4432450.8			581142.0	4432450.5
1650	-1.2	-0.6	-0.3	-0.2	0.0	0.3	1650	581175.3	4432415.8	581133.7	4432421.3	581123.5	4432422.7	581136.3	4432421.0
1651	-1.2	-0.5	-0.3	-0.1	0.1	0.3	1651	581169.7	4432386.3	581126.5	4432392.0	581119.8	4432392.9	581132.6	4432391.2
1652	-1.3	-0.5	-0.3	-0.1	0.1	0.4	1652	581163.9	4432356.8	581118.3	4432362.8	581113.2	4432363.5	581128.7	4432361.5
1653	-1.4	-0.6	-0.3	-0.1	0.1	0.4	1653	581159.4	4432327.2	581110.4	4432333.6	581106.6	4432334.1	581123.4	4432331.9
1654	-1.4	-0.6	-0.3	-0.0	0.1	0.3	1654	581154.4	4432297.5	581103.7	4432304.2	581103.2	4432304.3	581117.6	4432302.4
1655	-1.6	-0.5	-0.3	0.1	0.2	0.3	1655	581151.1	4432267.7	581094.8	4432275.1	581101.3	4432274.3	581112.2	4432272.8
1656	-1.7	-0.5	-0.3	0.2	0.2	0.2	1656	581147.7	4432237.9	581086.0	4432246.0	581097.3	4432244.5	581104.5	4432243.6
1657	-1.8		-0.3		0.2	0.2	1657	581144.0	4432208.1	581081.3	4432216.4			581100.2	4432213.9
1658	-1.7	-0.5	-0.3	0.2	0.2	0.1	1658	581138.3	4432178.6	581077.8	4432186.6	581091.4	4432184.8	581096.8	4432184.1
1659	-1.7	-0.5	-0.3	0.2	0.2	0.2	1659	581132.6	4432149.1	581073.2	4432156.9	581083.9	4432155.5	581094.3	4432154.2
1660	-1.8	-0.6	-0.3	0.1	0.2	0.3	1660	581131.8	4432119.0	581069.2	4432127.2	581076.3	4432126.3	581090.1	4432124.5
1661	-1.7		-0.3		0.2	0.3	1661	581125.7	4432089.5	581064.0	4432097.6			581085.3	4432094.8
1662	-1.7	-0.5	-0.3	0.2	0.2	0.3	1662	581117.8	4432060.3	581058.0	4432068.2	581069.8	4432066.6	581080.8	4432065.2
1663	-1.7	-0.5	-0.3	0.2	0.2	0.3	1663	581113.4	4432030.6	581052.5	4432038.6	581063.7	4432037.2	581074.5	4432035.7
1664	-1.7	-0.5	-0.3	0.2	0.2	0.3	1664	581104.1	4432001.6	581044.8	4432009.4	581054.3	4432008.1	581068.0	4432006.3
1665	-1.6	-0.5	-0.2	0.1	0.2	0.4	1665	581092.3	4431972.9	581035.7	4431980.3	581043.1	4431979.4	581060.0	4431977.1
1666	-1.5	-0.6	-0.2	-0.0	0.2	0.5	1666	581086.7	4431943.4	581032.6	4431950.5	581032.2	4431950.5	581053.3	4431947.8
1667	-1.6	-0.7	-0.3	-0.1	0.2	0.6	1667	581084.3	4431913.4	581027.3	4431920.9	581023.4	4431921.4	581048.7	4431918.1
1668	-1.5	-0.7	-0.3	-0.2	0.2	0.6	1668	581079.8	4431883.8	581027.7	4431890.6	581019.3	4431891.7	581045.7	4431888.2
1669	-1.4	-0.6	-0.2	-0.1	0.2	0.5	1669	581072.7	4431854.4	581023.8	4431860.9	581017.2	4431861.7	581039.7	4431858.8
1670	-1.5	-0.6	-0.3	-0.1	0.2	0.5	1670	581071.3	4431824.3	581019.2	4431831.2	581012.8	4431832.1	581034.0	4431829.3
1671	-1.4	-0.6	-0.3	-0.1	0.2	0.5	1671	581061.9	4431795.3	581012.8	4431801.8	581007.2	4431802.5	581028.4	4431799.7
1672	-1.3	-0.5	-0.2	-0.1	0.2	0.4	1672	581052.4	4431766.3	581006.8	4431772.3	581003.0	4431772.8	581021.7	4431770.4
1673	-1.3	-0.5	-0.2	-0.0	0.2	0.4	1673	581048.2	4431736.6	581000.5	4431742.9	580998.8	4431743.1	581015.8	4431740.9
1674	-1.3	-0.5	-0.2	0.0	0.2	0.4	1674	581038.9	4431707.6	580994.3	4431713.5	580994.3	4431713.4	581010.6	4431711.3
1675	-1.4	-0.5	-0.2	0.1	0.2	0.3	1675	581036.6	4431677.6	580987.1	4431684.1	580990.6	4431683.7	581005.0	4431681.8
1676	-1.3	-0.4	-0.2	0.1	0.2	0.3	1676	581025.6	4431648.8	580979.6	4431654.9	580987.5	4431653.8	580998.9	4431652.3
1677	-1.4	-0.4	-0.2	0.2	0.2	0.3	1677	581020.4	4431619.2	580972.1	4431625.6	580981.6	4431624.4	580992.5	4431622.9
1678	-1.6	-0.5	-0.3	0.1	0.2	0.4	1678	581020.5	4431589.0	580965.3	4431596.2	580971.4	4431595.4	580986.5	4431593.4
1679	-1.6	-0.6	-0.3	0.1	0.2	0.4	1679	581014.7	4431559.5	580958.4	4431566.9	580963.0	4431566.3	580980.3	4431564.0
1680	-1.5	-0.5	-0.2	0.1	0.2	0.5	1680	581004.6	4431530.5	580952.5	4431537.4	580955.3	4431537.0	580975.1	4431534.4
1681	-1.3	-0.5	-0.2	-0.0	0.2	0.5	1681	580995.4	4431501.5	580948.4	4431507.7	580947.9	4431507.7	580970.1	4431504.8
1682	-1.4	-0.6	-0.2	-0.1	0.2	0.6	1682	580994.2	4431471.4	580945.0	4431477.9	580938.7	4431478.7	580965.6	4431475.2
1683	-1.6	-0.7	-0.3	-0.1	0.2	0.6	1683	580997.7	4431440.7	580939.8	4431448.3	580933.7	4431448.1	580959.1	4431445.8
1684	-1.7		-0.3		0.2	0.5	1684	580994.7	4431410.8	580935.0	4431418.7			580953.4	4431416.3
1685	-1.5	-0.6	-0.3	-0.0	0.2	0.5	1685	580984.7	4431381.9	580930.7	4431389.0	580928.3	4431389.3	580947.8	4431386.7
1686	-1.4	-0.6	-0.3	-0.0	0.2	0.4	1686	580977.6	4431352.5	580926.1	4431359.3	580925.4	4431359.4	580942.1	4431357.2
1687	-1.6	-0.6	-0.3	0.0	0.2	0.4	1687	580975.9	4431322.5	580919.8	4431329.9	580920.6	4431329.8	580936.3	4431327.7
1688	-1.7	-0.7	-0.3	0.0	0.2	0.4	1688	580974.2	4431292.5	580912.5	4431300.6	580913.9	4431300.4	580929.6	4431298.3
1689	-1.9	-0.7	-0.4	0.0	0.2	0.4	1689	580974.2	4431262.2	580905.3	4431271.3	580905.7	4431271.2	580924.5	4431268.8
1690	-1.9	-0.8	-0.4	-0.1	0.2	0.5	1690	580969.1	4431232.6	580900.8	4431241.6	580898.1	4431242.0	580919.1	4431239.2
1691	-1.8	-0.7	-0.4	-0.1	0.2	0.5	1691	580962.4	4431203.2	580897.9	4431211.7	580893.0	4431212.4	580913.9	4431209.6
1692	-1.7	-0.7	-0.3	-0.1	0.2	0.5	1692	580953.4	4431174.2	580893.9	4431182.0	580887.2	4431182.9	580909.0	4431180.0
1693	-1.5	-0.7	-0.3	-0.1	0.1	0.5	1693	580943.9	4431145.2	580890.1	4431152.3	580881.8	4431153.3	580902.7	4431150.6
1694	-1.5	-0.7	-0.3	-0.2	0.1	0.5	1694	580939.8	4431115.4	580886.5	4431122.5	580876.3	4431123.8	580898.3	4431120.9
1695	-1.4	-0.7	-0.3	-0.3	0.1	0.6	1695	580932.3	4431086.2	580883.1	4431092.7	580869.0	4431094.5	580893.4	4431091.3
1696	-1.3	-0.7	-0.3	-0.3	0.1	0.6	1696	580924.8	4431056.9	580878.8	4431063.0	580861.0	4431065.3	580888.1	4431061.7

Table B-1. High-Water Shoreline Position Change - Sandy Hook to Barnegat Inlet, New Jersey

	High-Water Shoreline Position Change Rate (m/yr)						High-Water Shoreline Position (UTM Zone 18, NAD 1983)							
	1836/39 to			1855/75 to		1932/33 to	1836/39		1855/75		1932/33		1977	
Transect #	1855/75	1932/33	1977	1932/33	1977	1977	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)
1697	-1.2	-0.6		-0.3			580916.7	4431027.7	580873.4	4431033.4	580856.7	4431035.6		
1698	-1.1	-0.6	-0.2	-0.2	0.1	0.5	580908.0	4430998.6	580867.3	4431004.0	580854.9	4431005.6	580876.4	4431002.8
1699	-1.1	-0.6	-0.2	-0.3	0.1	0.6	580902.4	4430969.1	580861.6	4430974.4	580847.6	4430976.3	580872.7	4430973.0
1700	-1.1	-0.6	-0.2	-0.3	0.1	0.6	580897.7	4430939.4	580857.4	4430944.7	580841.9	4430946.8	580866.8	4430943.5
1701	-1.0	-0.6	-0.2	-0.3	0.1	0.6	580890.4	4430910.1	580853.2	4430915.0	580837.7	4430917.1	580862.1	4430913.9
1702	-0.9	-0.5	-0.2	-0.2	0.1	0.5	580881.2	4430881.1	580848.9	4430885.3	580836.9	4430886.9	580858.2	4430884.1
1703	-0.8	-0.4	-0.2	-0.2	0.1	0.4	580873.2	4430851.9	580845.2	4430855.6	580835.0	4430856.9	580853.4	4430854.5
1704	-0.9	-0.4	-0.2	-0.2	0.1	0.4	580872.7	4430821.7	580842.0	4430825.7	580831.3	4430827.1	580849.0	4430824.8
1705	-1.0	-0.5	-0.2	-0.2	0.1	0.5	580869.7	4430791.8	580834.7	4430796.4	580823.7	4430797.9	580843.7	4430795.3
1706	-1.1	-0.5	-0.2	-0.2	0.1	0.5	580866.1	4430762.0	580827.5	4430767.1	580816.0	4430768.6	580837.9	4430765.8
1707	-1.2	-0.6	-0.2	-0.2	0.1	0.6	580861.5	4430732.4	580820.1	4430737.8	580808.7	4430739.3	580833.9	4430736.0
1708	-1.2	-0.6	-0.2	-0.2	0.2	0.6	580857.3	4430702.7	580813.2	4430708.5	580802.3	4430709.9	580827.9	4430706.6
1709	-1.2	-0.6	-0.2	-0.2	0.1	0.5	580850.3	4430673.4	580807.9	4430678.9	580798.5	4430680.2	580822.2	4430677.1
1710	-1.1	-0.6	-0.2	-0.2	0.1	0.5	580844.4	4430643.9	580804.0	4430649.2	580792.5	4430650.7	580815.7	4430647.7
1711	-1.1	-0.5	-0.2	-0.2	0.1	0.5	580838.6	4430614.4	580799.5	4430619.5	580790.3	4430620.7	580810.2	4430618.1
1712	-1.0	-0.4	-0.2	-0.1	0.1	0.4	580829.0	4430585.4	580794.7	4430589.9	580788.3	4430590.7	580804.8	4430588.6
1713	-1.1	-0.5	-0.2	-0.1	0.1	0.4	580829.6	4430555.0	580789.7	4430560.3	580782.9	4430561.2	580800.3	4430558.9
1714	-1.2	-0.6	-0.3	-0.2	0.1	0.5	580829.2	4430524.8	580785.1	4430530.6	580775.4	4430531.9	580795.1	4430529.3
1715	-1.2	-0.6	-0.2	-0.2	0.1	0.5	580820.2	4430495.8	580779.2	4430501.2	580767.2	4430502.7	580789.7	4430499.8
1716	-1.0	-0.5	-0.2	-0.2	0.1	0.6	580808.1	4430467.1	580771.7	4430471.9	580760.1	4430473.4	580784.8	4430470.2
1717	-0.9	-0.4	-0.1	-0.2	0.2	0.5	580796.7	4430438.3	580765.0	4430442.5	580756.7	4430443.6	580780.1	4430440.5
1718	-0.8	-0.4	-0.1	-0.1	0.2	0.5	580790.8	4430408.9	580760.7	4430412.8	580752.9	4430413.8	580776.0	4430410.8
1719	-0.7	-0.4	-0.1	-0.2	0.1	0.5	580786.2	4430379.2	580761.5	4430382.4	580749.2	4430384.1	580770.0	4430381.3
1720	-0.8	-0.4	-0.1	-0.1	0.1	0.4	580783.5	4430349.3	580753.3	4430353.3	580747.2	4430354.1	580765.4	4430351.7
1721	-0.9	-0.4	-0.1	-0.1	0.1	0.4	580778.7	4430319.7	580746.6	4430323.9	580742.7	4430324.4	580759.8	4430322.2
1722	-1.0	-0.4	-0.1	-0.0	0.2	0.4	580773.4	4430290.1	580739.6	4430294.6	580737.8	4430294.8	580755.2	4430292.5
1723	-1.0	-0.4	-0.1	-0.0	0.2	0.4	580768.8	4430260.5	580733.9	4430265.0	580732.0	4430265.3	580750.1	4430262.9
1724				-0.0	0.2	0.5			580725.5	4430235.9	580723.9	4430236.1	580745.5	4430233.3
1725	-1.5	-0.6	-0.2	-0.0	0.2	0.5	580769.1	4430199.9	580717.5	4430206.7	580717.2	4430206.7	580740.1	4430203.7
1726	-1.4	-0.5	-0.2	-0.0	0.2	0.5	580760.3	4430170.8	580711.9	4430177.2	580711.1	4430177.3	580734.6	4430174.2
1727	-1.3	-0.5	-0.2	-0.0	0.2	0.6	580751.7	4430141.7	580705.0	4430147.8	580703.7	4430148.0	580728.7	4430144.7
1728	-1.3	-0.5	-0.2	-0.0	0.2	0.6	580743.4	4430112.5	580698.6	4430118.4	580698.4	4430118.4	580722.5	4430115.3
1729	-1.3	-0.5	-0.2	-0.1	0.2	0.7	580738.8	4430082.9	580693.5	4430088.8	580689.4	4430089.4	580717.5	4430085.7
1730	-1.3		-0.2		0.2	0.7	580735.7	4430053.0	580688.1	4430059.3			580712.8	4430056.0
1731	-1.3		-0.2		0.3	0.9	580728.2	4430023.7	580680.7	4430030.0			580707.6	4430026.4
1732	-1.4		-0.1		0.3	1.0	580720.8	4429994.4	580671.2	4430001.0			580701.1	4429997.0
1733	-1.4	-0.7	-0.1	-0.3	0.3	1.1	580712.7	4429965.3	580662.6	4429971.8	580648.2	4429973.7	580695.7	4429967.5
1734	-1.4		-0.1		0.4	1.0	580704.6	4429936.1	580654.2	4429942.7			580689.6	4429938.0
1735	-1.6	-0.7	-0.1	-0.1	0.4	1.0	580699.8	4429906.4	580644.5	4429913.7	580639.2	4429914.4	580684.0	4429908.5
1736	-1.6	-0.6	-0.1	-0.1	0.4	1.0	580695.9	4429876.7	580639.6	4429884.1	580636.8	4429884.5	580679.8	4429878.8
1737	-1.5	-0.6	-0.1	-0.1	0.4	1.0	580688.2	4429847.4	580636.4	4429854.3	580632.1	4429854.8	580674.2	4429849.3
1738	-1.3	-0.6	-0.1	-0.2	0.3	1.0	580683.3	4429817.8	580635.4	4429824.1	580626.3	4429825.3	580667.5	4429819.9
1739	-1.1	-0.6	-0.1	-0.2	0.3	0.9	580674.4	4429788.7	580633.8	4429794.1	580622.1	4429795.6	580661.9	4429790.4
1740	-1.0	-0.6	-0.1	-0.3	0.3	1.0	580664.8	4429759.7	580629.6	4429764.4	580610.8	4429766.9	580656.2	4429760.9
1741	-1.1		-0.1		0.3	1.2	580663.4	4429729.7	580623.9	4429734.9			580651.2	4429731.3
1742	-1.3	-0.8	-0.1	-0.5	0.3	1.3	580662.0	4429699.6	580617.2	4429705.5	580589.5	4429709.1	580645.3	4429701.8
1743	-1.4	-0.8	-0.1	-0.4	0.3	1.3	580657.7	4429669.9	580609.1	4429676.3	580583.8	4429679.6	580639.6	4429672.3
1744	-1.4	-0.8	-0.1	-0.4	0.3	1.3	580651.0	4429640.5	580600.8	4429647.1	580579.2	4429650.0	580633.7	4429642.8
1745	-1.5	-0.8	-0.1	-0.3	0.3	1.2	580647.8	4429610.7	580595.0	4429617.6	580575.7	4429620.2	580628.5	4429613.2
1746	-1.5	-0.8	-0.1	-0.4	0.3	1.2	580641.7	4429581.2	580590.1	4429588.0	580570.2	4429590.6	580622.4	4429583.8
1747	-1.1	-0.8	-0.2	-0.6	0.2	1.2	580636.9	4429551.6	580596.6	4429556.9	580563.3	4429561.3	580616.6	4429554.3
1748	-1.3	-0.8	-0.2	-0.6	0.2	1.3	580635.2	4429521.6	580590.0	4429527.5	580557.2	4429531.8	580612.4	4429524.6
1749	-1.3	-0.9	-0.2	-0.6	0.2	1.2	580631.5	4429491.8	580584.7	4429498.0	580552.4	4429502.2	580605.9	4429495.2

Table B-1. High-Water Shoreline Position Change - Sandy Hook to Barnegat Inlet, New Jersey

	High-Water Shoreline Position Change Rate (m/yr)						High-Water Shoreline Position (UTM Zone 18, NAD 1983)							
		1836/39 to		1855/75 to		1932/33 to	1836/39		1855/75		1932/33		1977	
Transect #	1855/75	1932/33	1977	1932/33	1977	1977	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)
1750	-1.1	-0.8	-0.2	-0.6	0.2	1.2	580621.9	4429462.8	580581.5	4429468.1	580546.8	4429472.7	580599.9	4429465.7
1751	-1.1	-0.8	-0.2	-0.7	0.2	1.2	580615.2	4429433.4	580577.9	4429438.3	580539.2	4429443.4	580592.7	4429436.4
1752	-1.0	-0.8	-0.2	-0.7	0.1	1.3	580608.3	4429404.1	580573.6	4429408.7	580531.5	4429414.2	580587.7	4429406.8
1753	-1.0	-0.9	-0.2	-0.8	0.1	1.3	580603.1	4429374.5	580568.3	4429379.1	580524.2	4429384.9	580581.9	4429377.3
1754	-1.1	-0.9	-0.2	-0.8	0.1	1.3	580599.2	4429344.8	580561.9	4429349.7	580518.8	4429355.3	580576.2	4429347.8
1755	-1.2	-0.9	-0.2	-0.7	0.2	1.3	580598.9	4429314.5	580555.7	4429320.2	580515.8	4429325.5	580570.4	4429318.3
1756	-1.3	-0.9	-0.2	-0.7	0.1	1.2	580596.9	4429284.5	580550.5	4429290.6	580512.9	4429295.6	580564.7	4429288.8
1757	-1.3		-0.3		0.1	1.1	580593.2	4429254.8	580545.4	4429261.1			580559.1	4429259.3
1758	-1.1	-0.8	-0.2	-0.6	0.1	1.0	580580.1	4429226.2	580540.4	4429231.5	580508.2	4429235.7	580553.0	4429229.8
1759	-0.9	-0.7	-0.1	-0.5	0.1	1.0	580566.0	4429197.8	580535.6	4429201.8	580505.3	4429205.8	580547.6	4429200.3
1760	-0.6	-0.5	-0.1	-0.5	0.1	0.9	580551.8	4429169.4	580531.3	4429172.1	580502.2	4429176.0	580542.1	4429170.7
1761	-0.5	-0.6	-0.1	-0.6	0.1	1.0	580546.1	4429139.9	580527.1	4429142.4	580493.0	4429146.9	580536.5	4429141.2
1762	-0.5	-0.6	-0.1	-0.6	0.1	1.0	580539.0	4429110.6	580522.6	4429112.8	580487.4	4429117.4	580530.7	4429111.7
1763	-0.4		-0.1		0.1	1.0	580531.1	4429081.4	580515.5	4429083.5			580524.6	4429082.2
1764	-0.6	-0.6	-0.1	-0.7	0.1	1.1	580528.7	4429051.4	580506.8	4429054.3	580469.8	4429059.2	580518.1	4429052.9
1765	-0.6	-0.6	-0.1	-0.7	0.1	1.1	580520.8	4429022.2	580501.4	4429024.8	580463.1	4429029.8	580512.1	4429023.4
1766	-0.6	-0.6	-0.1	-0.6	0.1	1.1	580514.1	4428992.9	580493.3	4428995.6	580457.3	4429000.3	580506.4	4428993.9
1767	-0.7	-0.6	-0.1	-0.6	0.2	1.1	580508.2	4428963.4	580484.4	4428966.5	580451.8	4428970.8	580500.7	4428964.4
1768	-0.9	-0.6	-0.1	-0.5	0.2	1.1	580506.2	4428933.4	580475.4	4428937.4	580446.2	4428941.3	580494.5	4428934.9
1769	-0.9	-0.6	-0.1	-0.5	0.2	1.1	580501.0	4428903.8	580468.7	4428908.1	580442.2	4428911.5	580488.2	4428905.5
1770	-0.9	-0.6	-0.1	-0.5	0.2	1.0	580495.8	4428874.2	580464.3	4428878.4	580438.6	4428881.8	580482.6	4428876.0
1771	-0.9	-0.6	-0.1	-0.4	0.2	1.0	580491.8	4428844.5	580459.4	4428848.8	580434.7	4428852.0	580476.9	4428846.5
1772	-0.7	-0.5	-0.1	-0.4	0.2	1.0	580480.5	4428815.7	580454.3	4428819.2	580430.1	4428822.4	580471.8	4428816.9
1773	-0.7	-0.5	-0.1	-0.4	0.2	0.9	580473.1	4428786.4	580449.1	4428789.6	580425.7	4428792.7	580466.8	4428787.3
1774	-0.6	-0.5	-0.0	-0.4	0.2	0.9	580465.1	4428757.2	580443.1	4428760.1	580421.5	4428763.0	580461.8	4428757.7
1775	-0.6		0.0		0.2	0.9	580457.6	4428728.0	580435.9	4428730.8			580457.3	4428728.0
1776	-0.6	-0.4	0.0	-0.3	0.2	0.9	580448.2	4428698.9	580428.3	4428701.6	580414.1	4428703.4	580452.1	4428698.4
1777	-0.5	-0.3	0.1	-0.2	0.3	0.9	580437.7	4428670.1	580419.6	4428672.4	580409.2	4428673.8	580446.3	4428668.9
1778	-0.4	-0.2	0.1	-0.1	0.2	0.7	580425.0	4428641.5	580411.8	4428643.2	580405.2	4428644.1	580434.0	4428640.3
1779	-0.4	-0.2	0.1	-0.0	0.3	0.6	580417.1	4428612.3	580403.6	4428614.0	580402.6	4428614.2	580429.3	4428610.7
1780	-0.5	-0.1	0.1	0.1	0.3	0.5	580411.6	4428582.7	580395.5	4428584.8	580400.1	4428584.2	580423.5	4428581.2
1781	-0.5	-0.1	0.1	0.1	0.3	0.5	580406.0	4428553.2	580387.0	4428555.7	580393.8	4428554.8	580416.2	4428551.9
1782	-0.7	-0.2	0.1	0.2	0.4	0.6	580400.1	4428523.7	580376.3	4428526.9	580386.1	4428525.6	580411.9	4428522.2
1783	-0.7	-0.2	0.1	0.2	0.4	0.5	580395.2	4428494.1	580369.5	4428497.5	580381.7	4428495.9	580405.0	4428492.8
1784	-0.8	-0.1	0.1	0.3	0.4	0.5	580392.1	4428464.3	580363.4	4428468.0	580378.9	4428466.0	580400.2	4428463.2
1785	-0.8	-0.2	0.0	0.3	0.4	0.5	580389.0	4428434.4	580359.3	4428438.3	580374.2	4428436.4	580395.1	4428433.6
1786	-0.8	-0.2	0.0	0.2	0.3	0.5	580386.9	4428404.4	580358.1	4428408.2	580368.5	4428406.8	580391.2	4428403.9
1787	-0.7	-0.2	0.1	0.1	0.3	0.6	580380.0	4428375.1	580356.6	4428378.2	580363.3	4428377.3	580387.4	4428374.1
1788	-0.4	-0.2	0.1	0.0	0.3	0.6	580370.6	4428346.1	580354.8	4428348.1	580356.3	4428347.9	580383.6	4428344.3
1789	-0.5	-0.2	0.1	-0.0	0.3	0.7	580369.8	4428315.9	580352.7	4428318.2	580350.4	4428318.4	580379.8	4428314.6
1790	-0.5	-0.2	0.1	-0.1	0.3	0.7	580367.1	4428286.0	580348.3	4428288.5	580344.7	4428289.0	580377.0	4428284.7
1791	-0.4	-0.2	0.1	-0.1	0.3	0.8	580356.8	4428257.1	580343.3	4428258.9	580337.0	4428259.7	580373.0	4428255.0
1792	-0.4	-0.2	0.1	-0.2	0.3	0.9	580351.9	4428227.5	580339.2	4428229.1	580330.7	4428230.3	580369.3	4428225.2
1793	-0.3	-0.2	0.1	-0.2	0.3	0.9	580347.0	4428197.9	580335.7	4428199.4	580324.3	4428200.9	580364.5	4428195.6
1794	-0.6	-0.3	0.1	-0.2	0.3	0.9	580351.9	4428167.0	580332.0	4428169.6	580320.4	4428171.1	580361.4	4428165.7
1795	-0.6	-0.3	0.1	-0.1	0.3	0.9	580346.4	4428137.4	580326.8	4428140.0	580319.6	4428141.0	580357.7	4428135.9
1796	-0.4	-0.2	0.1	-0.1	0.3	0.8	580337.4	4428108.4	580323.5	4428110.2	580317.1	4428111.0	580352.2	4428106.4
1797	-0.4	-0.2	0.1	-0.1	0.3	0.8	580333.0	4428078.7	580317.9	4428080.7	580311.1	4428081.6	580346.8	4428076.9
1798	-0.5	-0.3	0.1	-0.2	0.3	0.9	580328.8	4428049.0	580312.0	4428051.2	580302.4	4428052.4	580341.0	4428047.4
1799	-0.5		0.1		0.3	0.9	580323.2	4428019.5	580306.0	4428021.7			580334.3	4428018.0
1800	-0.5	-0.3	0.1	-0.2	0.3	0.9	580317.2	4427990.0	580300.1	4427992.2	580290.3	4427993.5	580327.6	4427988.6
1801	-0.7	-0.3	0.0	-0.1	0.3	0.8	580318.5	4427959.5	580294.7	4427962.7	580286.6	4427963.7	580321.7	4427959.1
1802	-0.8	-0.4	-0.0	-0.2	0.3	0.9	580319.4	4427929.2	580290.1	4427933.0	580280.8	4427934.3	580318.6	4427929.3

Table B-1. High-Water Shoreline Position Change - Sandy Hook to Barnegat Inlet, New Jersey

High-Water Shoreline Position Change Rate (m/yr)						High-Water Shoreline Position (UTM Zone 18, NAD 1983)											
1836/39 to			1855/75 to		1932/33 to	1836/39			1855/75			1932/33			1977		
Transect #	1855/75	1932/33	1977	1932/33	1977	1977	Transect #	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)
1803	-0.9	-0.4	-0.0	-0.1	0.3	0.8	1803	580318.2	4427899.1	580285.7	4427903.4	580278.5	4427904.3	580314.3	4427899.6		
1804	-0.8	-0.4	-0.0	-0.1	0.3	0.7	1804	580311.3	4427869.7	580282.0	4427873.6	580277.4	4427874.2	580309.4	4427870.0		
1805	-0.8	-0.4	-0.0	-0.1	0.3	0.8	1805	580305.9	4427840.2	580277.6	4427843.9	580271.2	4427844.7	580304.7	4427840.3		
1806	-0.8	-0.4	-0.0	-0.2	0.3	0.9	1806	580301.6	4427810.5	580271.5	4427814.4	580262.5	4427815.6	580300.3	4427810.6		
1807	-0.7	-0.4	0.0	-0.1	0.3	0.9	1807	580292.0	4427781.5	580265.7	4427784.9	580258.7	4427785.9	580296.1	4427780.9		
1808	-0.7	-0.4	0.0	-0.1	0.3	0.9	1808	580285.5	4427752.1	580260.0	4427755.4	580252.5	4427756.4	580290.4	4427751.4		
1809	-0.7	-0.4	0.1	-0.2	0.3	0.9	1809	580279.1	4427722.7	580254.5	4427725.9	580245.5	4427727.1	580285.3	4427721.8		
1810	-0.6	-0.3	0.1	-0.1	0.3	0.9	1810	580270.0	4427693.6	580248.7	4427696.4	580241.3	4427697.4	580280.1	4427692.3		
1811	-0.6	-0.3	0.1	-0.1	0.3	0.9	1811	580265.5	4427663.9	580243.4	4427666.8	580235.3	4427667.9	580275.2	4427662.7		
1812	-0.5	-0.3	0.1	-0.2	0.3	0.9	1812	580255.0	4427635.1	580237.7	4427637.3	580228.4	4427638.6	580269.4	4427633.2		
1813	-0.4		0.1		0.3	0.9	1813	580245.5	4427606.0	580230.6	4427608.0			580263.0	4427603.7		
1814	-0.4	-0.2	0.1	-0.0	0.3	0.8	1814	580238.7	4427576.7	580224.6	4427578.5	580222.7	4427578.8	580256.8	4427574.3		
1815	-0.4	-0.1	0.1	0.1	0.3	0.7	1815	580234.1	4427547.0	580218.7	4427549.1	580221.8	4427548.7	580252.4	4427544.6		
1816	-0.4	-0.1	0.2	0.1	0.3	0.7	1816	580225.3	4427517.9	580212.9	4427519.6	580216.3	4427519.1	580246.9	4427515.1		
1817	-0.4	-0.1	0.2	0.1	0.3	0.6	1817	580219.6	4427488.4	580206.6	4427490.1	580213.4	4427489.2	580241.3	4427485.6		
1818	-0.4		0.2		0.4	0.6	1818	580214.3	4427458.9	580200.3	4427460.7			580235.9	4427456.0		
1819	-0.4	-0.1	0.2	0.1	0.4	0.6	1819	580208.9	4427429.3	580195.8	4427431.0	580203.3	4427430.1	580231.3	4427426.4		
1820	-0.2	-0.1	0.2	0.1	0.4	0.8	1820	580199.6	4427400.3	580191.3	4427401.4	580194.0	4427401.0	580226.6	4427396.7		
1821	-0.1	-0.1	0.2	-0.1	0.4	0.9	1821	580191.0	4427371.2	580186.0	4427371.8	580182.8	4427372.2	580222.4	4427367.0		
1822	-0.1	-0.1	0.2	-0.1	0.4	0.9	1822	580186.3	4427341.5	580181.2	4427342.2	580175.4	4427343.0	580216.5	4427337.5		
1823	-0.1	-0.1	0.2	-0.2	0.3	0.9	1823	580182.2	4427311.8	580179.4	4427312.2	580170.2	4427313.4	580211.0	4427308.0		
1824	-0.2	-0.2	0.2	-0.2	0.3	0.9	1824	580195.2	4427281.1	580178.5	4427282.0	580165.1	4427283.8	580206.0	4427278.4		
1825	-0.1	-0.2	0.2	-0.3	0.3	1.0	1825	580179.5	4427251.6	580174.5	4427252.3	580159.9	4427254.2	580201.3	4427248.8		
1826	0.1	-0.1	0.2	-0.3	0.2	0.9	1826	580167.9	4427222.9	580170.6	4427222.5	580154.5	4427224.7	580194.7	4427219.4		
1827	0.3	-0.1	0.2	-0.3	0.2	0.9	1827	580156.4	4427194.2	580167.2	4427192.7	580148.3	4427195.2	580188.5	4427189.9		
1828	0.4	-0.1	0.2	-0.4	0.2	0.9	1828	580151.3	4427164.6	580165.0	4427162.8	580143.1	4427165.7	580182.8	4427160.4		
1829	0.4	-0.1	0.2	-0.4	0.2	0.9	1829	580148.1	4427134.7	580161.2	4427133.0	580139.8	4427135.8	580178.6	4427130.7		
1830	0.3	-0.1	0.2	-0.3	0.2	0.8	1830	580144.0	4427105.0	580153.0	4427103.8	580136.8	4427106.0	580172.8	4427101.2		
1831	0.1	-0.1	0.2	-0.2	0.2	0.8	1831	580142.4	4427075.0	580145.4	4427074.6	580132.5	4427076.3	580166.9	4427071.7		
1832	-0.1	-0.2	0.1	-0.2	0.2	0.8	1832	580144.3	4427044.5	580139.6	4427045.1	580127.0	4427046.7	580162.7	4427042.0		
1833	-0.4	-0.3	0.1	-0.2	0.3	0.8	1833	580144.1	4427014.2	580131.5	4427015.9	580119.6	4427017.4	580156.4	4427012.6		
1834	-0.5	-0.3	0.1	-0.1	0.3	0.8	1834	580140.7	4426984.4	580122.4	4426986.8	580114.5	4426987.9	580150.8	4426983.1		
1835	-0.6	-0.3	0.1	-0.1	0.3	0.8	1835	580139.0	4426954.4	580117.0	4426957.3	580111.4	4426958.0	580145.3	4426953.5		
1836	-0.4	-0.2	0.1	-0.1	0.3	0.7	1836	580126.4	4426925.8	580111.8	4426927.7	580107.6	4426928.3	580139.9	4426924.0		
1837	-0.4	-0.2	0.1	-0.1	0.3	0.8	1837	580119.1	4426896.5	580106.7	4426898.1	580101.4	4426898.8	580136.0	4426894.2		
1838	-0.2	-0.2	0.1	-0.2	0.3	0.8	1838	580112.0	4426867.2	580103.9	4426868.2	580094.3	4426869.5	580131.0	4426864.7		
1839	-0.0	-0.2	0.2	-0.3	0.2	0.9	1839	580104.4	4426837.9	580103.5	4426838.0	580087.9	4426840.1	580124.8	4426835.2		
1840	0.2	-0.2	0.2	-0.4	0.2	1.0	1840	580093.5	4426809.1	580101.7	4426808.0	580079.0	4426811.0	580120.3	4426805.5		
1841	0.4	-0.1	0.2	-0.4	0.2	1.0	1841	580085.1	4426779.9	580097.8	4426778.3	580073.6	4426781.4	580115.2	4426776.0		
1842	0.4	-0.1	0.2	-0.4	0.2	0.9	1842	580078.4	4426750.5	580093.0	4426748.6	580068.5	4426751.8	580109.6	4426746.4		
1843	0.4	-0.1	0.2	-0.4	0.2	1.0	1843	580074.3	4426720.8	580087.7	4426719.1	580063.6	4426722.2	580105.1	4426716.8		
1844	0.3	-0.2	0.2	-0.4	0.2	1.0	1844	580071.5	4426690.9	580082.4	4426689.5	580057.8	4426692.7	580100.7	4426687.1		
1845	0.4	-0.1	0.2	-0.4	0.2	0.9	1845	580063.9	4426661.7	580078.0	4426659.8	580053.0	4426663.1	580093.7	4426657.8		
1846	0.5	-0.1	0.2	-0.5	0.1	1.0	1846	580057.1	4426632.3	580074.5	4426630.0	580047.7	4426633.6	580089.0	4426628.1		
1847	0.6	-0.1	0.2	-0.5	0.1	0.9	1847	580052.5	4426602.7	580072.2	4426600.1	580042.8	4426603.9	580083.5	4426598.6		
1848	0.6	-0.1	0.2	-0.5	0.1	0.8	1848	580045.6	4426573.3	580066.9	4426570.5	580039.6	4426574.1	580076.4	4426569.2		
1849	0.7	-0.1	0.2	-0.6	0.0	0.8	1849	580039.8	4426543.8	580066.2	4426540.3	580034.2	4426544.6	580070.5	4426539.8		
1850	0.8	-0.1	0.2	-0.6	0.0	0.9	1850	580034.8	4426514.2	580064.7	4426510.3	580029.8	4426514.9	580067.0	4426510.0		
1851	1.0	0.0	0.3	-0.6	0.0	0.8	1851	580023.7	4426485.4	580058.3	4426480.9	580024.7	4426485.3	580059.9	4426480.7		
1852	0.9	0.0	0.3	-0.5	0.1	0.8	1852	580016.8	4426456.1	580049.6	4426451.7	580020.1	4426455.6	580055.1	4426451.0		
1853	0.8	0.0	0.3	-0.5	0.1	0.8	1853	580010.9	4426426.6	580041.0	4426422.6	580013.6	4426426.2	580049.9	4426421.4		
1854	0.7	-0.0	0.3	-0.5	0.1	0.9	1854	580009.1	4426396.6	580034.2	4426393.3	580005.3	4426397.1	580044.9	4426391.8		
1855	0.7	-0.1	0.3	-0.5	0.1	0.9	1855	580006.3	4426366.7	580030.6	4426363.5	580002.1	4426367.2	580040.3	4426362.2		

Table B-1. High-Water Shoreline Position Change - Sandy Hook to Barnegat Inlet, New Jersey

	High-Water Shoreline Position Change Rate (m/yr)						High-Water Shoreline Position (UTM Zone 18, NAD 1983)							
	1836/39 to			1855/75 to		1932/33 to	1836/39		1855/75		1932/33		1977	
Transect #	1855/75	1932/33	1977	1932/33	1977	1977	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)
1856	0.9	0.1	0.3	-0.5	0.1	0.8	579994.7	4426337.9	580026.5	4426333.8	580000.0	4426337.2	580034.1	4426332.7
1857	0.9	0.1	0.3	-0.4	0.1	0.7	579987.9	4426308.6	580019.9	4426304.4	579999.8	4426307.0	580030.9	4426302.9
1858	0.8		0.3		0.1	0.6	579984.3	4426278.8	580013.3	4426275.0			580025.8	4426273.3
1859	0.8	0.1	0.3	-0.3	0.1	0.7	579979.1	4426249.2	580008.7	4426245.3	579991.4	4426247.6	580020.7	4426243.7
1860	0.9	0.2	0.3	-0.3	0.1	0.7	579973.7	4426219.7	580003.9	4426215.7	579987.9	4426217.8	580016.1	4426214.1
1861	0.8	0.2	0.3	-0.2	0.1	0.6	579970.9	4426189.8	579999.1	4426186.1	579987.0	4426187.7	580011.3	4426184.5
1862	0.8	0.1	0.3	-0.3	0.1	0.6	579965.6	4426160.2	579994.9	4426156.4	579979.0	4426158.4	580006.0	4426154.9
1863	0.9	0.1	0.3	-0.4	0.1	0.7	579956.8	4426131.1	579990.5	4426126.7	579969.8	4426129.4	580001.6	4426125.2
1864	0.9		0.3		0.1	0.8	579953.2	4426101.3	579986.6	4426096.9			579997.3	4426095.5
1865	1.0	0.1	0.3	-0.5	0.1	0.8	579949.4	4426071.6	579984.1	4426067.0	579957.3	4426070.5	579992.0	4426066.0
1866	0.9		0.3		0.1	0.8	579943.7	4426042.1	579977.0	4426037.7			579987.9	4426036.2
1867	0.9	0.1	0.3	-0.3	0.1	0.7	579938.0	4426012.6	579968.8	4426008.5	579950.3	4426010.9	579980.2	4426007.0
1868	0.9		0.3		0.1	0.8	579931.9	4425983.1	579964.1	4425978.9			579973.7	4425977.6
1869	1.0	0.1	0.3	-0.5	0.0	0.7	579925.8	4425953.6	579960.7	4425949.0	579934.4	4425952.5	579964.3	4425948.6
1870	1.1	0.1	0.3	-0.5	-0.0	0.6	579919.6	4425924.2	579958.2	4425919.1	579931.1	4425922.7	579957.7	4425919.2
1871	1.0	0.1	0.3	-0.4	0.0	0.6	579917.5	4425894.2	579954.5	4425889.3	579929.4	4425892.7	579956.6	4425889.1
1872	1.1		0.3		0.0	0.6	579912.6	4425864.6	579950.3	4425859.6			579953.5	4425859.2
1873	1.2	0.3	0.4	-0.4	0.1	0.6	579902.3	4425835.7	579946.6	4425829.9	579925.4	4425832.7	579951.2	4425829.3
1874	1.3	0.2	0.4	-0.4	0.1	0.8	579896.6	4425806.2	579942.3	4425800.2	579916.7	4425803.5	579949.4	4425799.2
1875	1.2	0.2	0.4	-0.5	0.1	0.9	579895.2	4425776.1	579937.5	4425770.5	579908.9	4425774.3	579946.8	4425769.3
1876	1.2	0.2	0.4	-0.5	0.1	1.0	579890.2	4425746.5	579932.0	4425741.0	579904.3	4425744.7	579945.8	4425739.2
1877	1.3	0.2	0.4	-0.5	0.2	0.9	579883.1	4425717.2	579928.1	4425711.3	579902.4	4425714.7	579943.5	4425709.2
1878	1.1	0.1	0.4	-0.5	0.2	1.0	579884.6	4425686.7	579925.0	4425681.4	579897.5	4425685.0	579941.1	4425679.3
1879	0.9	0.1	0.4	-0.5	0.2	1.1	579887.4	4425656.1	579921.1	4425651.7	579892.2	4425655.5	579938.7	4425649.4
1880	0.9	0.1	0.4	-0.5	0.2	1.1	579882.6	4425626.5	579914.5	4425622.3	579887.4	4425625.9	579934.0	4425619.7
1881	0.8	0.1	0.4	-0.4	0.2	1.0	579877.6	4425596.9	579907.0	4425593.0	579883.2	4425596.1	579928.7	4425590.2
1882	0.9	0.1	0.4	-0.4	0.2	1.0	579873.7	4425567.1	579903.9	4425563.2	579879.8	4425566.3	579921.6	4425560.8
1883	0.8	0.1	0.3	-0.4	0.2	0.9	579869.4	4425537.4	579898.8	4425533.6	579876.1	4425536.6	579915.9	4425531.3
1884	0.7	0.1	0.3	-0.4	0.2	0.9	579866.3	4425507.6	579892.1	4425504.2	579872.0	4425506.8	579909.5	4425501.9
1885	0.7	0.1	0.3	-0.3	0.2	0.8	579861.6	4425478.0	579886.4	4425474.7	579868.2	4425477.1	579904.2	4425472.3
1886	0.7		0.3		0.2	0.8	579860.0	4425447.9	579883.3	4425444.8			579898.9	4425442.8
1887	1.0	0.1	0.4	-0.4	0.2	1.0	579844.9	4425419.6	579879.7	4425415.0	579855.2	4425418.3	579897.4	4425412.7
1888	1.3	0.2	0.4	-0.5	0.1	0.9	579832.9	4425391.0	579878.1	4425385.0	579852.3	4425388.4	579890.0	4425383.4
1889	1.0	0.2	0.4	-0.3	0.1	0.8	579834.2	4425360.5	579871.1	4425355.7	579851.5	4425358.2	579884.4	4425353.9
1890	0.8	0.1	0.3	-0.4	0.1	0.7	579835.6	4425330.1	579865.2	4425326.2	579845.2	4425328.8	579877.5	4425324.6
1891	0.7	0.0	0.3	-0.4	0.1	0.7	579836.5	4425299.7	579862.8	4425296.2	579840.2	4425299.2	579871.8	4425295.1
1892	0.8	0.1	0.3	-0.4	0.1	0.7	579831.7	4425270.1	579859.5	4425266.4	579837.0	4425269.4	579866.5	4425265.5
1893	0.8	0.1	0.3	-0.4	0.1	0.7	579825.8	4425240.6	579854.9	4425236.8	579833.8	4425239.5	579865.6	4425235.4
1894	0.7	0.1	0.3	-0.3	0.2	0.8	579822.5	4425210.8	579846.6	4425207.6	579830.1	4425209.8	579862.7	4425205.5
1895	0.4	0.0	0.3	-0.2	0.3	0.9	579824.9	4425180.2	579838.9	4425178.4	579826.7	4425180.0	579864.2	4425175.0
1896	0.3	0.1	0.3	-0.1	0.3	0.8	579821.2	4425150.4	579831.7	4425149.0	579826.3	4425149.7	579861.1	4425145.2
1897	0.3	0.1	0.3	-0.0	0.3	0.7	579817.4	4425120.7	579826.7	4425119.4	579824.5	4425119.7	579854.4	4425115.8
1898	0.2	0.1	0.3	-0.1	0.3	0.7	579813.6	4425090.9	579821.6	4425089.9	579818.0	4425090.3	579847.2	4425086.5
1899	0.3	0.1	0.3	0.0	0.2	0.6	579806.9	4425061.5	579816.5	4425060.3	579816.6	4425060.3	579841.1	4425057.0
1900	0.2	0.1	0.3	0.1	0.3	0.5	579802.7	4425031.8	579811.3	4425030.7	579815.5	4425030.1	579836.4	4425027.4
1901	0.2	0.1	0.2	0.0	0.2	0.5	579802.7	4425001.6	579808.7	4425000.8	579810.5	4425000.5	579833.4	4424997.5
1902	0.2	0.1	0.2	0.0	0.2	0.5	579799.7	4424971.7	579805.7	4424970.9	579806.4	4424970.8	579828.5	4424967.9
1903	0.0	0.1	0.2	0.1	0.3	0.6	579801.1	4424941.3	579802.1	4424941.1	579806.3	4424940.6	579830.9	4424937.3
1904	-0.1	0.0	0.2	0.1	0.3	0.7	579803.4	4424910.7	579799.0	4424911.3	579803.3	4424910.7	579831.4	4424907.0
1905	-0.1	-0.0	0.2	0.0	0.3	0.6	579800.6	4424880.8	579796.2	4424881.4	579797.8	4424881.2	579825.1	4424877.6
1906	0.1	-0.0	0.2	-0.1	0.3	0.7	579789.9	4424852.0	579791.8	4424851.7	579789.2	4424852.1	579820.5	4424847.9
1907	0.2	0.1	0.3	0.0	0.3	0.7	579778.5	4424823.2	579787.0	4424822.1	579786.9	4424822.1	579815.8	4424818.3
1908	0.2	0.1	0.2	-0.0	0.2	0.6	579779.8	4424792.8	579785.0	4424792.1	579784.2	4424792.2	579809.4	4424788.9

Table B-1. High-Water Shoreline Position Change - Sandy Hook to Barnegat Inlet, New Jersey

	High-Water Shoreline Position Change Rate (m/yr)						High-Water Shoreline Position (UTM Zone 18, NAD 1983)							
	1836/39 to			1855/75 to		1932/33 to	1836/39		1855/75		1932/33		1977	
Transect #	1855/75	1932/33	1977	1932/33	1977	1977	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)
1909	0.2		0.2		0.2	0.5	579776.2	4424763.0	579784.4	4424761.9			579805.1	4424759.2
1910	0.3	0.1	0.2	-0.1	0.2	0.5	579771.8	4424733.3	579784.0	4424731.7	579778.0	4424732.5	579799.7	4424729.6
1911	0.5	0.1	0.2	-0.2	0.1	0.6	579765.7	4424703.9	579783.3	4424701.5	579773.5	4424702.8	579797.5	4424699.7
1912	0.6	0.1	0.3	-0.2	0.2	0.7	579759.8	4424674.4	579782.4	4424671.4	579769.7	4424673.1	579798.2	4424669.3
1913	0.8	0.2	0.3	-0.3	0.1	0.7	579751.0	4424645.3	579780.1	4424641.4	579765.9	4424643.3	579794.1	4424639.6
1914	1.0	0.2	0.3	-0.3	0.1	0.6	579742.2	4424616.2	579776.4	4424611.7	579761.1	4424613.7	579788.9	4424610.0
1915	1.1	0.3	0.4	-0.2	0.1	0.6	579732.9	4424587.1	579771.9	4424582.0	579758.0	4424583.8	579783.2	4424580.5
1916	1.2	0.3	0.4	-0.3	0.1	0.6	579724.2	4424558.0	579768.5	4424552.2	579753.4	4424554.2	579779.7	4424550.7
1917	1.3	0.3	0.4	-0.3	0.1	0.5	579720.7	4424528.2	579766.7	4424522.2	579750.5	4424524.3	579773.8	4424521.2
1918	1.4	0.3	0.4	-0.3	0.0	0.5	579715.2	4424498.7	579764.5	4424492.2	579746.9	4424494.5	579768.0	4424491.7
1919	1.4	0.4	0.4	-0.3	0.0	0.4	579713.1	4424468.7	579762.1	4424462.3	579745.3	4424464.5	579762.5	4424462.2
1920	1.3	0.3	0.4	-0.3	0.1	0.6	579712.3	4424438.5	579759.2	4424432.4	579740.7	4424434.8	579765.3	4424431.6
1921	1.4	0.3	0.4	-0.4	0.1	0.7	579708.1	4424408.8	579756.9	4424402.4	579736.0	4424405.2	579767.3	4424401.0
1922	1.4	0.3	0.4	-0.4	0.1	0.7	579706.1	4424378.8	579755.6	4424372.3	579733.3	4424375.3	579761.8	4424371.5
1923	1.4	0.3	0.4	-0.4	0.1	0.7	579704.7	4424348.8	579754.6	4424342.2	579731.1	4424345.3	579761.6	4424341.3
1924	1.4	0.3	0.4	-0.4	0.1	0.7	579703.9	4424318.6	579753.6	4424312.1	579729.7	4424315.2	579760.4	4424311.2
1925	1.6	0.4	0.5	-0.4	0.1	0.7	579695.8	4424289.4	579751.7	4424282.1	579730.1	4424284.9	579759.1	4424281.1
1926	1.7	0.4	0.5	-0.4	0.1	0.7	579690.6	4424259.9	579750.2	4424252.0	579728.0	4424254.9	579757.0	4424251.1
1927	1.7	0.4	0.5	-0.4	0.1	0.7	579687.0	4424230.1	579748.7	4424221.9	579724.5	4424225.1	579755.5	4424221.1
1928	1.7	0.4	0.5	-0.5	0.1	0.8	579686.3	4424199.9	579747.3	4424191.9	579721.1	4424195.3	579755.9	4424190.7
1929	1.8	0.4	0.5	-0.4	0.1	0.8	579682.6	4424170.1	579745.8	4424161.8	579721.2	4424165.0	579754.3	4424160.7
1930	1.9	0.5	0.5	-0.4	0.1	0.7	579677.9	4424140.5	579744.3	4424131.7	579719.4	4424135.0	579751.0	4424130.9
1931	1.9	0.4	0.5	-0.5	0.0	0.8	579673.8	4424110.8	579743.1	4424101.6	579714.6	4424105.4	579747.5	4424101.1
1932	2.0	0.4	0.5	-0.5	0.0	0.8	579671.3	4424080.8	579742.0	4424071.5	579710.8	4424075.6	579744.6	4424071.2
1933	2.1	0.4	0.5	-0.6	-0.0	0.7	579668.2	4424051.0	579741.6	4424041.3	579708.3	4424045.7	579740.6	4424041.5
1934	2.2	0.5	0.5	-0.6	-0.0	0.7	579663.7	4424021.3	579741.5	4424011.1	579706.7	4424015.7	579737.3	4424011.6
1935	2.4	0.5	0.6	-0.6	-0.1	0.7	579658.9	4423991.7	579742.8	4423980.7	579706.0	4423985.5	579734.6	4423981.7
1936	2.6	0.5	0.6	-0.8	-0.1	0.7	579651.9	4423962.4	579745.1	4423950.1	579701.2	4423955.9	579732.4	4423951.8
1937	2.7	0.6	0.6	-0.8	-0.1	0.8	579646.3	4423932.8	579743.3	4423920.1	579697.7	4423926.1	579730.9	4423921.7
1938	2.7	0.6	0.6	-0.8	-0.1	0.8	579641.2	4423903.2	579737.8	4423890.5	579694.6	4423896.2	579727.4	4423891.9
1939	2.8	0.6	0.7	-0.7	-0.1	0.7	579634.4	4423873.9	579732.6	4423861.0	579692.9	4423866.2	579724.3	4423862.1
1940	2.8	0.6	0.7	-0.8	-0.1	0.8	579630.1	4423844.2	579731.6	4423830.8	579688.0	4423836.6	579720.8	4423832.3
1941	2.9		0.7		-0.1	0.8	579625.9	4423814.5	579727.5	4423801.1			579717.8	4423802.4
1942	3.0	0.7	0.7	-0.8	-0.1	0.7	579618.4	4423785.2	579725.5	4423771.1	579682.2	4423776.8	579714.0	4423772.6
1943	3.0	0.7	0.7	-0.8	-0.1	0.8	579614.2	4423755.5	579721.9	4423741.3	579677.7	4423747.1	579711.7	4423742.7
1944	2.8	0.6	0.7	-0.7	-0.1	0.8	579616.6	4423724.9	579715.8	4423711.9	579674.6	4423717.3	579707.9	4423712.9
1945	2.8	0.7	0.7	-0.7	-0.1	0.7	579612.4	4423695.2	579711.2	4423682.2	579674.0	4423687.1	579705.0	4423683.0
1946	2.8	0.7	0.7	-0.6	-0.1	0.7	579610.6	4423665.2	579709.9	4423652.1	579675.8	4423656.6	579704.7	4423652.8
1947	2.9	0.8	0.7	-0.6	-0.1	0.6	579604.8	4423635.7	579709.1	4423622.0	579675.4	4423626.4	579702.9	4423622.8
1948	3.0	0.8	0.7	-0.5	-0.0	0.6	579598.6	4423606.3	579704.4	4423592.3	579675.6	4423596.1	579700.3	4423592.9
1949	2.9	0.9	0.8	-0.4	-0.0	0.5	579595.4	4423576.4	579699.1	4423562.8	579674.6	4423566.0	579698.0	4423562.9
1950	2.8		0.7		0.0	0.6	579594.9	4423546.2	579695.4	4423533.0			579696.6	4423532.9
1951	2.8	0.8	0.8	-0.5	0.0	0.7	579591.8	4423516.4	579693.1	4423503.1	579664.9	4423506.8	579693.8	4423503.0
1952	2.8	0.8	0.8	-0.5	0.0	0.7	579587.2	4423486.7	579688.3	4423473.4	579662.1	4423476.9	579690.3	4423473.2
1953	2.8	0.9	0.8	-0.3	0.1	0.6	579580.4	4423457.4	579681.1	4423444.1	579663.1	4423446.5	579689.4	4423443.0
1954	2.8	0.9	0.9	-0.3	0.2	0.7	579573.4	4423428.0	579674.7	4423414.7	579660.0	4423416.6	579690.0	4423412.7
1955	2.8	0.9	0.9	-0.3	0.2	0.8	579570.7	4423398.1	579671.4	4423384.9	579653.2	4423387.3	579689.3	4423382.5
1956	2.8	0.9	0.9	-0.4	0.2	0.9	579568.8	4423368.1	579669.5	4423354.9	579649.6	4423357.5	579687.4	4423352.5
1957	3.1	1.0	0.9	-0.4	0.2	0.9	579558.0	4423339.3	579668.6	4423324.7	579646.5	4423327.6	579684.3	4423322.7
1958	3.2	1.0	0.9	-0.5	0.1	0.8	579554.1	4423309.5	579669.7	4423294.3	579643.8	4423297.7	579679.7	4423293.0
1959	3.3	1.0	0.9	-0.5	0.1	0.8	579550.3	4423279.8	579666.5	4423264.5	579640.5	4423267.9	579674.8	4423263.4
1960	3.2	1.0	0.9	-0.4	0.1	0.8	579547.4	4423249.9	579660.7	4423235.0	579637.8	4423238.0	579671.7	4423233.5
1961	3.1	0.9	0.9	-0.4	0.1	0.8	579547.1	4423219.7	579658.4	4423205.0	579633.9	4423208.3	579668.6	4423203.7

Table B-1. High-Water Shoreline Position Change - Sandy Hook to Barnegat Inlet, New Jersey

	High-Water Shoreline Position Change Rate (m/yr)						High-Water Shoreline Position (UTM Zone 18, NAD 1983)								
	1836/39 to			1855/75 to		1932/33 to		1836/39		1855/75		1932/33		1977	
Transect #	1855/75	1932/33	1977	1932/33	1977	1977	Transect #	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)
1962	3.3	1.0	0.9	-0.5	0.1	0.8	1962	579539.6	4423190.4	579658.0	4423174.8	579632.1	4423178.2	579666.1	4423173.8
1963	3.4	1.1	1.0	-0.4	0.1	0.7	1963	579534.0	4423160.9	579654.3	4423145.0	579631.8	4423148.0	579664.0	4423143.8
1964	3.3	1.1	0.9	-0.3	0.1	0.7	1964	579532.3	4423130.9	579649.4	4423115.4	579631.7	4423117.8	579661.4	4423113.9
1965	3.2	1.1	0.9	-0.3	0.1	0.6	1965	579533.0	4423100.5	579646.6	4423085.6	579632.1	4423087.5	579657.3	4423084.1
1966	3.2	1.1	0.9	-0.2	0.1	0.5	1966	579530.8	4423070.5	579643.1	4423055.8	579632.3	4423057.2	579653.3	4423054.4
1967	3.2	1.1	0.9	-0.2	0.1	0.5	1967	579526.5	4423040.8	579641.1	4423025.8	579630.6	4423027.1	579650.3	4423024.5
1968	3.3	1.1	0.9	-0.2	0.1	0.4	1968	579522.2	4423011.1	579638.2	4422995.9	579628.4	4422997.2	579644.2	4422995.1
1969	3.2	1.1	0.9	-0.2	0.0	0.3	1969	579518.9	4422981.3	579634.4	4422966.1	579624.7	4422967.4	579638.3	4422965.6
1970	3.2	1.1	0.9	-0.3	0.1	0.5	1970	579518.6	4422951.1	579633.2	4422936.0	579618.6	4422937.9	579638.5	4422935.3
1971	3.2	1.1	0.9	-0.3	0.0	0.5	1971	579516.4	4422921.1	579631.0	4422906.0	579613.9	4422908.3	579635.1	4422905.5
1972	3.1	1.0	0.9	-0.3	0.0	0.5	1972	579515.1	4422891.1	579627.2	4422876.3	579609.1	4422878.7	579631.2	4422875.8
1973	3.2	1.0	0.9	-0.4	0.0	0.6	1973	579507.9	4422861.7	579623.1	4422846.6	579601.6	4422849.4	579626.9	4422846.1
1974	3.3		0.9		0.0	0.7	1974	579501.5	4422832.3	579618.9	4422816.9			579622.7	4422816.4
1975	3.3	1.0	0.9	-0.4	0.1	0.6	1975	579494.7	4422803.0	579613.4	4422787.3	579591.3	4422790.2	579618.7	4422786.6
1976	3.2	1.0	0.9	-0.4	0.1	0.6	1976	579493.4	4422772.9	579607.6	4422757.8	579587.6	4422760.5	579614.5	4422756.9
1977	3.0	1.0	0.9	-0.3	0.1	0.6	1977	579493.4	4422742.6	579601.7	4422728.4	579583.3	4422730.8	579610.2	4422727.2
1978	3.0	1.0	0.9	-0.3	0.1	0.7	1978	579489.9	4422712.8	579597.1	4422698.7	579580.2	4422700.9	579608.4	4422697.2
1979	3.0	0.9	0.9	-0.4	0.1	0.8	1979	579486.7	4422683.0	579594.1	4422668.8	579572.6	4422671.7	579605.6	4422667.3
1980	2.9		0.9		0.1	0.8	1980	579485.7	4422652.9	579589.6	4422639.2			579602.0	4422637.5
1981	2.8	0.9	0.8	-0.3	0.2	0.8	1981	579484.3	4422622.8	579582.4	4422609.9	579565.8	4422612.0	579599.6	4422607.6
1982	2.6	0.8	0.8	-0.3	0.2	0.8	1982	579482.4	4422592.8	579575.4	4422580.5	579560.9	4422582.4	579596.5	4422577.7
1983	2.6	0.9	0.9	-0.2	0.2	0.8	1983	579477.0	4422563.2	579568.7	4422551.1	579557.8	4422552.6	579592.7	4422548.0
1984	2.6	0.9	0.8	-0.2	0.2	0.8	1984	579473.5	4422533.4	579565.2	4422521.3	579554.8	4422522.7	579589.0	4422518.2
1985	2.4	0.9	0.8	-0.1	0.3	0.8	1985	579470.8	4422503.5	579557.6	4422492.1	579551.7	4422492.9	579586.2	4422488.3
1986	2.4	0.9	0.9	-0.0	0.3	0.8	1986	579465.8	4422473.9	579550.8	4422462.7	579548.9	4422463.0	579583.7	4422458.4
1987				0.1	0.3	0.7	1987			579544.7	4422433.3	579549.1	4422432.7	579578.3	4422428.8
1988				0.1	0.3	0.6	1988			579540.0	4422403.6	579547.8	4422402.6	579574.8	4422399.0
1989				0.1	0.3	0.6	1989			579536.1	4422373.9	579544.0	4422372.8	579570.3	4422369.4
1990				0.1	0.3	0.6	1990			579530.8	4422344.3	579539.1	4422343.2	579565.0	4422339.8
1991				0.2	0.3	0.6	1991			579526.7	4422314.6	579535.1	4422313.5	579560.3	4422310.2
1992				0.1	0.3	0.5	1992			579524.8	4422284.6	579532.9	4422283.5	579555.7	4422280.5
1993				0.1	0.3	0.5	1993			579525.3	4422254.3	579531.7	4422253.4	579552.9	4422250.6
1994				0.2	0.3	0.5	1994			579519.2	4422224.8	579529.3	4422223.5	579551.4	4422220.6
1995				0.2	0.3	0.5	1995			579512.0	4422195.5	579525.0	4422193.8	579546.7	4422190.9
1996				0.3	0.4	0.5	1996			579505.5	4422166.1	579521.0	4422164.1	579541.3	4422161.4
1997				0.3	0.4	0.5	1997			579500.5	4422136.5	579515.1	4422134.6	579537.7	4422131.6
1998				0.2	0.4	0.6	1998			579496.6	4422106.8	579508.9	4422105.1	579534.2	4422101.8
1999				0.2	0.4	0.6	1999			579492.8	4422077.0	579502.4	4422075.7	579530.1	4422072.1
2000				0.2	0.4	0.7	2000			579489.1	4422047.2	579498.9	4422045.9	579528.6	4422042.0
2001				0.2	0.4	0.6	2001			579485.3	4422017.5	579499.2	4422015.6	579525.0	4422012.2
2002				0.2	0.4	0.6	2002			579481.9	4421987.7	579495.3	4421985.9	579521.1	4421982.5
2003				0.3	0.4	0.6	2003			579475.7	4421958.2	579491.5	4421956.1	579518.9	4421952.5
2004				0.3	0.5	0.7	2004			579469.0	4421928.8	579487.3	4421926.4	579516.1	4421922.6
2005				0.4	0.5	0.7	2005			579461.1	4421899.6	579482.6	4421896.8	579513.9	4421892.7
2006				0.4			2006			579453.2	4421870.4	579477.7	4421867.2		
2007				0.4			2007			579447.0	4421841.0	579472.3	4421837.6		
2008				0.4			2008			579441.0	4421811.5	579466.4	4421808.1		
2009				0.4			2009			579435.9	4421781.9	579460.6	4421778.6		
2010				0.4	1.0	1.8	2010			579431.8	4421752.2	579455.7	4421749.0	579532.6	4421738.9
2011				0.4	0.9	1.6	2011			579427.7	4421722.5	579451.2	4421719.4	579522.9	4421709.9
2012				0.4	0.9	1.6	2012			579423.5	4421692.7	579445.3	4421689.9	579513.2	4421680.9
2013				0.3	0.8	1.5	2013			579420.6	4421662.9	579439.3	4421660.4	579505.2	4421651.7
2014				0.3	0.8	1.4	2014			579417.7	4421633.0	579434.7	4421630.8	579495.9	4421622.7

Table B-1. High-Water Shoreline Position Change - Sandy Hook to Barnegat Inlet, New Jersey

	High-Water Shoreline Position Change Rate (m/yr)						High-Water Shoreline Position (UTM Zone 18, NAD 1983)								
	1836/39 to			1855/75 to		1932/33 to		1836/39		1855/75		1932/33		1977	
Transect #	1855/75	1932/33	1977	1932/33	1977	1977	Transect #	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)
2015				0.3	0.7	1.3	2015			579412.1	4421603.5	579430.9	4421601.0	579486.8	4421593.6
2016				0.3	0.7	1.2	2016			579408.3	4421573.7	579426.2	4421571.4	579480.1	4421564.3
2017				0.4	0.7	1.2	2017			579400.1	4421544.5	579420.1	4421541.9	579471.7	4421535.1
2018				0.3	0.7	1.2	2018			579392.9	4421515.2	579410.7	4421512.9	579464.2	4421505.8
2019				0.3	0.7	1.2	2019			579388.3	4421485.6	579404.2	4421483.5	579458.4	4421476.3
2020				0.3	0.7	1.2	2020			579381.9	4421456.2	579400.6	4421453.7	579452.3	4421446.9
2021				0.4	0.7	1.1	2021			579377.0	4421426.5	579399.6	4421423.6	579446.0	4421417.5
2022				0.5	0.7	0.9	2022			579374.8	4421396.6	579401.1	4421393.1	579440.9	4421387.9
2023				0.5	0.6	0.7	2023			579372.5	4421366.6	579402.6	4421362.7	579435.0	4421358.4
2024				0.5	0.6	0.7	2024			579368.7	4421336.9	579399.5	4421332.8	579429.3	4421328.9
2025				0.6	0.6	0.7	2025			579362.1	4421307.5	579394.4	4421303.2	579424.1	4421299.3
2026				0.6	0.6	0.7	2026			579354.5	4421278.2	579389.0	4421273.7	579417.1	4421270.0
2027				0.6	0.6	0.6	2027			579348.3	4421248.8	579384.5	4421244.0	579410.7	4421240.6
2028				0.7	0.6	0.6	2028			579342.2	4421219.3	579380.0	4421214.3	579405.1	4421211.0
2029				0.7	0.6	0.6	2029			579336.6	4421189.8	579374.1	4421184.9	579399.3	4421181.5
2030				0.6	0.6	0.6	2030			579331.4	4421160.2	579367.1	4421155.5	579393.1	4421152.1
2031				0.7	0.6	0.5	2031			579325.8	4421130.7	579366.1	4421125.4	579389.3	4421122.3
2032				0.8	0.6	0.4	2032			579318.7	4421101.4	579366.2	4421095.1	579382.6	4421093.0
2033				0.9	0.7	0.3	2033			579312.5	4421071.9	579363.7	4421065.2	579378.5	4421063.2
2034				0.8	0.6	0.4	2034			579309.1	4421042.1	579355.1	4421036.1	579372.6	4421033.8
2035				0.7	0.6	0.5	2035			579304.8	4421012.4	579345.8	4421007.0	579367.1	4421004.2
2036				0.7	0.6	0.6	2036			579299.3	4420982.9	579337.2	4420977.9	579361.8	4420974.7
2037				0.7	0.6	0.6	2037			579293.7	4420953.4	579331.5	4420948.4	579357.6	4420945.0
2038				0.7	0.7	0.6	2038			579286.5	4420924.1	579328.1	4420918.6	579352.3	4420915.4
2039				0.7	0.7	0.5	2039			579280.5	4420894.6	579322.7	4420889.0	579346.4	4420885.9
2040				0.8	0.7	0.6	2040			579271.9	4420865.5	579316.0	4420859.7	579339.8	4420856.5
2041				0.8	0.7	0.6	2041			579264.5	4420836.2	579309.1	4420830.3	579335.8	4420826.8
2042				0.7	0.7	0.7	2042			579258.7	4420806.7	579301.0	4420801.1	579331.4	4420797.1
2043				0.7	0.7	0.8	2043			579253.9	4420777.1	579292.0	4420772.0	579326.5	4420767.5
2044				0.6	0.7	0.8	2044			579250.2	4420747.3	579284.6	4420742.8	579321.1	4420738.0
2045				0.5	0.7	0.9	2045			579246.3	4420717.5	579277.1	4420713.5	579316.7	4420708.3
2046				0.5	0.7	0.9	2046			579242.6	4420687.8	579273.5	4420683.7	579310.4	4420678.8
2047				0.6	0.7	0.8	2047			579238.7	4420658.0	579270.3	4420653.9	579305.6	4420649.2
2048				0.6	0.7	0.8	2048			579232.9	4420628.5	579265.8	4420624.2	579300.3	4420619.7
2049				0.6	0.6	0.7	2049			579229.2	4420598.8	579262.2	4420594.4	579293.6	4420590.3
2050				0.5	0.6	0.7	2050			579226.0	4420568.9	579256.9	4420564.8	579288.4	4420560.7
2051				0.5	0.6	0.8	2051			579222.9	4420539.1	579248.8	4420535.7	579284.5	4420531.0
2052				0.5	0.6	0.7	2052			579218.8	4420509.3	579248.2	4420505.5	579279.6	4420501.3
2053				0.6	0.6	0.6	2053			579214.7	4420479.6	579247.4	4420475.3	579274.4	4420471.8
2054				0.6	0.6	0.6	2054			579210.1	4420450.0	579243.8	4420445.5	579270.2	4420442.1
2055				0.6	0.6	0.6	2055			579204.7	4420420.4	579238.6	4420416.0	579265.6	4420412.4
2056				0.6	0.6	0.7	2056			579199.0	4420390.9	579231.7	4420386.6	579260.6	4420382.8
2057				0.5	0.6	0.8	2057			579193.3	4420361.4	579224.2	4420357.3	579256.7	4420353.1
2058				0.5	0.6	0.8	2058			579187.6	4420331.9	579217.3	4420328.0	579251.2	4420323.5
2059				0.5	0.6	0.8	2059			579183.7	4420302.2	579211.9	4420298.4	579246.8	4420293.8
2060				0.5	0.6	0.8	2060			579179.9	4420272.4	579207.2	4420268.8	579241.9	4420264.2
2061					0.7	0.8	2061			579172.5	4420243.1			579238.2	4420234.5
2062				0.6	0.7	0.7	2062			579165.5	4420213.8	579202.4	4420208.9	579233.2	4420204.9
2063				0.7	0.7	0.7	2063			579160.0	4420184.2	579200.1	4420179.0	579228.7	4420175.2
2064				0.7	0.7	0.7	2064			579153.8	4420154.8	579194.6	4420149.4	579224.1	4420145.5
2065				0.7	0.7	0.7	2065			579147.5	4420125.4	579189.0	4420119.9	579218.0	4420116.1
2066				0.7	0.7	0.8	2066			579141.7	4420095.9	579183.0	4420090.4	579215.6	4420086.1
2067				0.8	0.7	0.7	2067			579135.9	4420066.4	579180.7	4420060.5	579209.0	4420056.8

Table B-1. High-Water Shoreline Position Change - Sandy Hook to Barnegat Inlet, New Jersey

	High-Water Shoreline Position Change Rate (m/yr)						High-Water Shoreline Position (UTM Zone 18, NAD 1983)									
	1836/39 to			1855/75 to		1932/33 to	1836/39		1855/75		1932/33		1977			
Transect #	1855/75	1932/33	1977	1932/33	1977	1977	Transect #	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	
2068				0.8	0.7	0.6	2068			579130.0	4420036.9	579176.0	4420030.8	579203.2	4420027.3	
2069				0.8	0.7	0.6	2069			579124.1	4420007.4	579172.6	4420001.0	579197.2	4419997.8	
2070				0.9	0.7	0.5	2070			579121.7	4419977.5	579171.9	4419970.9	579192.4	4419968.2	
2071				0.8	0.7	0.6	2071			579117.2	4419947.8	579162.9	4419941.8	579187.3	4419938.6	
2072				0.7	0.6	0.6	2072			579115.8	4419917.7	579156.2	4419912.4	579180.8	4419909.2	
2073				0.6	0.6	0.5	2073			579118.9	4419887.1	579153.3	4419882.5	579174.6	4419879.7	
2074				0.5	0.4	0.4	2074			579123.7	4419856.2	579149.8	4419852.7	579167.1	4419850.5	
2075					0.4	0.4	2075			579125.1	4419825.7			579161.9	4419820.9	
2076				0.3	0.3	0.4	2076			579124.5	4419795.6	579138.5	4419793.7	579156.8	4419791.3	
2077				0.3	0.4	0.4	2077			579113.6	4419766.7	579132.5	4419764.2	579151.3	4419761.8	
2078				0.4	0.4	0.5	2078			579103.5	4419737.8	579124.1	4419735.1	579147.0	4419732.1	
2079				0.4	0.5	0.6	2079			579095.6	4419708.6	579118.5	4419705.6	579143.7	4419702.2	
2080				0.5	0.5	0.5	2080			579087.8	4419679.3	579115.1	4419675.7	579138.7	4419672.6	
2081				0.5	0.5	0.5	2081			579080.3	4419650.1	579110.2	4419646.1	579133.4	4419643.1	
2082				0.5	0.5	0.6	2082			579075.6	4419620.4	579103.0	4419616.8	579128.6	4419613.5	
2083				0.5	0.5	0.6	2083			579071.1	4419590.8	579096.9	4419587.4	579122.3	4419584.0	
2084				0.4	0.5	0.6	2084			579067.3	4419561.0	579091.8	4419557.8	579115.9	4419554.6	
2085				0.4	0.5	0.6	2085			579063.5	4419531.2	579086.5	4419528.2	579110.6	4419525.0	
2086				0.4	0.5	0.6	2086			579057.1	4419501.8	579081.1	4419498.7	579108.1	4419495.1	
2087				0.5	0.4	0.3	2087			579050.3	4419472.5	579077.2	4419468.9	579088.3	4419467.5	
2088				0.5	0.3	0.1	2088			579044.0	4419443.0	579072.3	4419439.3	579077.4	4419438.6	
2089				0.5	0.3	0.0	2089			579039.0	4419413.4	579066.7	4419409.8	579068.0	4419409.6	
2090				0.5	0.2	-0.1	2090			579034.0	4419383.8	579060.8	4419380.3	579058.7	4419380.6	
2091				0.4	0.2	-0.1	2091			579032.1	4419353.8	579055.5	4419350.8	579051.2	4419351.3	
2092				0.4	0.1	-0.2	2092			579030.6	4419323.8	579052.1	4419320.9	579044.6	4419321.9	
2093				0.3	0.1	-0.1	2093			579029.1	4419293.7	579047.4	4419291.3	579042.6	4419291.9	
2094				0.3	0.2	-0.0	2094			579023.6	4419264.2	579041.8	4419261.8	579041.4	4419261.8	
2095				0.3	0.2	0.1	2095			579017.1	4419234.8	579036.6	4419232.2	579038.7	4419231.9	
2096				0.4	0.2	0.1	2096			579009.9	4419205.5	579031.2	4419202.7	579034.4	4419202.2	
2097				0.4	0.3	0.1	2097			579002.5	4419176.2	579026.2	4419173.1	579032.0	4419172.3	
2098				0.4	0.3	0.2	2098			578996.6	4419146.7	579020.7	4419143.5	579030.0	4419142.3	
2099				0.4	0.4	0.3	2099			578991.2	4419117.2	579015.6	4419113.9	579028.3	4419112.3	
2100				0.4	0.4	0.3	2100			578986.2	4419087.5	579011.2	4419084.3	579024.9	4419082.5	
2101				0.5	0.4	0.3	2101			578981.5	4419057.9	579007.3	4419054.5	579020.9	4419052.7	
2102				0.5	0.4	0.3	2102			578976.8	4419028.3	579002.8	4419024.8	579016.0	4419023.1	
2103				0.4	0.4	0.3	2103			578973.6	4418998.4	578997.7	4418995.3	579009.7	4418993.7	
2104				0.4	0.3	0.3	2104			578970.4	4418968.6	578992.2	4418965.7	579003.8	4418964.2	
2105				0.3	0.3	0.2	2105			578967.8	4418938.7	578986.7	4418936.2	578996.7	4418934.9	
2106				0.3	0.2	0.1	2106			578965.5	4418908.7	578983.5	4418906.4	578989.4	4418905.6	
2107				0.3	0.2	0.1	2107			578963.0	4418878.8	578979.3	4418876.6	578985.4	4418875.8	
2108				0.3	0.2	0.1	2108			578959.4	4418849.0	578975.3	4418846.9	578979.2	4418846.4	
2109				0.3	0.2	0.0	2109			578956.2	4418819.2	578971.7	4418817.1	578973.2	4418816.9	
2110	-2.9	-1.0	-0.7	0.2	0.1	-0.0	2110	579056.2	4418775.7	578953.7	4418789.2	578966.9	4418787.5	578966.1	4418787.6	
2111	-2.8	-1.0	-0.7	0.2	0.1	-0.1	2111	579052.5	4418746.0	578951.2	4418759.3	578962.1	4418757.9	578959.9	4418758.2	
2112	-2.8	-1.0	-0.7	0.1	0.1	-0.0	2112	579050.5	4418716.0	578949.3	4418729.3	578956.8	4418728.3	578955.4	4418728.5	
2113	-2.7	-1.0	-0.7	0.1	0.0	-0.0	2113	579045.4	4418686.4	578948.0	4418699.2	578951.7	4418698.7	578950.0	4418698.9	
2114	-2.6	-1.0	-0.7	0.0	0.0	-0.0	2114	579037.9	4418657.1	578945.6	4418669.3	578946.7	4418669.1	578946.1	4418669.2	
2115	-2.5	-1.0	-0.7	-0.0	-0.0	0.0	2115	579032.7	4418627.5	578942.8	4418639.4	578940.8	4418639.6	578942.3	4418639.4	
2116	-2.6	-1.0	-0.7	-0.1	-0.0	0.0	2116	579032.4	4418597.3	578939.2	4418609.6	578936.2	4418610.0	578936.9	4418609.9	
2117	-2.6	-1.0	-0.7	-0.1	-0.0	0.0	2117	579027.3	4418567.7	578935.3	4418579.8	578932.3	4418580.2	578932.6	4418580.2	
2118	-2.6	-1.0	-0.7	-0.0	0.0	0.1	2118	579021.4	4418538.2	578928.8	4418550.4	578926.7	4418550.7	578930.6	4418550.2	
2119	-2.7	-1.0	-0.7	-0.0	0.0	0.1	2119	579016.8	4418508.6	578921.3	4418521.2	578921.0	4418521.2	578925.8	4418520.6	
2120	-2.9	-1.1	-0.7	0.1	0.1	0.1	2120	579017.2	4418478.3	578913.9	4418491.9	578916.6	4418491.5	578920.6	4418491.0	

Table B-1. High-Water Shoreline Position Change - Sandy Hook to Barnegat Inlet, New Jersey

High-Water Shoreline Position Change Rate (m/yr)							High-Water Shoreline Position (UTM Zone 18, NAD 1983)									
	1836/39 to		1855/75 to		1932/33 to		1836/39		1855/75		1932/33		1977			
Transect #	1855/75	1932/33	1977	1932/33	1977	1977	Transect #	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	
2121	-3.0	-1.1	-0.7	0.1	0.1	0.0	2121	579013.1	4418448.6	578907.5	4418462.5	578913.5	4418461.7	578915.4	4418461.4	
2122	-3.2	-1.1	-0.8	0.2	0.1	-0.1	2122	579015.0	4418418.1	578901.2	4418433.0	578910.9	4418431.8	578908.9	4418432.0	
2123	-3.2	-1.1	-0.8	0.2	0.1	-0.1	2123	579007.2	4418388.8	578894.9	4418403.6	578907.1	4418402.0	578901.8	4418402.7	
2124	-3.3	-1.1	-0.8	0.2	0.1	-0.1	2124	579004.1	4418359.0	578888.0	4418374.3	578902.1	4418372.4	578895.9	4418373.2	
2125	-3.5	-1.1	-0.8	0.3	0.1	-0.2	2125	579005.3	4418328.6	578880.5	4418345.0	578898.8	4418342.6	578891.3	4418343.6	
2126	-3.4	-1.1	-0.8	0.3	0.1	-0.2	2126	579001.1	4418298.8	578879.9	4418314.8	578897.3	4418312.5	578887.2	4418313.8	
2127	-3.2	-1.1	-0.8	0.2	0.0	-0.2	2127	578995.0	4418269.4	578880.6	4418284.5	578893.9	4418282.7	578884.2	4418284.0	
2128	-3.4	-1.2	-0.9	0.2	0.1	-0.2	2128	578998.0	4418238.7	578875.5	4418254.9	578889.0	4418253.1	578881.8	4418254.0	
2129	-3.4	-1.2	-0.8	0.2	0.1	-0.1	2129	578993.2	4418209.1	578871.1	4418225.2	578885.1	4418223.3	578880.4	4418224.0	
2130	-3.5	-1.2	-0.9	0.3	0.1	-0.1	2130	578993.0	4418178.9	578866.9	4418195.5	578881.4	4418193.6	578877.5	4418194.1	
2131	-3.7	-1.2	-0.9	0.3	0.1	-0.0	2131	578992.9	4418148.6	578862.7	4418165.8	578877.3	4418163.9	578875.8	4418164.1	
2132	-3.8	-1.3	-0.9	0.3	0.2	0.0	2132	578992.7	4418118.4	578858.1	4418136.1	578872.7	4418134.2	578873.6	4418134.1	
2133	-3.7	-1.3	-0.9	0.2	0.2	0.0	2133	578986.3	4418089.0	578853.9	4418106.4	578867.9	4418104.6	578869.8	4418104.3	
2134	-3.9	-1.3	-0.9	0.2	0.1	0.0	2134	578988.7	4418058.4	578851.0	4418076.5	578864.8	4418074.7	578865.0	4418074.7	
2135	-4.0	-1.4	-0.9	0.3	0.1	-0.1	2135	578989.3	4418028.1	578846.3	4418046.9	578862.5	4418044.8	578860.4	4418045.0	
2136	-4.2	-1.4	-1.0	0.3	0.2	-0.1	2136	578991.0	4417997.6	578840.3	4418017.4	578858.7	4418015.0	578856.0	4418015.4	
2137	-4.2	-1.4	-1.0	0.3	0.2	-0.0	2137	578986.5	4417967.8	578835.4	4417987.8	578853.8	4417985.4	578852.1	4417985.6	
2138	-4.1	-1.4	-0.9	0.3	0.3	0.4	2138	578980.5	4417938.5	578832.6	4417957.9	578848.4	4417955.7	578864.5	4417953.7	
2139	-4.2	-1.4	-0.9	0.3	0.3	0.3	2139	578980.3	4417908.2	578829.9	4417928.0	578848.2	4417925.6	578859.3	4417924.2	
2140	-4.2	-1.4	-0.9	0.3	0.2	0.1	2140	578977.8	4417878.3	578827.2	4417898.1	578846.3	4417895.6	578850.1	4417895.1	
2141	-4.3	-1.5	-1.0	0.3	0.2	-0.1	2141	578976.7	4417848.2	578824.7	4417868.2	578842.0	4417865.9	578839.4	4417866.3	
2142	-4.3	-1.5	-1.1	0.3	0.1	-0.1	2142	578975.5	4417818.1	578822.3	4417838.3	578836.4	4417836.4	578830.6	4417837.2	
2143	-4.1	-1.5	-1.0	0.2	0.1	-0.1	2143	578967.8	4417788.8	578821.9	4417808.0	578831.0	4417806.9	578828.4	4417807.2	
2144	-3.9	-1.5	-0.9	0.0	0.1	0.2	2144	578959.5	4417759.7	578821.9	4417777.8	578823.9	4417777.5	578831.5	4417776.5	
2145	-3.8	-1.5	-0.9	-0.1	0.1	0.4	2145	578955.2	4417730.0	578820.4	4417747.7	578817.5	4417748.1	578833.2	4417746.0	
2146	-3.8	-1.5	-0.9	-0.1	0.1	0.4	2146	578953.1	4417700.0	578818.8	4417717.7	578812.8	4417718.5	578832.1	4417715.9	
2147	-3.8	-1.5	-0.9	-0.1	0.1	0.5	2147	578950.9	4417670.0	578814.1	4417688.0	578808.0	4417688.8	578827.8	4417686.2	
2148	-3.9	-1.5	-0.9	-0.0	0.2	0.4	2148	578945.6	4417640.5	578807.3	4417658.7	578805.4	4417658.9	578824.3	4417656.4	
2149	-3.8	-1.5	-0.9	0.0	0.2	0.4	2149	578938.5	4417611.1	578802.1	4417629.1	578803.3	4417628.9	578821.3	4417626.6	
2150	-3.8	-1.4	-0.8	0.0	0.2	0.5	2150	578933.0	4417581.6	578798.8	4417599.3	578798.3	4417599.2	578818.9	4417596.6	
2151	-3.8	-1.5	-0.8	-0.0	0.2	0.5	2151	578929.8	4417551.8	578795.5	4417569.4	578794.4	4417569.6	578817.3	4417566.6	
2152	-3.8	-1.5	-0.8	-0.0	0.3	0.6	2152	578926.5	4417521.9	578792.2	4417539.6	578790.2	4417539.9	578817.1	4417536.3	
2153	-3.6		-0.8		0.2	0.6	2153	578916.6	4417493.0	578788.5	4417509.8			578812.4	4417506.7	
2154	-3.5	-1.4	-0.7	-0.0	0.3	0.6	2154	578910.4	4417463.5	578784.7	4417480.1	578782.4	4417480.4	578809.6	4417476.8	
2155	-3.4	-1.3	-0.7	-0.0	0.3	0.6	2155	578901.5	4417434.5	578781.6	4417450.2	578780.1	4417450.4	578807.8	4417446.8	
2156	-3.5	-1.4	-0.7	-0.0	0.3	0.7	2156	578902.9	4417404.0	578778.9	4417420.3	578777.4	4417420.5	578805.8	4417416.8	
2157	-3.6	-1.4	-0.8	-0.1	0.3	0.7	2157	578903.4	4417373.7	578776.3	4417390.4	578773.0	4417390.9	578801.2	4417387.1	
2158	-3.6	-1.4	-0.8	-0.1	0.2	0.6	2158	578903.0	4417343.5	578774.2	4417360.4	578769.5	4417361.1	578795.6	4417357.6	
2159	-3.5	-1.4	-0.8	-0.1	0.2	0.6	2159	578899.1	4417313.7	578772.8	4417330.4	578767.3	4417331.1	578791.1	4417328.0	
2160	-3.5	-1.4	-0.8	-0.1	0.2	0.5	2160	578896.0	4417283.9	578769.8	4417300.5	578765.0	4417301.1	578786.4	4417298.3	
2161	-3.5	-1.4	-0.8	-0.1	0.2	0.5	2161	578890.8	4417254.3	578765.6	4417270.8	578761.9	4417271.3	578781.3	4417268.7	
2162	-3.5	-1.4	-0.8	-0.0	0.2	0.4	2162	578884.7	4417224.9	578760.1	4417241.3	578758.6	4417241.5	578775.2	4417239.3	
2163	-3.6	-1.4	-0.8	0.0	0.2	0.3	2163	578883.0	4417194.8	578754.5	4417211.7	578756.5	4417211.5	578769.4	4417209.8	
2164	-3.7	-1.4	-0.9	0.1	0.1	0.2	2164	578883.3	4417164.5	578750.0	4417182.1	578754.0	4417181.5	578763.1	4417180.3	
2165	-3.8	-1.4	-0.9	0.1	0.1	0.1	2165	578879.9	4417134.7	578745.5	4417152.4	578752.8	4417151.4	578758.4	4417150.7	
2166	-3.6	-1.3	-0.9	0.1	0.1	0.0	2166	578875.1	4417105.1	578746.6	4417122.0	578751.0	4417121.4	578752.9	4417121.2	
2167	-3.5	-1.4	-0.9	-0.0	0.0	0.1	2167	578873.0	4417075.1	578748.9	4417091.4	578746.9	4417091.7	578750.7	4417091.2	
2168	-3.5	-1.4	-0.9	-0.0	0.0	0.1	2168	578869.7	4417045.3	578743.6	4417061.9	578742.0	4417062.1	578748.1	4417061.3	
2169	-3.6	-1.4	-0.9	-0.0	0.1	0.2	2169	578866.2	4417015.5	578739.4	4417032.2	578737.8	4417032.4	578744.9	4417031.5	
2170	-3.4	-1.5	-0.9	-0.2	-0.0	0.2	2170	578868.1	4416985.0	578745.6	4417001.1	578732.5	4417002.8	578741.9	4417001.6	
2171	-3.6	-1.5	-1.0	-0.3	-0.1	0.2	2171	578870.2	4416954.4	578743.5	4416971.1	578728.3	4416973.1	578737.6	4416971.9	
2172	-3.8	-1.6	-1.0	-0.2	-0.0	0.2	2172	578872.8	4416923.8	578737.6	4416941.6	578724.9	4416943.3	578734.1	4416942.1	
2173	-3.9	-1.7	-1.0	-0.2	-0.0	0.3	2173	578874.0	4416893.4	578734.5	4416911.8	578720.5	4416913.6	578731.6	4416912.2	

Table B-1. High-Water Shoreline Position Change - Sandy Hook to Barnegat Inlet, New Jersey

High-Water Shoreline Position Change Rate (m/yr)						High-Water Shoreline Position (UTM Zone 18, NAD 1983)								
	1836/39 to		1855/75 to		1932/33 to		1836/39		1855/75		1932/33		1977	
Transect #	1855/75	1932/33	1977	1932/33	1977	Transect #	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)
2174	-4.1	-1.8	-1.1	-0.3	0.3	2174	578882.2	4416862.1	578734.6	4416881.5	578716.2	4416883.9	578729.7	4416882.2
2175	-4.1	-1.8	-1.1	-0.4	0.4	2175	578881.3	4416831.9	578734.0	4416851.3	578711.6	4416854.3	578726.7	4416852.3
2176	-4.4	-1.9	-1.2	-0.4	0.3	2176	578887.1	4416800.9	578731.9	4416821.4	578709.4	4416824.3	578722.7	4416822.6
2177	-4.5	-2.0	-1.3	-0.4	0.3	2177	578890.2	4416770.3	578729.3	4416791.4	578707.0	4416794.4	578719.8	4416792.7
2178	-4.4	-1.9	-1.2	-0.3	0.3	2178	578882.8	4416741.0	578724.2	4416761.8	578704.7	4416764.4	578718.5	4416762.6
2179	-4.4	-1.9	-1.2	-0.3	0.3	2179	578877.3	4416711.4	578719.0	4416732.3	578701.9	4416734.5	578716.7	4416732.6
2180	-4.3	-1.9	-1.2	-0.4	0.4	2180	578871.0	4416682.0	578717.8	4416702.2	578697.5	4416704.8	578713.8	4416702.7
2181	-4.1	-1.8	-1.1	-0.4	0.4	2181	578864.7	4416652.6	578717.8	4416671.9	578692.9	4416675.2	578708.7	4416673.1
2182	-4.1	-1.9	-1.2	-0.5	0.3	2182	578864.0	4416622.4	578717.8	4416641.6	578689.5	4416645.4	578703.3	4416643.6
2183	-4.1	-1.9	-1.2	-0.6	0.3	2183	578863.6	4416592.2	578718.0	4416611.4	578685.4	4416615.7	578697.0	4416614.1
2184	-3.9	-1.9	-1.2	-0.7	0.3	2184	578857.9	4416562.7	578718.5	4416581.0	578680.5	4416586.0	578691.8	4416584.6
2185	-3.9	-2.0	-1.2	-0.8	0.3	2185	578858.7	4416532.3	578719.4	4416550.7	578674.8	4416556.5	578689.5	4416554.6
2186	-4.0	-2.0	-1.3	-0.8	0.3	2186	578861.8	4416501.7	578718.6	4416520.5	578673.1	4416526.5	578687.8	4416524.6
2187	-4.0		-1.3	-0.3	0.3	2187	578858.4	4416471.9	578716.2	4416490.6			578687.5	4416494.3
2188	-3.9	-1.9	-1.2	-0.7	0.3	2188	578854.2	4416442.1	578713.9	4416460.6	578673.7	4416465.9	578685.1	4416464.4
2189	-3.8	-2.0	-1.2	-0.8	0.4	2189	578849.5	4416412.5	578713.9	4416430.3	578667.5	4416436.5	578683.0	4416434.4
2190	-3.7	-2.0	-1.2	-0.9	0.4	2190	578845.4	4416382.8	578714.2	4416400.1	578662.0	4416406.9	578679.1	4416404.7
2191	-3.6	-2.0	-1.2	-1.0	0.4	2191	578841.3	4416353.1	578714.8	4416369.7	578657.8	4416377.2	578676.4	4416374.8
2192	-3.4	-2.0	-1.2	-1.1	0.4	2192	578837.3	4416323.3	578715.7	4416339.3	578654.4	4416347.4	578673.0	4416345.0
2193	-3.4	-2.0	-1.2	-1.1	0.4	2193	578833.6	4416293.6	578713.5	4416309.4	578651.4	4416317.5	578668.1	4416315.4
2194	-3.5	-2.0	-1.2	-1.1	0.3	2194	578832.5	4416263.4	578709.4	4416279.6	578647.5	4416287.8	578662.4	4416285.8
2195	-3.6	-2.1	-1.3	-1.1	0.3	2195	578833.0	4416233.1	578704.3	4416250.1	578642.4	4416258.2	578656.3	4416256.4
2196	-4.1	-2.2	-1.4	-1.1	0.3	2196	578845.7	4416201.2	578700.0	4416220.4	578638.6	4416228.5	578649.4	4416227.0
2197	-4.2	-2.3	-1.5	-1.1	0.3	2197	578848.8	4416170.5	578698.8	4416190.3	578635.2	4416198.6	578646.0	4416197.2
2198	-4.3	-2.3	-1.5	-1.1	0.2	2198	578850.4	4416140.0	578696.0	4416160.4	578632.1	4416168.8	578641.5	4416167.6
2199	-4.6	-2.4	-1.6	-1.1	0.2	2199	578855.4	4416109.1	578692.1	4416130.6	578630.5	4416138.8	578637.5	4416137.8
2200	-4.5	-2.4	-1.6	-1.1	0.1	2200	578850.4	4416079.5	578688.7	4416100.8	578627.9	4416108.8	578631.9	4416108.3
2201	-4.2	-2.3	-1.5	-1.1	0.1	2201	578837.8	4416050.9	578688.2	4416070.6	578624.3	4416079.0	578630.0	4416078.3
2202	-3.8	-2.2	-1.5	-1.2	0.1	2202	578824.7	4416022.4	578687.6	4416040.4	578620.3	4416049.3	578624.9	4416048.7
2203	-3.7	-2.1	-1.4	-1.2	0.1	2203	578814.9	4415993.4	578681.9	4416010.9	578615.4	4416019.7	578621.6	4416018.9
2204	-3.5	-2.0	-1.3	-1.1	0.2	2204	578799.7	4415965.2	578674.8	4415981.6	578610.5	4415990.1	578619.4	4415988.9
2205	-3.5	-2.0	-1.3	-1.1	0.3	2205	578796.8	4415935.3	578671.4	4415951.8	578606.3	4415960.4	578616.6	4415958.8
2206	-3.5	-2.0	-1.3	-1.1	0.4	2206	578793.0	4415905.5	578668.4	4415921.9	578603.1	4415930.5	578619.1	4415928.4
2207	-3.6	-2.0	-1.3	-1.1	0.3	2207	578790.2	4415875.6	578663.3	4415892.4	578600.0	4415900.7	578614.7	4415898.8
2208	-3.8	-2.1	-1.3	-1.1	0.3	2208	578792.4	4415845.1	578658.3	4415862.8	578597.2	4415870.8	578609.1	4415869.2
2209	-4.0	-2.2	-1.4	-1.1	0.4	2209	578797.1	4415814.2	578655.7	4415832.8	578593.2	4415841.1	578609.5	4415838.9
2210	-3.9	-2.2	-1.3	-1.1	0.5	2210	578792.0	4415784.6	578653.5	4415802.9	578588.4	4415811.4	578611.8	4415808.4
2211	-3.8		-1.3	-0.4	0.7	2211	578789.2	4415754.7	578654.2	4415772.5			578612.8	4415778.0
2212	-3.9	-2.3	-1.3	-1.3	0.7	2212	578794.2	4415723.8	578654.9	4415742.2	578582.5	4415751.7	578613.2	4415747.7
2213	-3.9	-2.3	-1.3	-1.3	0.8	2213	578795.3	4415693.4	578655.5	4415711.8	578580.2	4415721.7	578612.6	4415717.5
2214	-3.9	-2.4	-1.4	-1.4	0.7	2214	578796.6	4415663.0	578656.1	4415681.5	578577.8	4415691.8	578607.7	4415687.9
2215	-3.9	-2.3	-1.4	-1.4	0.6	2215	578793.8	4415633.1	578656.3	4415651.2	578575.8	4415661.8	578602.2	4415658.3
2216	-3.9	-2.4	-1.4	-1.4	0.6	2216	578793.5	4415602.9	578653.6	4415621.3	578573.3	4415631.9	578597.9	4415628.6
2217	-3.9	-2.3	-1.5	-1.4	0.5	2217	578790.8	4415573.0	578651.0	4415591.4	578573.3	4415601.6	578592.9	4415599.0
2218	-3.8	-2.3	-1.4	-1.4	0.4	2218	578783.5	4415543.7	578648.6	4415561.4	578570.0	4415571.8	578587.5	4415569.5
2219	-3.6	-2.2	-1.4	-1.4	0.4	2219	578773.5	4415514.7	578646.4	4415531.5	578565.3	4415542.1	578583.6	4415539.7
2220	-3.4	-2.2	-1.4	-1.5	0.5	2220	578766.7	4415485.4	578644.9	4415501.4	578560.2	4415512.6	578580.3	4415509.9
2221	-3.5	-2.3	-1.4	-1.5	0.5	2221	578767.4	4415455.0	578642.4	4415471.5	578555.9	4415482.9	578577.2	4415480.1
2222	-3.6	-2.3	-1.4	-1.5	0.5	2222	578768.4	4415424.6	578638.8	4415441.7	578554.5	4415452.8	578576.4	4415449.9
2223	-3.7	-2.3	-1.4	-1.4	0.5	2223	578765.7	4415394.7	578633.3	4415412.2	578553.8	4415422.6	578576.7	4415419.6
2224	-3.7	-2.2	-1.3	-1.3	0.5	2224	578759.1	4415365.3	578627.5	4415382.7	578553.1	4415392.5	578576.8	4415389.3
2225	-3.6	-2.2	-1.3	-1.2	0.5	2225	578752.6	4415335.9	578623.1	4415353.0	578552.1	4415362.3	578575.4	4415359.3
2226	-3.6	-2.1	-1.3	-1.2	0.6	2226	578748.3	4415306.3	578619.3	4415323.2	578550.8	4415332.2	578574.9	4415329.1

Table B-1. High-Water Shoreline Position Change - Sandy Hook to Barnegat Inlet, New Jersey

High-Water Shoreline Position Change Rate (m/yr)						High-Water Shoreline Position (UTM Zone 18, NAD 1983)											
1836/39 to			1855/75 to		1932/33 to	1836/39		1855/75		1932/33		1977					
Transect #	1855/75	1932/33	1977	1932/33	1977	1977	Transect #	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)
2227	-3.5	-2.0	-1.2	-1.1	-0.5	0.5	2227	578739.7	4415277.1	578615.6	4415293.5	578550.1	4415302.1	578570.0	4415299.5		
2228	-3.3	-1.9	-1.2	-1.0	-0.5	0.3	2228	578728.7	4415248.3	578610.6	4415263.9	578550.9	4415271.7	578565.1	4415269.8		
2229	-3.2	-1.8	-1.2	-1.0	-0.5	0.2	2229	578719.1	4415219.3	578605.6	4415234.3	578549.8	4415241.6	578559.8	4415240.3		
2230	-3.1	-1.8	-1.1	-0.9	-0.4	0.2	2230	578712.2	4415190.0	578600.8	4415204.6	578547.4	4415211.7	578557.2	4415210.4		
2231	-3.1	-1.8	-1.1	-0.9	-0.4	0.2	2231	578708.1	4415160.2	578597.7	4415174.8	578544.8	4415181.7	578553.5	4415180.6		
2232	-3.0	-1.7	-1.1	-0.9	-0.5	0.2	2232	578702.1	4415130.8	578595.7	4415144.8	578542.3	4415151.8	578549.7	4415150.8		
2233	-2.7	-1.6	-1.1	-0.9	-0.5	0.1	2233	578691.3	4415101.9	578593.7	4415114.8	578540.7	4415121.8	578545.2	4415121.2		
2234	-2.3	-1.4	-1.0	-0.9	-0.5	0.0	2234	578674.7	4415073.9	578591.2	4415084.9	578540.9	4415091.5	578542.3	4415091.3		
2235	-2.2	-1.3	-1.0	-0.8	-0.5	-0.1	2235	578666.4	4415044.7	578588.5	4415055.0	578541.7	4415061.1	578537.1	4415061.7		
2236	-2.5	-1.4	-1.0	-0.7	-0.5	-0.2	2236	578673.2	4415013.6	578584.2	4415025.3	578542.0	4415030.8	578534.7	4415031.8		
2237	-2.9	-1.5	-1.1	-0.6	-0.5	-0.2	2237	578682.9	4414982.0	578579.0	4414995.7	578542.3	4415000.5	578531.9	4415001.9		
2238	-3.2	-1.6	-1.2	-0.6	-0.5	-0.3	2238	578690.6	4414950.7	578575.0	4414966.0	578540.8	4414970.5	578527.8	4414972.2		
2239	-3.5	-1.7	-1.3	-0.6	-0.5	-0.3	2239	578698.3	4414919.5	578572.4	4414936.0	578539.2	4414940.4	578525.2	4414942.3		
2240	-4.0	-1.9	-1.4	-0.6	-0.4	-0.3	2240	578713.6	4414887.2	578569.6	4414906.1	578536.4	4414910.5	578524.9	4414912.0		
2241	-4.5	-2.1	-1.5	-0.6	-0.4	-0.2	2241	578726.1	4414855.3	578565.5	4414876.4	578533.6	4414880.6	578526.4	4414881.6		
2242	-4.5	-2.1	-1.4	-0.5	-0.3	-0.1	2242	578723.5	4414825.4	578561.4	4414846.7	578530.6	4414850.8	578528.6	4414851.0		
2243	-4.5	-2.0	-1.4	-0.5	-0.3	0.0	2243	578717.0	4414796.0	578557.7	4414816.9	578528.0	4414820.9	578529.3	4414820.7		
2244	-4.4	-2.0	-1.3	-0.5	-0.2	0.1	2244	578712.7	4414766.3	578554.2	4414787.1	578526.6	4414790.8	578531.2	4414790.2		
2245	-4.4	-2.0	-1.3	-0.5	-0.2	0.2	2245	578706.1	4414736.9	578550.5	4414757.4	578523.0	4414761.0	578532.0	4414759.8		
2246	-4.6	-2.1	-1.3	-0.5	-0.2	0.3	2246	578710.3	4414706.1	578546.2	4414727.7	578519.3	4414731.2	578531.2	4414729.7		
2247	-4.8	-2.1	-1.3	-0.5	-0.1	0.4	2247	578714.1	4414675.3	578541.9	4414698.0	578515.8	4414701.4	578531.5	4414699.4		
2248	-5.1	-2.2	-1.4	-0.5	-0.1	0.5	2248	578718.8	4414644.4	578538.3	4414668.2	578511.4	4414671.7	578533.5	4414668.8		
2249	-5.1	-2.2	-1.4	-0.5	-0.0	0.5	2249	578716.8	4414614.4	578535.8	4414638.3	578510.0	4414641.7	578532.8	4414638.7		
2250	-5.0	-2.2	-1.3	-0.4	-0.0	0.5	2250	578711.0	4414585.0	578532.7	4414608.4	578509.4	4414611.5	578530.2	4414608.7		
2251	-5.0	-2.2	-1.3	-0.4	-0.0	0.5	2251	578708.0	4414555.1	578528.6	4414578.7	578506.6	4414581.6	578526.8	4414578.9		
2252	-5.0	-2.2	-1.3	-0.4	-0.0	0.4	2252	578702.7	4414525.5	578524.5	4414549.0	578502.0	4414551.9	578520.8	4414549.5		
2253	-4.9	-2.1	-1.3	-0.4	-0.0	0.5	2253	578696.7	4414496.0	578521.2	4414519.2	578498.5	4414522.2	578519.9	4414519.3		
2254	-4.8	-2.1	-1.2	-0.4	0.0	0.5	2254	578688.0	4414466.9	578518.0	4414489.3	578496.1	4414492.2	578518.5	4414489.2		
2255	-4.6	-2.0	-1.2	-0.3	0.1	0.5	2255	578677.9	4414438.0	578513.5	4414459.6	578494.7	4414462.1	578518.2	4414459.0		
2256	-4.4	-1.8	-1.1	-0.3	0.1	0.5	2256	578666.2	4414409.3	578509.0	4414430.0	578494.4	4414431.9	578517.1	4414428.9		
2257	-4.3	-1.8	-1.1	-0.2	0.1	0.4	2257	578659.0	4414380.0	578505.7	4414400.2	578494.1	4414401.7	578512.5	4414399.3		
2258	-4.3	-1.8	-1.1	-0.2	0.0	0.3	2258	578656.6	4414350.0	578502.6	4414370.3	578490.3	4414371.9	578503.8	4414370.1		
2259	-4.4	-1.8	-1.2	-0.3	-0.0	0.3	2259	578654.7	4414320.0	578499.0	4414340.5	578483.2	4414342.6	578496.2	4414340.9		
2260	-4.6	-2.0	-1.3	-0.3	-0.1	0.2	2260	578660.4	4414289.0	578495.5	4414310.7	578478.3	4414313.0	578488.3	4414311.7		
2261	-4.7	-2.0	-1.3	-0.3	-0.1	0.2	2261	578661.5	4414258.6	578493.1	4414280.8	578475.9	4414283.0	578483.2	4414282.1		
2262	-5.0	-2.1	-1.4	-0.3	-0.2	0.1	2262	578668.3	4414227.5	578490.8	4414250.8	578472.7	4414253.2	578475.7	4414252.8		
2263	-5.3	-2.2	-1.5	-0.3	-0.2	0.0	2263	578677.1	4414196.0	578487.6	4414221.0	578468.6	4414223.5	578469.4	4414223.4		
2264	-5.6	-2.3	-1.6	-0.3	-0.1	0.1	2264	578681.7	4414165.2	578481.9	4414191.5	578464.9	4414193.7	578469.1	4414193.2		
2265	-5.9		-1.6		-0.1	0.2	2265	578684.2	4414134.6	578475.4	4414162.1			578467.8	4414163.1		
2266	-5.9	-2.4	-1.6	-0.3	-0.1	0.2	2266	578683.0	4414104.5	578473.5	4414132.1	578456.1	4414134.4	578465.2	4414133.2		
2267	-6.0	-2.4	-1.6	-0.3	-0.0	0.2	2267	578681.7	4414074.4	578469.4	4414102.3	578454.6	4414104.3	578465.2	4414102.9		
2268	-6.0	-2.4	-1.6	-0.2	0.0	0.3	2268	578679.3	4414044.5	578463.6	4414072.9	578452.8	4414074.3	578466.5	4414072.5		
2269	-6.1	-2.5	-1.5	-0.2	0.1	0.5	2269	578676.9	4414014.5	578461.0	4414042.9	578448.0	4414044.6	578467.7	4414042.1		
2270	-6.1	-2.5	-1.5	-0.3	0.1	0.7	2270	578676.5	4413984.3	578458.9	4414013.0	576442.1	4414015.2	578471.0	4414011.4		
2271	-6.2	-2.6	-1.5	-0.4	0.2	0.9	2271	578677.8	4413953.9	578457.4	4413982.9	578436.6	4413985.6	578475.0	4413980.6		
2272	-6.1	-2.6	-1.4	-0.4	0.2	1.1	2272	578673.8	4413924.2	578456.0	4413952.8	578431.9	4413956.0	578478.2	4413949.9		
2273	-6.0	-2.6	-1.4	-0.5	0.2	1.2	2273	578668.9	4413894.5	578454.5	4413922.8	578426.6	4413926.4	578477.6	4413919.7		
2274	-5.9	-2.6	-1.4	-0.5	0.2	1.2	2274	578661.8	4413865.2	578453.2	4413892.7	578423.4	4413896.6	578475.3	4413889.8		
2275	-5.6	-2.4	-1.3	-0.5	0.2	1.1	2275	578648.4	4413836.7	578450.4	4413862.8	578420.8	4413866.7	578470.4	4413860.1		
2276	-5.6	-2.4	-1.3	-0.5	0.2	1.0	2276	578643.9	4413807.0	578445.6	4413833.2	578417.6	4413836.8	578463.0	4413830.9		
2277	-5.7	-2.5	-1.4	-0.4	0.2	1.0	2277	578643.2	4413776.9	578439.8	4413803.7	578414.4	4413807.0	578456.1	4413801.5		
2278	-5.8	-2.5	-1.4	-0.4	0.1	0.8	2278	578642.5	4413746.7	578434.6	4413774.1	578412.2	4413777.0	578449.1	4413772.2		
2279	-5.9	-2.5	-1.5	-0.4	0.1	0.7	2279	578641.8	4413716.6	578431.7	4413744.2	578411.1	4413746.9	578442.8	4413742.8		

Table B-1. High-Water Shoreline Position Change - Sandy Hook to Barnegat Inlet, New Jersey

	High-Water Shoreline Position Change Rate (m/yr)						High-Water Shoreline Position (UTM Zone 18, NAD 1983)							
	1836/39 to			1855/75 to		1932/33 to	1836/39		1855/75		1932/33		1977	
Transect #	1855/75	1932/33	1977	1932/33	1977	1977	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)
2280	-5.9	-2.5	-1.5	-0.3	0.1	0.6	578640.7	4413686.4	578429.9	4413714.2	578411.1	4413716.7	578436.0	4413713.4
2281	-5.9	-2.4	-1.6	-0.2	-0.0	0.3	578634.1	4413657.0	578422.4	4413684.9	578410.1	4413686.5	578421.3	4413685.1
2282	-5.8	-2.4	-1.6	-0.2	-0.0	0.2	578626.8	4413627.7	578419.3	4413655.1	578407.2	4413656.7	578415.1	4413655.6
2283	-5.8		-1.5		-0.0	0.3	578621.6	4413598.2	578415.9	4413625.3			578412.1	4413625.8
2284	-6.0	-2.4	-1.6	-0.2	0.0	0.3	578622.4	4413567.8	578409.1	4413595.9	578399.4	4413597.2	578410.8	4413595.7
2285	-6.2	-2.4	-1.6	-0.1	0.1	0.3	578624.1	4413537.3	578402.8	4413566.5	578396.5	4413567.3	578408.9	4413565.7
2286	-6.4	-2.5	-1.6	-0.1	0.1	0.3	578624.2	4413507.1	578397.2	4413536.9	578391.4	4413537.7	578403.8	4413536.1
2287	-6.4	-2.5	-1.6	-0.1	0.1	0.3	578622.1	4413477.1	578392.6	4413507.3	578386.4	4413508.1	578397.5	4413506.6
2288	-6.5	-2.5	-1.7	-0.1	0.0	0.2	578619.3	4413447.2	578389.0	4413477.5	578385.2	4413478.0	578392.8	4413477.0
2289	-6.3	-2.5	-1.6	-0.1	0.0	0.1	578612.7	4413417.8	578386.7	4413447.5	578384.1	4413447.9	578388.0	4413447.4
2290	-6.2	-2.4	-1.6	-0.0	0.0	0.1	578604.0	4413388.7	578384.3	4413417.6	578382.1	4413417.9	578384.4	4413417.6
2291	-6.1	-2.3	-1.6	-0.0	0.0	0.0	578597.0	4413359.3	578381.1	4413387.8	578379.9	4413387.9	578381.2	4413387.8
2292	-6.0	-2.3	-1.6	-0.1	-0.1	-0.0	578596.4	4413329.2	578383.2	4413357.2	578378.4	4413357.9	578377.4	4413358.0
2293	-5.8	-2.3	-1.6	-0.2	-0.1	-0.1	578595.3	4413299.0	578387.3	4413326.4	578377.7	4413327.7	578375.5	4413328.0
2294	-5.7	-2.3	-1.6	-0.2	-0.1	0.0	578588.1	4413269.7	578384.8	4413296.5	578373.3	4413298.0	578375.2	4413297.8
2295	-5.6	-2.2	-1.5	-0.2	-0.1	0.1	578580.0	4413240.5	578380.9	4413266.8	578372.1	4413267.9	578374.6	4413267.6
2296	-5.5	-2.1	-1.4	-0.0	-0.0	0.0	578570.9	4413211.5	578374.3	4413237.4	578372.9	4413237.6	578373.5	4413237.5
2297	-5.3	-2.0	-1.4	0.0	0.0	0.0	578555.4	4413183.3	578368.1	4413207.9	578368.2	4413207.9	578370.0	4413207.7
2298	-5.6	-2.1	-1.4	0.0	0.0	0.0	578563.4	4413152.0	578363.4	4413178.3	578364.8	4413178.1	578366.4	4413177.9
2299	-6.0	-2.2	-1.5	0.1	0.0	-0.0	578573.8	4413120.3	578360.4	4413148.4	578365.4	4413147.8	578364.0	4413147.9
2300	-6.5	-2.4	-1.7	0.1	0.0	-0.1	578593.1	4413087.5	578360.2	4413118.2	578366.1	4413117.4	578362.4	4413117.9
2301	-6.8	-2.5	-1.8	0.2	0.1	-0.1	578599.6	4413056.4	578356.1	4413088.5	578365.1	4413087.3	578360.6	4413087.9
2302	-6.8	-2.5	-1.7	0.2	0.1	-0.1	578592.8	4413027.0	578350.5	4413058.9	578363.3	4413057.3	578359.3	4413057.8
2303	-6.8	-2.4	-1.7	0.3	0.1	-0.2	578586.5	4412997.6	578343.4	4413029.6	578362.7	4413027.1	578356.2	4413027.9
2304	-6.7	-2.3	-1.7	0.4	0.1	-0.2	578578.6	4412968.4	578340.4	4412999.8	578362.9	4412996.8	578353.5	4412998.0
2305	-6.6	-2.3	-1.7	0.4	0.1	-0.2	578575.8	4412938.5	578340.0	4412969.6	578360.0	4412966.9	578350.5	4412968.2
2306	-6.6	-2.3	-1.7	0.4	0.1	-0.3	578573.7	4412908.5	578337.4	4412939.6	578358.0	4412936.9	578345.6	4412938.6
2307	-6.7		-1.7		0.1	-0.4	578569.9	4412878.8	578332.5	4412910.0			578341.5	4412908.8
2308	-6.7	-2.3	-1.7	0.4	0.1	-0.4	578569.2	4412848.6	578328.6	4412880.3	578353.1	4412877.1	578334.5	4412879.5
2309	-6.8	-2.4	-1.7	0.4	0.1	-0.4	578568.8	4412818.4	578325.3	4412850.5	578349.2	4412847.3	578330.3	4412849.8
2310	-6.6		-1.7		0.0	-0.6	578559.6	4412789.3	578322.5	4412820.6			578323.5	4412820.4
2311	-6.5	-2.2	-1.7	0.5	0.0	-0.6	578553.7	4412759.9	578320.3	4412790.6	578346.7	4412787.1	578320.3	4412790.6
2312	-6.3	-2.2	-1.7	0.4	-0.0	-0.6	578545.8	4412730.6	578320.4	4412760.3	578343.7	4412757.3	578318.4	4412760.6
2313	-6.1		-1.6		-0.1	-0.6	578540.6	4412701.1	578323.3	4412729.7			578316.7	4412730.5
2314	-5.9	-2.1	-1.6	0.2	-0.1	-0.5	578535.8	4412671.4	578324.9	4412699.2	578338.8	4412697.4	578315.6	4412700.4
2315	-5.9	-2.1	-1.6	0.2	-0.1	-0.5	578533.2	4412641.5	578324.0	4412669.1	578336.7	4412667.4	578314.6	4412670.3
2316	-5.9	-2.1	-1.6	0.2	-0.1	-0.4	578534.2	4412611.1	578324.7	4412638.7	578334.6	4412637.4	578316.1	4412639.8
2317	-5.8	-2.2	-1.6	0.1	-0.1	-0.3	578533.9	4412580.9	578326.7	4412608.2	578330.4	4412607.7	578318.5	4412609.3
2318	-5.8	-2.3	-1.6	-0.1	-0.1	-0.0	578536.0	4412550.4	578328.3	4412577.7	578322.4	4412578.5	578321.3	4412578.7
2319	-6.0	-2.4	-1.6	-0.2	-0.0	0.2	578539.2	4412519.7	578327.0	4412547.6	578317.6	4412548.9	578325.8	4412547.8
2320	-6.1	-2.5	-1.6	-0.2	0.1	0.3	578543.5	4412488.9	578324.4	4412517.7	578315.4	4412518.9	578329.1	4412517.1
2321	-6.2	-2.5	-1.6	-0.2	0.1	0.4	578543.4	4412458.6	578323.0	4412487.6	578314.1	4412488.8	578329.6	4412486.8
2322	-6.2	-2.5	-1.6	-0.1	0.1	0.4	578542.1	4412428.5	578320.9	4412457.7	578312.7	4412458.7	578329.1	4412456.6
2323	-6.2	-2.5	-1.5	-0.1	0.1	0.5	578539.3	4412398.6	578317.5	4412427.9	578310.0	4412428.8	578329.6	4412426.3
2324	-6.3	-2.5	-1.5	-0.1	0.2	0.6	578534.9	4412369.0	578311.8	4412398.3	578305.1	4412399.2	578331.2	4412395.8
2325	-6.3	-2.5	-1.5	-0.1	0.3	0.7	578529.7	4412339.4	578306.7	4412368.8	578301.4	4412369.5	578331.8	4412365.4
2326	-6.2	-2.5	-1.5	-0.1	0.2	0.7	578524.9	4412309.8	578304.3	4412338.8	578296.8	4412339.8	578326.8	4412335.9
2327	-6.1	-2.4	-1.5	-0.1	0.2	0.7	578519.7	4412280.2	578301.0	4412309.0	578293.4	4412310.0	578321.7	4412306.3
2328	-6.1	-2.4	-1.5	-0.2	0.2	0.6	578515.7	4412250.5	578297.1	4412279.2	578288.7	4412280.4	578313.3	4412277.1
2329	-6.2	-2.5	-1.5	-0.2	0.1	0.5	578515.0	4412220.3	578294.5	4412249.3	578285.3	4412250.5	578307.6	4412247.6
2330	-6.0	-2.4	-1.5	-0.2	0.1	0.4	578507.9	4412191.0	578292.9	4412219.3	578281.8	4412220.7	578300.8	4412218.2
2331	-6.0	-2.4	-1.5	-0.2	0.1	0.4	578505.5	4412161.0	578290.6	4412189.3	578278.5	4412190.9	578296.5	4412188.5
2332	-6.0	-2.4	-1.5	-0.2	0.1	0.4	578502.7	4412131.1	578287.8	4412159.4	578275.4	4412161.1	578294.1	4412158.6

Table B-1. High-Water Shoreline Position Change - Sandy Hook to Barnegat Inlet, New Jersey

	High-Water Shoreline Position Change Rate (m/yr)						High-Water Shoreline Position (UTM Zone 18, NAD 1983)							
	1836/39 to			1855/75 to		1932/33 to	1836/39		1855/75		1932/33		1977	
Transect #	1855/75	1932/33	1977	1932/33	1977	1977	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)
2333	-5.9	-2.4	-1.5	-0.2	0.0	0.4	578495.3	4412101.9	578286.4	4412129.4	578273.2	4412131.1	578289.9	4412128.9
2334	-5.7	-2.3	-1.5	-0.3	0.0	0.4	578489.6	4412072.3	578286.3	4412099.1	578271.9	4412101.0	578288.0	4412098.9
2335	-5.7	-2.4	-1.5	-0.3	0.0	0.4	578489.8	4412042.1	578286.4	4412068.8	578270.5	4412070.9	578287.9	4412068.6
2336	-5.7	-2.4	-1.5	-0.3	0.0	0.5	578488.9	4412011.9	578286.3	4412038.6	578268.8	4412040.9	578289.5	4412038.2
2337	-5.7	-2.4	-1.4	-0.3	0.1	0.6	578486.0	4411982.0	578282.5	4412008.8	578264.3	4412011.2	578288.6	4412008.0
2338	-5.8	-2.4	-1.5	-0.3	0.1	0.7	578486.3	4411951.8	578278.7	4411979.1	578259.2	4411981.7	578287.5	4411977.9
2339	-5.9	-2.5	-1.5	-0.4	0.1	0.6	578485.5	4411921.6	578276.3	4411949.1	578255.0	4411951.9	578283.1	4411948.2
2340	-5.8	-2.5	-1.5	-0.4	-0.0	0.5	578482.8	4411891.7	578276.9	4411918.8	578253.4	4411921.9	578276.2	4411918.9
2341	-5.6	-2.5	-1.5	-0.5	-0.1	0.4	578480.5	4411861.7	578279.9	4411888.1	578251.9	4411891.8	578269.5	4411889.5
2342	-5.5	-2.5	-1.6	-0.6	-0.2	0.3	578479.1	4411831.7	578282.4	4411857.6	578249.9	4411861.8	578263.3	4411860.1
2343	-5.4	-2.4	-1.6	-0.5	-0.3	0.1	578476.9	4411801.7	578282.8	4411827.2	578252.0	4411831.3	578256.8	4411830.7
2344	-5.3	-2.4	-1.6	-0.6	-0.3	-0.0	578472.2	4411772.0	578282.3	4411797.0	578250.2	4411801.3	578249.7	4411801.3
2345	-5.3		-1.7		-0.4	0.0	578471.2	4411741.9	578280.6	4411767.0			578244.9	4411771.7
2346	-5.5	-2.5	-1.7	-0.6	-0.3	0.1	578473.4	4411711.4	578277.2	4411737.2	578241.7	4411741.9	578245.9	4411741.3
2347	-5.7	-2.5	-1.7	-0.5	-0.3	0.1	578475.8	4411680.8	578271.4	4411707.7	578241.3	4411711.7	578246.5	4411711.0
2348	-5.9	-2.6	-1.7	-0.5	-0.2	0.1	578479.8	4411650.0	578269.6	4411677.7	578240.8	4411681.5	578245.0	4411680.9
2349	-5.7	-2.5	-1.7	-0.5	-0.2	0.1	578471.3	4411620.9	578267.7	4411647.7	578239.8	4411651.4	578243.9	4411650.8
2350	-5.7	-2.5	-1.6	-0.4	-0.2	0.1	578467.9	4411591.1	578263.1	4411618.0	578237.9	4411621.3	578243.4	4411620.6
2351	-5.7	-2.4	-1.6	-0.4	-0.1	0.3	578461.4	4411561.7	578258.5	4411588.4	578234.0	4411591.6	578244.7	4411590.2
2352	-5.6	-2.4	-1.3	-0.4	0.2	1.0	578453.3	4411532.5	578255.2	4411558.6	578229.7	4411561.9	578274.6	4411556.0
2353	-5.4	-2.4	-1.3	-0.5	0.2	1.1	578446.3	4411503.1	578252.6	4411528.6	578224.8	4411532.3	578271.6	4411526.1
2354	-5.5	-2.5	-1.3	-0.6	0.2	1.2	578445.4	4411473.0	578250.1	4411498.7	578215.8	4411503.2	578269.5	4411496.2
2355	-5.5	-2.5	-1.3	-0.6	0.2	1.3	578441.9	4411443.2	578247.6	4411468.8	578211.6	4411473.5	578266.8	4411466.2
2356	-5.3	-2.4	-1.3	-0.6	0.2	1.3	578435.9	4411413.7	578245.3	4411438.8	578209.4	4411443.5	578265.0	4411436.2
2357	-5.2	-2.4	-1.2	-0.6	0.2	1.2	578429.3	4411384.3	578243.4	4411408.8	578208.7	4411413.4	578259.7	4411406.7
2358	-5.1	-2.3	-1.2	-0.6	0.2	1.2	578423.4	4411354.8	578242.0	4411378.7	578206.5	4411383.4	578256.9	4411376.8
2359	-5.1	-2.4	-1.3	-0.6	0.1	1.1	578426.2	4411324.2	578243.1	4411348.3	578206.3	4411353.2	578254.8	4411346.8
2360	-5.2	-2.4	-1.3	-0.7	0.1	1.0	578430.8	4411293.4	578244.1	4411317.9	578205.7	4411323.0	578251.2	4411317.0
2361	-5.3	-2.4	-1.3	-0.7	0.1	1.0	578430.1	4411263.2	578242.0	4411288.0	578204.5	4411292.9	578247.9	4411287.2
2362	-5.6	-2.5	-1.4	-0.6	0.1	1.0	578437.8	4411231.9	578238.8	4411258.1	578203.6	4411262.7	578247.9	4411256.9
2363	-5.9	-2.6	-1.5	-0.6	0.1	0.9	578446.0	4411200.6	578234.2	4411228.5	578202.7	4411232.6	578242.5	4411227.4
2364	-6.2	-2.7	-1.5	-0.5	0.1	0.9	578451.4	4411169.6	578229.7	4411198.8	578200.2	4411202.7	578241.3	4411197.3
2365	-6.3	-2.7	-1.5	-0.5	0.1	0.9	578448.5	4411139.7	578225.3	4411169.1	578197.2	4411172.8	578238.0	4411167.5
2366	-6.2	-2.7	-1.5	-0.4	0.1	0.9	578444.8	4411110.0	578222.3	4411139.3	578196.8	4411142.6	578234.9	4411137.6
2367	-6.3	-2.7	-1.6	-0.4	0.1	0.8	578445.7	4411079.6	578219.7	4411109.3	578197.5	4411112.3	578232.5	4411107.6
2368	-6.3	-2.7	-1.6	-0.4	0.1	0.8	578445.0	4411049.4	578219.1	4411079.2	578195.1	4411082.3	578230.2	4411077.7
2369	-6.1	-2.6	-1.5	-0.5	0.1	0.8	578436.4	4411020.3	578218.7	4411049.0	578191.1	4411052.6	578227.3	4411047.8
2370	-5.9	-2.6	-1.5	-0.5	0.1	0.8	578427.9	4410991.2	578218.2	4411018.8	578188.9	4411022.6	578224.1	4411018.0
2371	-5.8	-2.5	-1.5	-0.5	0.1	0.8	578424.8	4410961.3	578217.9	4410988.5	578189.9	4410992.2	578223.0	4410987.9
2372	-5.7	-2.5	-1.5	-0.5	0.1	0.8	578419.7	4410931.7	578215.6	4410958.6	578188.1	4410962.2	578222.0	4410957.7
2373	-5.7	-2.5	-1.4	-0.5	0.1	0.8	578413.4	4410902.3	578211.9	4410928.8	578184.6	4410932.4	578218.1	4410928.0
2374	-5.6	-2.4	-1.4	-0.5	0.1	0.8	578408.0	4410872.7	578207.8	4410899.1	578180.8	4410902.7	578213.8	4410898.3
2375	-5.5	-2.4	-1.4	-0.5	0.1	0.8	578401.3	4410843.4	578203.7	4410869.4	578177.3	4410872.9	578211.5	4410868.4
2376	-5.5	-2.4	-1.4	-0.4	0.1	0.8	578394.2	4410814.0	578199.8	4410839.6	578174.6	4410842.9	578208.0	4410838.6
2377	-5.5	-2.4	-1.4	-0.4	0.1	0.7	578391.1	4410784.2	578196.2	4410809.8	578172.2	4410813.0	578204.0	4410808.8
2378	-5.5	-2.3	-1.4	-0.4	0.1	0.7	578388.9	4410754.2	578193.8	4410779.9	578170.7	4410782.9	578199.7	4410779.1
2379	-5.6	-2.4	-1.4	-0.4	0.1	0.6	578391.2	4410723.7	578191.1	4410750.0	578170.1	4410752.8	578196.7	4410749.3
2380	-5.8	-2.4	-1.5	-0.4	0.1	0.6	578394.6	4410693.0	578188.3	4410720.1	578167.4	4410722.9	578194.8	4410719.3
2381	-5.9	-2.5	-1.5	-0.4	0.1	0.6	578394.7	4410662.7	578185.0	4410690.3	578165.0	4410692.9	578190.3	4410689.6
2382	-6.0	-2.5	-1.5	-0.3	0.1	0.5	578394.6	4410632.4	578180.9	4410660.6	578162.2	4410663.0	578185.9	4410659.9
2383	-6.1	-2.5	-1.5	-0.3	0.1	0.5	578392.6	4410602.4	578176.6	4410630.9	578159.1	4410633.2	578181.9	4410630.2
2384	-6.1	-2.5	-1.5	-0.2	0.1	0.5	578388.1	4410572.8	578170.9	4410601.4	578157.9	4410603.1	578178.4	4410600.4
2385	-6.2	-2.5	-1.5	-0.1	0.1	0.4	578386.2	4410542.8	578164.9	4410571.9	578158.2	4410572.8	578176.3	4410570.4

Table B-1. High-Water Shoreline Position Change - Sandy Hook to Barnegat Inlet, New Jersey

High-Water Shoreline Position Change Rate (m/yr)						High-Water Shoreline Position (UTM Zone 18, NAD 1983)									
1836/39 to			1855/75 to		1932/33 to	1836/39		1855/75		1932/33		1977			
Transect #	1855/75	1932/33	1977	1932/33	1977	1977	Transect #	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)
	-6.2	-2.4	-1.5	-0.0	0.2	0.4	2386	578379.2	4410513.4	578159.0	4410542.4	578156.6	4410542.7	578173.7	4410540.5
	-6.3	-2.4	-1.5	0.0	0.2	0.4	2387	578379.7	4410483.1	578154.2	4410512.8	578154.5	4410512.8	578169.7	4410510.7
	-6.4	-2.4	-1.6	-0.0	0.1	0.3	2388	578379.8	4410452.8	578153.2	4410482.7	578152.3	4410482.8	578167.3	4410480.8
	-6.3	-2.5	-1.6	-0.1	0.1	0.3	2389	578379.0	4410422.7	578153.1	4410452.4	578149.9	4410452.8	578162.7	4410451.1
	-6.2	-2.4	-1.6	-0.1	0.1	0.3	2390	578372.6	4410393.3	578152.1	4410422.3	578146.8	4410423.0	578158.1	4410421.5
	-6.1	-2.4	-1.6	-0.1	0.1	0.3	2391	578368.5	4410363.5	578149.7	4410392.3	578144.6	4410393.0	578155.4	4410391.6
	-6.1	-2.4	-1.6	-0.1	0.0	0.2	2392	578364.6	4410333.8	578148.6	4410362.2	578142.9	4410363.0	578152.2	4410361.8
	-6.1	-2.4	-1.6	-0.1	0.0	0.2	2393	578366.7	4410303.3	578148.0	4410332.0	578140.6	4410333.0	578149.1	4410331.9
	-6.0	-2.4	-1.6	-0.2	-0.0	0.2	2394	578363.8	4410273.4	578148.7	4410301.7	578137.8	4410303.1	578147.4	4410301.9
	-5.8	-2.4	-1.6	-0.3	-0.1	0.2	2395	578355.9	4410244.2	578150.0	4410271.3	578135.0	4410273.2	578144.4	4410272.0
	-5.4	-2.3	-1.5	-0.3	-0.1	0.2	2396	578343.2	4410215.6	578150.4	4410241.0	578132.4	4410243.3	578139.8	4410242.3
	-5.0	-2.2	-1.4	-0.4	-0.2	0.1	2397	578332.0	4410186.8	578153.8	4410210.2	578131.3	4410213.2	578135.8	4410212.6
	-4.8	-2.1	-1.4	-0.5	-0.2	0.2	2398	578326.9	4410157.2	578154.7	4410179.9	578128.8	4410183.3	578137.3	4410182.2
	-4.8	-2.1	-1.4	-0.5	-0.2	0.3	2399	578322.6	4410127.5	578152.9	4410149.9	578126.1	4410153.4	578138.1	4410151.8
	-4.8	-2.1	-1.4	-0.4	-0.1	0.3	2400	578320.8	4410097.5	578148.3	4410120.2	578124.0	4410123.4	578135.9	4410121.8
	-5.4	-2.3	-1.5	-0.4	-0.1	0.3	2401	578336.3	4410065.2	578145.0	4410090.4	578122.7	4410093.3	578134.4	4410091.8
	-5.4	-2.3	-1.5	-0.4	-0.1	0.3	2402	578333.1	4410035.4	578141.3	4410060.6	578121.2	4410063.2	578133.6	4410061.6
	-5.5	-2.3	-1.5	-0.3	-0.1	0.3	2403	578336.1	4410004.7	578138.5	4410030.7	578118.7	4410033.3	578131.2	4410031.7
	-5.6	-2.4	-1.5	-0.4	-0.1	0.3	2404	578336.0	4409974.5	578137.1	4410000.6	578116.2	4410003.4	578128.4	4410001.8
	-5.6	-2.4	-1.5	-0.3	-0.1	0.2	2405	578334.0	4409944.5	578133.6	4409970.8	578114.3	4409973.4	578124.0	4409972.1
	-5.7	-2.4	-1.6	-0.3	-0.1	0.1	2406	578333.9	4409914.2	578130.1	4409941.0	578112.8	4409943.3	578119.0	4409942.5
	-5.8	-2.4	-1.6	-0.2	-0.1	0.2	2407	578332.8	4409884.1	578125.2	4409911.4	578111.1	4409913.3	578118.3	4409912.3
	-5.8	-2.3	-1.5	-0.2	-0.0	0.2	2408	578326.4	4409854.7	578118.8	4409882.0	578109.1	4409883.3	578117.2	4409882.2
	-5.6	-2.3	-1.5	-0.2	-0.0	0.2	2409	578318.1	4409825.5	578117.7	4409851.9	578106.8	4409853.3	578114.9	4409852.3
	-5.5	-2.2	-1.5	-0.2	-0.0	0.2	2410	578312.5	4409796.0	578117.2	4409821.7	578104.8	4409823.3	578113.1	4409822.2
	-5.4	-2.2	-1.5	-0.3	-0.1	0.2	2411	578310.6	4409766.0	578117.6	4409791.4	578102.6	4409793.4	578109.6	4409792.4
	-5.5	-2.3	-1.5	-0.3	-0.1	0.2	2412	578314.0	4409735.3	578118.0	4409761.1	578100.2	4409763.4	578107.1	4409762.5
	-5.4	-2.3	-1.5	-0.3	-0.2	0.1	2413	578310.9	4409705.4	578118.6	4409730.7	578099.0	4409733.3	578103.8	4409732.7
	-5.2	-2.3	-1.5	-0.4	-0.2	0.1	2414	578306.5	4409675.7	578119.4	4409700.4	578096.8	4409703.4	578101.5	4409702.7
	-5.2	-2.2	-1.5	-0.4	-0.2	0.1	2415	578301.3	4409646.2	578116.2	4409670.5	578093.9	4409673.5	578097.8	4409673.0
	-5.2	-2.2	-1.5	-0.4	-0.2	0.1	2416	578297.6	4409616.4	578112.6	4409640.8	578090.9	4409643.6	578094.5	4409643.1
	-5.1	-2.2	-1.5	-0.4	-0.2	0.1	2417	578292.3	4409586.8	578109.5	4409610.9	578087.0	4409613.9	578090.2	4409613.4
	-5.2	-2.2	-1.5	-0.4	-0.2	0.1	2418	578291.2	4409556.7	578106.3	4409581.1	578083.3	4409584.1	578086.2	4409583.7
	-5.4	-2.3	-1.6	-0.4	-0.2	0.1	2419	578296.2	4409525.8	578103.1	4409551.2	578079.2	4409554.4	578082.2	4409554.0
	-5.4	-2.3	-1.6	-0.4	-0.2	0.1	2420	578292.5	4409496.0	578099.9	4409521.4	578076.2	4409524.5	578080.6	4409523.9
	-5.4	-2.3	-1.6	-0.4	-0.2	0.1	2421	578290.0	4409466.1	578097.9	4409491.4	578074.3	4409494.5	578076.9	4409494.2
	-5.5	-2.3	-1.6	-0.4	-0.2	0.1	2422	578291.1	4409435.7	578096.5	4409461.3	578073.1	4409464.4	578075.1	4409464.1
	-5.5	-2.4	-1.6	-0.4	-0.2	0.1	2423	578291.5	4409405.4	578094.3	4409431.3	578071.1	4409434.4	578076.1	4409433.8
	-5.5	-2.3	-1.5	-0.4	-0.1	0.2	2424	578288.6	4409375.5	578091.8	4409401.4	578070.7	4409404.2	578077.9	4409403.3
	-5.5	-2.3	-1.5	-0.3	-0.1	0.2	2425	578286.0	4409345.6	578089.7	4409371.4	578071.4	4409373.9	578078.1	4409373.0
	-5.5	-2.3	-1.5	-0.3	-0.1	0.2	2426	578285.1	4409315.5	578088.1	4409341.4	578069.3	4409343.9	578077.9	4409342.7
	-5.6	-2.4	-1.6	-0.4	-0.1	0.2	2427	578286.6	4409285.0	578086.9	4409311.3	578067.0	4409313.9	578075.2	4409312.8
	-5.7	-2.4	-1.6	-0.4	-0.1	0.2	2428	578288.4	4409254.5	578086.3	4409281.1	578065.9	4409283.8	578073.8	4409282.8
	-5.6	-2.4	-1.6	-0.4	-0.1	0.2	2429	578284.4	4409224.8	578085.3	4409251.0	578062.8	4409253.9	578071.5	4409252.8
	-5.6	-2.4	-1.6	-0.4	-0.2	0.2	2430	578281.9	4409194.8	578083.5	4409221.0	578061.6	4409223.8	578068.2	4409223.0
	-5.4	-2.3	-1.5	-0.4	-0.2	0.2	2431	578275.9	4409165.4	578081.8	4409190.9	578060.0	4409193.8	578066.9	4409192.9
	-5.5	-2.3	-1.5	-0.4	-0.1	0.2	2432	578275.5	4409135.2	578077.8	4409161.2	578057.2	4409163.9	578065.9	4409162.8
	-5.6	-2.3	-1.5	-0.3	-0.1	0.2	2433	578271.8	4409105.4	578072.6	4409131.6	578056.1	4409133.8	578063.0	4409132.9
	-5.5	-2.3	-1.5	-0.3	-0.1	0.1	2434	578268.2	4409075.6	578071.1	4409101.6	578054.7	4409103.7	578059.9	4409103.0
	-5.5	-2.3	-1.5	-0.4	-0.1	0.1	2435	578266.5	4409045.6	578072.1	4409071.2	578052.1	4409073.8	578057.6	4409073.1
	-5.4	-2.3	-1.5	-0.4	-0.2	0.1	2436	578264.4	4409015.6	578071.6	4409041.0	578051.1	4409043.7	578056.6	4409043.0
	-5.4	-2.2	-1.5	-0.2	-0.1	0.1	2437	578256.7	4408986.3	578065.5	4409011.5	578052.6	4409013.2	578055.5	4409012.8
	-5.3		-1.4		-0.1	-0.0	2438	578248.2	4408957.2	578059.2	4408982.1			578051.9	4408983.1

Table B-1. High-Water Shoreline Position Change - Sandy Hook to Barnegat Inlet, New Jersey

	High-Water Shoreline Position Change Rate (m/yr)					
	1836/39 to			1855/75 to		1932/33 to
Transect #	1855/75	1932/33	1977	1932/33	1977	1977
2439	-5.4	-2.1	-1.4	-0.1	-0.1	-0.0
2440	-5.4	-2.1	-1.4	-0.0	-0.0	-0.0
2441	-5.3	-2.0	-1.4	0.0	0.0	0.0
2442	-5.3	-1.9	-1.3	0.2	0.1	-0.1
2443	-5.2	-1.9	-1.3	0.2	0.1	-0.0
2444	-5.0	-1.8	-1.2	0.2	0.1	-0.1
2445	-4.8	-1.7	-1.2	0.3	0.1	-0.1
2446	-4.9	-1.7	-1.2	0.3	0.1	-0.1
2447	-4.9	-1.7	-1.2	0.3	0.1	-0.1
2448	-4.8	-1.7	-1.2	0.3	0.1	-0.1
2449	-4.6	-1.6	-1.1	0.3	0.1	-0.1
2450	-4.4	-1.6	-1.1	0.2	0.1	-0.0
2451	-4.3	-1.6	-1.1	0.1	0.1	0.0
2452	-4.3	-1.6	-1.1	0.1	0.1	0.0
2453	-4.3	-1.6	-1.1	0.1	0.1	0.0
2454	-4.5	-1.7	-1.1	0.1	0.1	0.0
2455	-4.6	-1.7	-1.2	0.1	0.1	-0.0
2456	-4.8	-1.8	-1.2	0.1	0.0	-0.1
2457	-4.8	-1.8	-1.2	0.1	0.0	-0.1
2458	-4.9	-1.8	-1.2	0.1	0.1	0.0
2459	-5.0	-1.8	-1.2	0.2	0.1	-0.0
2460	-5.0	-1.8	-1.2	0.3	0.1	-0.1
2461	-5.1	-1.8	-1.3	0.2	0.1	-0.1
2462	-5.4	-2.0	-1.3	0.2	0.1	0.0
2463	-5.8	-2.1	-1.4	0.2	0.1	0.0
2464	-6.2	-2.3	-1.5	0.2	0.1	0.0
2465	-6.4	-2.4	-1.6	0.2	0.1	0.1
2466	-6.7	-2.5	-1.7	0.1	0.1	0.2
2467	-6.7	-2.5	-1.7	0.1	0.1	0.2
2468	-6.5	-2.5	-1.6	0.0	0.1	0.2
2469	-6.1	-2.4	-1.6	-0.1	0.0	0.2
2470	-6.0	-2.4	-1.6	-0.1	0.0	0.2
2471	-5.9	-2.4	-1.6	-0.2	-0.0	0.2
2472	-5.7	-2.3	-1.5	-0.2	-0.1	0.2
2473	-5.5	-2.3	-1.5	-0.3	-0.1	0.1
2474	-5.3	-2.2	-1.5	-0.3	-0.2	0.1
2475	-5.3	-2.2	-1.5	-0.3	-0.2	0.0
2476	-5.1	-2.1	-1.5	-0.3	-0.2	0.0
2477	-5.2	-2.2	-1.5	-0.3	-0.1	0.1
2478	-5.1	-2.1	-1.4	-0.2	-0.1	0.1
2479	-5.0		-1.4		-0.1	0.0
2480	-4.9	-2.0	-1.3	-0.1	-0.1	-0.0
2481	-4.8	-1.9	-1.3	-0.1	-0.1	-0.0
2482	-4.7	-1.8	-1.3	-0.0	-0.1	-0.1
2483	-4.7	-1.8	-1.3	0.0	-0.0	-0.1
2484	-4.8	-1.8	-1.3	0.1	-0.0	-0.2
2485	-4.8	-1.8	-1.3	0.1	-0.0	-0.2
2486	-5.0	-1.8	-1.3	0.2	0.0	-0.3
2487	-5.1	-1.8	-1.3	0.2	0.0	-0.3
2488	-5.1	-1.8	-1.3	0.2	0.0	-0.3
2489	-5.2	-1.9	-1.4	0.2	0.0	-0.3
2490	-5.3	-1.9	-1.4	0.2	-0.0	-0.3
2491	-5.4	-1.9	-1.4	0.2	-0.0	-0.3

	High-Water Shoreline Position (UTM Zone 18, NAD 1983)							
	1836/39		1855/75		1932/33		1977	
Transect #	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)
2439	578246.4	4408927.2	578054.2	4408952.5	578049.7	4408953.1	578049.1	4408953.2
2440	578241.2	4408897.6	578049.9	4408922.8	578047.8	4408923.1	578047.0	4408923.2
2441	578232.8	4408868.5	578043.3	4408893.4	578045.5	4408893.1	578045.5	4408893.1
2442	578225.7	4408839.1	578036.7	4408864.0	578045.7	4408862.8	578042.4	4408863.3
2443	578217.8	4408809.9	578031.7	4408834.4	578043.9	4408832.8	578042.3	4408833.0
2444	578206.0	4408781.2	578028.5	4408804.6	578041.5	4408802.9	578038.8	4408803.2
2445	578196.5	4408752.2	578024.7	4408774.8	578040.0	4408772.8	578034.4	4408773.5
2446	578194.3	4408722.2	578019.5	4408745.2	578038.1	4408742.8	578033.6	4408743.4
2447	578194.4	4408692.0	578018.1	4408715.2	578035.6	4408712.9	578031.6	4408713.4
2448	578188.6	4408662.5	578018.4	4408684.9	578033.8	4408682.8	578028.5	4408683.5
2449	578179.8	4408633.4	578017.5	4408654.7	578032.1	4408652.8	578028.2	4408653.3
2450	578174.0	4408603.9	578017.2	4408624.5	578028.3	4408623.1	578027.9	4408623.1
2451	578170.3	4408574.1	578018.4	4408594.1	578024.3	4408593.3	578025.9	4408593.1
2452	578169.8	4408543.9	578017.4	4408564.0	578023.6	4408563.1	578025.1	4408563.0
2453	578171.1	4408513.5	578016.2	4408533.9	578021.3	4408533.2	578023.0	4408533.0
2454	578172.9	4408483.0	578013.6	4408504.0	578019.6	4408503.2	578021.3	4408502.9
2455	578175.5	4408452.4	578011.1	4408474.0	578018.1	4408473.1	578016.9	4408473.3
2456	578180.4	4408421.5	578009.8	4408443.9	578015.8	4408443.1	578012.8	4408443.5
2457	578177.4	4408391.6	578007.4	4408414.0	578013.5	4408413.2	578010.5	4408413.6
2458	578176.9	4408361.4	578002.8	4408384.3	578010.5	4408383.3	578010.5	4408383.3
2459	578176.8	4408331.2	577998.2	4408354.7	578008.3	4408353.4	578008.0	4408353.4
2460	578173.7	4408301.3	577993.9	4408325.0	578008.7	4408323.0	578005.8	4408323.4
2461	578175.2	4408270.9	577992.1	4408295.0	578005.3	4408293.2	578003.3	4408293.5
2462	578181.8	4408239.7	577990.9	4408264.9	578000.4	4408263.6	578000.9	4408263.6
2463	578194.0	4408207.9	577987.3	4408235.1	577997.4	4408233.8	577998.1	4408233.7
2464	578204.5	4408176.2	577982.0	4408205.5	577994.6	4408203.9	577996.4	4408203.6
2465	578210.8	4408145.1	577981.1	4408175.4	577991.2	4408174.1	577993.7	4408173.7
2466	578220.4	4408113.6	577980.6	4408145.2	577987.3	4408144.3	577993.7	4408143.5
2467	578219.6	4408083.5	577980.4	4408115.0	577984.3	4408114.4	577992.8	4408113.3
2468	578214.2	4408053.9	577982.7	4408084.4	577982.9	4408084.4	577989.7	4408083.5
2469	578201.6	4408025.3	577985.3	4408053.8	577980.8	4408054.4	577987.4	4408053.5
2470	578198.4	4407995.5	577985.5	4408023.5	577978.7	4408024.4	577986.0	4408023.4
2471	578196.1	4407965.5	577984.1	4407993.4	577974.6	4407994.7	577981.7	4407993.8
2472	578186.2	4407936.6	577983.3	4407963.3	577970.2	4407965.0	577976.7	4407964.2
2473	578179.9	4407907.1	577983.0	4407933.1	577968.0	4407935.0	577971.8	4407934.5
2474	578171.9	4407877.9	577982.7	4407902.8	577964.5	4407905.2	577966.5	4407905.0
2475	578171.3	4407847.8	577981.7	4407872.7	577962.4	4407875.3	577963.0	4407875.2
2476	578160.0	4407819.0	577978.9	4407842.8	577960.7	4407845.2	577961.2	4407845.2
2477	578158.8	4407788.9	577974.9	4407813.1	577958.2	4407815.3	577960.7	4407815.0
2478	578151.8	4407759.6	577970.2	4407783.4	577956.7	4407785.2	577958.8	4407785.0
2479	578144.5	4407730.2	577966.5	4407753.7			577956.2	4407755.0
2480	578137.2	4407701.0	577962.8	4407723.9	577955.3	4407724.9	577954.9	4407725.0
2481	578128.9	4407671.8	577959.5	4407694.1	577955.6	4407694.6	577953.8	4407694.8
2482	578125.1	4407642.0	577956.9	4407664.2	577956.4	4407664.2	577951.9	4407664.8
2483	578123.1	4407612.0	577954.2	4407634.3	577956.3	4407634.0	577950.8	4407634.7
2484	578121.6	4407582.0	577951.2	4407604.4	577956.5	4407603.7	577948.8	4407604.7
2485	578120.1	4407551.9	577947.7	4407574.6	577955.7	4407573.5	577947.1	4407574.7
2486	578122.5	4407521.3	577943.8	4407544.9	577954.2	4407543.5	577943.4	4407544.9
2487	578119.3	4407491.5	577939.2	4407515.2	577952.2	4407513.5	577939.8	4407515.1
2488	578116.0	4407461.7	577934.9	4407485.5	577947.6	4407483.8	577936.5	4407485.3
2489	578115.9	4407431.4	577931.1	4407455.8	577943.3	4407454.1	577931.2	4407455.7
2490	578116.3	4407401.1	577928.9	4407425.8	577940.5	4407424.3	577927.5	4407426.0
2491	578117.8	4407370.7	577926.2	4407395.9	577938.5	4407394.3	577924.4	4407396.1

Table B-1. High-Water Shoreline Position Change - Sandy Hook to Barnegat Inlet, New Jersey

	High-Water Shoreline Position Change Rate (m/yr)					
	1836/39 to			1855/75 to		1932/33 to
Transect #	1855/75	1932/33	1977	1932/33	1977	1977
2492	-5.6	-2.0	-1.5	0.3	-0.0	-0.4
2493	-5.8	-2.0	-1.5	0.3	0.0	-0.4
2494	-6.0	-2.1		0.4		
2495	-6.0	-2.0	-1.5	0.4	0.0	-0.5
2496	-6.0	-2.1	-1.6	0.4	0.0	-0.5
2497	-5.8	-2.0	-1.5	0.3	-0.0	-0.5
2498	-5.9	-2.1	-1.5	0.3	0.0	-0.4
2499	-5.8	-2.0	-1.5	0.3	0.1	-0.3
2500	-5.7	-2.0	-1.5	0.3	0.1	-0.3
2501	-5.4	-2.0	-1.4	0.2	0.0	-0.3
2502	-5.2	-2.0	-1.4	0.0	-0.1	-0.2
2503	-5.1	-2.0	-1.4	-0.1	-0.1	-0.1
2504	-4.9	-2.1	-1.4	-0.4	-0.2	-0.1
2505	-4.4	-2.0	-1.4	-0.6	-0.3	-0.1
2506	-4.2	-2.0	-1.4	-0.7	-0.4	-0.0
2507	-4.1	-2.0	-1.4	-0.7	-0.4	-0.0
2508	-3.8	-2.0	-1.3	-0.8	-0.5	0.0
2509	-3.7	-1.9	-1.3	-0.9	-0.5	-0.0
2510	-3.6	-1.9	-1.3	-0.9	-0.5	0.0
2511	-3.5	-1.9	-1.3	-0.8	-0.5	-0.1
2512	-3.4	-1.8	-1.3	-0.8	-0.5	-0.1
2513	-3.4	-1.8	-1.3	-0.8	-0.5	-0.0
2514	-3.4	-1.9	-1.3	-0.9	-0.5	-0.0
2515	-3.4	-1.9	-1.3	-0.9	-0.5	0.0
2516	-3.2	-1.8	-1.3	-1.0	-0.6	-0.0
2517	-2.9	-1.7	-1.2	-1.0	-0.6	0.0
2518	-2.9	-1.8	-1.2	-1.1	-0.6	0.1
2519	-2.8	-1.8	-1.2	-1.1	-0.6	0.1
2520	-2.8	-1.8	-1.2	-1.1	-0.6	0.1
2521	-2.8	-1.7	-1.2	-1.1	-0.6	-0.0
2522	-2.8	-1.7	-1.2	-1.0	-0.6	-0.1
2523	-2.8	-1.7	-1.2	-1.0	-0.6	-0.1
2524	-2.8	-1.6	-1.2	-0.9	-0.6	-0.2
2525	-2.8	-1.6	-1.2	-0.9	-0.6	-0.2
2526	-2.9	-1.6	-1.2	-0.8	-0.6	-0.3
2527	-2.9		-1.2		-0.6	-0.4
2528	-3.0	-1.6	-1.2	-0.7	-0.6	-0.4
2529	-3.0	-1.7	-1.2	-0.8	-0.6	-0.3
2530	-3.2	-1.7	-1.3	-0.8	-0.6	-0.3
2531	-3.4	-1.8	-1.3	-0.8	-0.6	-0.3
2532	-3.5	-1.8	-1.4	-0.8	-0.6	-0.3
2533	-3.7	-1.9	-1.4	-0.7	-0.6	-0.4
2534	-3.7	-1.9	-1.4	-0.7	-0.6	-0.5
2535	-3.7	-1.9	-1.4	-0.8	-0.6	-0.5
2536	-3.6	-1.9	-1.4	-0.8	-0.7	-0.5
2537	-3.5	-1.9	-1.4	-0.9	-0.7	-0.5
2538	-3.3	-1.9	-1.4	-1.0	-0.8	-0.6
2539	-3.2	-1.8	-1.4	-1.0	-0.8	-0.6
2540	-3.1	-1.8	-1.4	-1.1	-0.9	-0.6
2541	-3.0	-1.8	-1.4	-1.1	-0.9	-0.6
2542	-3.0	-1.8	-1.4	-1.1	-0.9	-0.6
2543	-3.0	-1.8	-1.4	-1.0	-0.8	-0.6
2544	-3.1	-1.8	-1.4	-1.0	-0.9	-0.6

	High-Water Shoreline Position (UTM Zone 18, NAD 1983)							
	1836/39		1855/75		1932/33		1977	
Transect #	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)
2492	578122.3	4407339.8	577921.9	4407366.2	577936.6	4407364.3	577920.4	4407366.4
2493	578123.3	4407309.4	577917.1	4407336.6	577934.4	4407334.3	577917.6	4407336.5
2494	578125.0	4407278.9	577912.2	4407307.0	577934.1	4407304.1		
2495	578121.7	4407249.1	577908.8	4407277.1	577933.7	4407273.9	577912.4	4407276.7
2496	578123.3	4407218.6	577907.7	4407247.0	577931.4	4407243.9	577910.2	4407246.7
2497	578116.7	4407189.3	577909.2	4407216.6	577927.2	4407214.2	577907.2	4407216.8
2498	578116.5	4407159.0	577905.2	4407186.8	577923.8	4407184.4	577908.3	4407186.4
2499	578110.7	4407129.5	577902.5	4407156.9	577921.0	4407154.5	577908.3	4407156.2
2500	578104.8	4407100.0	577900.8	4407126.9	577918.1	4407124.6	577905.7	4407126.3
2501	578095.9	4407071.0	577902.4	4407096.4	577913.9	4407094.9	577903.0	4407096.3
2502	578090.9	4407041.4	577905.6	4407065.7	577907.7	4407065.5	577900.4	4407066.4
2503	578090.1	4407011.2	577909.6	4407035.0	577901.5	4407036.0	577895.7	4407036.8
2504	578088.5	4406981.1	577915.4	4407003.9	577895.5	4407006.6	577891.6	4407007.1
2505	578079.1	4406952.1	577921.1	4406972.9	577889.6	4406977.1	577887.3	4406977.4
2506	578072.1	4406922.8	577922.6	4406942.5	577883.8	4406947.6	577883.2	4406947.7
2507	578068.7	4406893.0	577923.9	4406912.0	577881.1	4406917.7	577880.5	4406917.8
2508	578059.5	4406863.9	577923.9	4406881.8	577876.8	4406888.0	577877.3	4406887.9
2509	578053.0	4406834.5	577922.4	4406851.7	577873.4	4406858.2	577872.9	4406858.2
2510	578049.9	4406804.7	577920.3	4406821.7	577871.6	4406828.1	577872.3	4406828.1
2511	578042.6	4406775.4	577917.7	4406791.8	577870.0	4406798.1	577867.8	4406798.4
2512	578034.5	4406746.2	577913.7	4406762.1	577867.2	4406768.2	577863.1	4406768.8
2513	578030.7	4406716.4	577909.6	4406732.4	577861.5	4406738.7	577859.9	4406738.9
2514	578028.6	4406686.4	577907.4	4406702.4	577855.8	4406709.2	577855.6	4406709.2
2515	578026.4	4406656.5	577905.6	4406672.4	577852.0	4406679.4	577852.5	4406679.4
2516	578018.2	4406627.3	577903.9	4406642.3	577848.5	4406649.6	577847.9	4406649.7
2517	578006.2	4406598.6	577902.5	4406612.3	577845.4	4406619.8	577845.7	4406619.7
2518	578003.3	4406568.7	577901.6	4406582.1	577840.5	4406590.2	577843.2	4406589.8
2519	578001.2	4406538.8	577900.5	4406552.0	577835.7	4406560.5	577839.7	4406560.0
2520	577997.8	4406508.9	577899.1	4406521.9	577834.5	4406530.4	577837.8	4406530.0
2521	577996.6	4406478.8	577897.3	4406491.9	577834.3	4406500.2	577834.1	4406500.2
2522	577993.4	4406449.0	577893.4	4406462.2	577834.2	4406470.0	577830.3	4406470.5
2523	577989.6	4406419.3	577889.8	4406432.4	577833.9	4406439.7	577827.9	4406440.5
2524	577986.6	4406389.4	577886.9	4406402.5	577834.3	4406409.4	577824.7	4406410.7
2525	577985.1	4406359.3	577883.8	4406372.7	577833.9	4406379.2	577824.0	4406380.5
2526	577983.3	4406329.3	577880.2	4406342.9	577833.9	4406349.0	577822.7	4406350.4
2527	577979.7	4406299.5	577875.6	4406313.2			577818.5	4406320.7
2528	577979.7	4406269.3	577872.6	4406283.4	577831.5	4406288.8	577815.5	4406290.9
2529	577980.9	4406238.8	577872.5	4406253.1	577827.0	4406259.1	577812.8	4406261.0
2530	577985.7	4406207.9	577870.8	4406223.1	577823.9	4406229.3	577809.5	4406231.1
2531	577987.6	4406177.4	577867.9	4406193.2	577820.9	4406199.4	577807.2	4406201.2
2532	577990.2	4406146.8	577864.2	4406163.4	577818.5	4406169.4	577804.1	4406171.3
2533	577992.7	4406116.3	577861.5	4406133.5	577819.9	4406139.0	577802.2	4406141.3
2534	577995.3	4406085.7	577862.2	4406103.2	577820.7	4406108.6	577799.9	4406111.4
2535	577995.4	4406055.4	577863.4	4406072.8	577820.0	4406078.5	577798.4	4406081.3
2536	577994.1	4406025.3	577865.8	4406042.2	577818.5	4406048.4	577796.7	4406051.3
2537	577992.4	4405995.3	577868.7	4406011.5	577816.9	4406018.4	577794.9	4406021.3
2538	577988.1	4405965.6	577871.6	4405980.9	577815.5	4405988.3	577791.4	4405991.5
2539	577986.8	4405935.5	577873.7	4405950.4	577815.0	4405958.1	577790.3	4405961.3
2540	577984.0	4405905.6	577873.7	4405920.1	577813.1	4405928.1	577787.2	4405931.5
2541	577979.6	4405875.9	577872.9	4405890.0	577809.6	4405898.3	577782.4	4405901.9
2542	577972.1	4405846.6	577866.6	4405860.5	577806.2	4405868.5	577779.6	4405872.0
2543	577969.4	4405816.7	577861.3	4405831.0	577803.3	4405838.6	577777.2	4405842.0
2544	577967.3	4405786.7	577856.9	4405801.3	577798.8	4405808.9	577771.5	4405812.5

Table B-1. High-Water Shoreline Position Change - Sandy Hook to Barnegat Inlet, New Jersey

	High-Water Shoreline Position Change Rate (m/yr)					
	1836/39 to			1855/75 to		1932/33 to
Transect #	1855/75	1932/33	1977	1932/33	1977	1977
2545	-3.1	-1.8	-1.5	-1.0	-0.9	-0.6
2546	-3.0	-1.8	-1.4	-1.1	-0.9	-0.6
2547	-2.9	-1.8	-1.4	-1.1	-0.9	-0.7
2548	-2.9	-1.8	-1.4	-1.1	-0.9	-0.7
2549	-2.9	-1.8	-1.4	-1.0	-0.9	-0.6
2550	-3.0	-1.8	-1.4	-1.0	-0.8	-0.6
2551	-3.2	-1.8	-1.4	-0.9	-0.8	-0.7
2552	-3.2	-1.8	-1.4	-0.8	-0.8	-0.8
2553	-3.1	-1.7	-1.4	-0.8	-0.8	-0.8
2554	-3.1	-1.7	-1.4	-0.8	-0.8	-0.8
2555	-2.8	-1.6	-1.4	-0.8	-0.8	-0.9
2556	-2.8	-1.6	-1.4	-0.8	-0.8	-0.9
2557	-2.6	-1.5	-1.3	-0.9	-0.8	-0.8
2558	-2.1	-1.4	-1.2	-0.9	-0.9	-0.8
2559	-2.0	-1.4	-1.2	-1.0	-0.9	-0.7
2560	-1.9	-1.4	-1.2	-1.1	-0.9	-0.6
2561	-1.8	-1.4	-1.1	-1.1	-0.9	-0.6
2562	-1.7	-1.3	-1.1	-1.1	-0.9	-0.7
2563	-1.5	-1.3	-1.1	-1.2	-1.0	-0.7
2564	-1.4	-1.3	-1.1	-1.2	-1.0	-0.7
2565	-1.3	-1.2	-1.1	-1.1	-1.0	-0.8
2566	-1.2	-1.1	-1.0	-1.1	-1.0	-0.9
2567	-0.8	-1.0	-1.0	-1.1	-1.0	-0.9
2568	-0.3		-0.9		-1.1	-0.9
2569	0.1	-0.7	-0.8	-1.3	-1.1	-0.9
2570	0.4	-0.7	-0.7	-1.3	-1.1	-0.9
2571	0.6	-0.7	-0.7	-1.4	-1.2	-0.9
2572	0.7	-0.6	-0.7	-1.5	-1.2	-0.9
2573	0.9	-0.6	-0.7	-1.5	-1.3	-0.9
2574	1.2	-0.5	-0.7	-1.6	-1.3	-1.0
2575	1.4	-0.5	-0.7	-1.6	-1.4	-1.0
2576	1.4	-0.5	-0.7	-1.7	-1.4	-1.1
2577	1.6	-0.5	-0.7	-1.7	-1.4	-1.1
2578	1.9	-0.4	-0.6	-1.7	-1.5	-1.2
2579	2.2	-0.2	-0.6	-1.8	-1.5	-1.2
2580	2.4	-0.2	-0.5	-1.8	-1.5	-1.2
2581	2.6	-0.1	-0.5	-1.8	-1.6	-1.3
2582	2.7	-0.1	-0.5	-1.8	-1.6	-1.4
2583	3.1	0.0	-0.4	-1.9	-1.7	-1.4
2584	3.2	0.0	-0.4	-1.9	-1.7	-1.4
2585	3.3	0.1	-0.4	-2.0	-1.6	-1.2
2586	3.5	0.1	-0.3	-2.0	-1.6	-1.1
2587	3.7	0.2	-0.2	-2.0	-1.6	-1.0
2588	3.6	0.2	-0.2	-2.0	-1.5	-0.9
2589	3.7	0.2	-0.1	-2.0	-1.5	-0.8
2590	4.2	0.4	-0.0	-2.0	-1.5	-0.8
2591	4.5	0.4	0.1	-2.1	-1.5	-0.8
2592	4.7	0.5	0.1	-2.1	-1.6	-0.8
2593	4.9	0.5	0.1	-2.2	-1.6	-0.8
2594	5.2	0.6	0.1	-2.3	-1.6	-0.9
2595	5.4	0.6	0.2	-2.4	-1.7	-0.8
2596	5.6	0.6	0.2	-2.6	-1.8	-0.7
2597	6.0	0.6	0.2	-2.8	-1.8	-0.6

	High-Water Shoreline Position (UTM Zone 18, NAD 1983)							
	1836/39		1855/75		1932/33		1977	
Transect #	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)
2545	577965.2	4405756.8	577853.7	4405771.4	577793.8	4405779.3	577767.0	4405782.9
2546	577957.9	4405727.5	577850.8	4405741.6	577789.9	4405749.6	577763.6	4405753.1
2547	577951.3	4405698.1	577847.1	4405711.8	577786.1	4405719.8	577757.2	4405723.6
2548	577945.2	4405668.6	577843.3	4405682.0	577782.2	4405690.1	577753.1	4405693.9
2549	577943.0	4405638.6	577839.5	4405652.3	577779.9	4405660.1	577752.7	4405663.7
2550	577941.9	4405608.5	577834.0	4405622.7	577778.7	4405630.0	577752.2	4405633.5
2551	577944.9	4405577.9	577829.1	4405593.1	577778.1	4405599.8	577748.8	4405603.7
2552	577940.4	4405548.2	577825.5	4405563.3	577777.1	4405569.7	577743.4	4405574.2
2553	577931.5	4405519.1	577822.2	4405533.5	577774.2	4405539.8	577739.4	4405544.4
2554	577929.3	4405489.2	577819.9	4405503.6	577771.4	4405509.9	577737.8	4405514.4
2555	577917.6	4405460.4	577816.5	4405473.7	577769.6	4405479.9	577731.4	4405485.0
2556	577911.9	4405430.9	577812.1	4405444.1	577764.6	4405450.3	577727.2	4405455.2
2557	577902.8	4405401.9	577809.6	4405414.1	577759.9	4405420.7	577724.3	4405425.4
2558	577881.9	4405374.4	577807.2	4405384.2	577754.0	4405391.2	577720.9	4405395.6
2559	577877.4	4405344.7	577805.4	4405354.2	577747.2	4405361.8	577715.8	4405366.0
2560	577871.9	4405315.2	577803.5	4405324.2	577740.6	4405332.5	577713.7	4405336.0
2561	577864.5	4405285.9	577801.3	4405294.2	577737.5	4405302.6	577709.9	4405306.2
2562	577858.7	4405256.4	577799.7	4405264.2	577735.1	4405272.7	577704.9	4405276.6
2563	577852.1	4405227.0	577798.9	4405234.0	577732.8	4405242.7	577702.5	4405246.7
2564	577846.6	4405197.5	577798.1	4405203.8	577730.3	4405212.8	577699.1	4405216.9
2565	577844.5	4405167.5	577797.0	4405173.7	577731.5	4405182.4	577696.3	4405187.0
2566	577837.3	4405138.2	577796.1	4405143.6	577731.9	4405152.0	577694.9	4405156.9
2567	577825.1	4405109.5	577795.7	4405113.4	577730.1	4405122.0	577691.6	4405127.1
2568	577807.3	4405081.6	577795.3	4405083.2			577686.7	4405097.5
2569	577791.0	4405053.5	577795.7	4405052.9	577722.8	4405062.5	577683.6	4405067.6
2570	577782.3	4405024.4	577796.3	4405022.5	577719.5	4405032.6	577681.4	4405037.7
2571	577776.0	4404994.9	577796.4	4404992.3	577715.1	4405003.0	577676.4	4405008.1
2572	577770.4	4404965.4	577796.4	4404962.0	577712.0	4404973.1	577670.9	4404978.5
2573	577763.1	4404936.1	577795.8	4404931.8	577707.1	4404943.5	577666.1	4404948.9
2574	577751.9	4404907.3	577794.9	4404901.7	577704.4	4404913.6	577660.2	4404919.4
2575	577745.1	4404878.0	577794.4	4404871.5	577699.8	4404883.9	577655.9	4404889.7
2576	577742.9	4404848.0	577794.3	4404841.2	577697.8	4404853.9	577651.9	4404860.0
2577	577738.5	4404818.3	577794.4	4404811.0	577696.8	4404823.8	577648.8	4404830.1
2578	577728.3	4404789.4	577794.5	4404780.7	577695.9	4404793.7	577644.2	4404800.5
2579	577715.6	4404760.8	577794.3	4404750.5	577693.4	4404763.7	577640.8	4404770.7
2580	577709.5	4404731.4	577793.9	4404720.3	577691.9	4404733.7	577638.0	4404740.8
2581	577702.3	4404702.1	577793.9	4404690.0	577691.3	4404703.5	577634.2	4404711.0
2582	577697.8	4404672.4	577794.0	4404659.7	577689.4	4404673.5	577629.6	4404681.4
2583	577685.0	4404643.8	577794.1	4404629.5	577686.8	4404643.6	577626.3	4404651.5
2584	577681.5	4404614.0	577794.2	4404599.2	577684.0	4404613.7	577625.0	4404621.5
2585	577676.6	4404584.4	577793.7	4404569.0	577681.3	4404583.8	577629.0	4404590.7
2586	577667.4	4404555.4	577792.9	4404538.8	577678.5	4404553.9	577632.1	4404560.0
2587	577658.7	4404526.2	577789.1	4404509.1	577674.3	4404524.2	577631.7	4404529.8
2588	577654.2	4404496.6	577784.2	4404479.5	577669.7	4404494.5	577631.3	4404499.6
2589	577647.7	4404467.2	577780.9	4404449.6	577665.8	4404464.8	577629.4	4404469.6
2590	577629.1	4404439.4	577778.3	4404419.7	577662.5	4404435.0	577628.1	4404439.5
2591	577616.8	4404410.7	577776.3	4404389.7	577658.2	4404405.3	577623.7	4404409.8
2592	577608.4	4404381.6	577775.9	4404359.5	577654.2	4404375.5	577618.7	4404380.2
2593	577601.5	4404352.2	577776.7	4404329.2	577651.9	4404345.6	577615.8	4404350.3
2594	577594.6	4404322.9	577778.9	4404298.6	577649.6	4404315.6	577612.7	4404320.5
2595	577588.8	4404293.4	577781.0	4404268.1	577644.5	4404286.0	577608.8	4404290.8
2596	577583.3	4404263.8	577783.3	4404237.5	577636.4	4404256.9	577605.9	4404260.9
2597	577573.8	4404234.8	577787.5	4404206.7	577627.6	4404227.8	577602.7	4404231.0

Table B-1. High-Water Shoreline Position Change - Sandy Hook to Barnegat Inlet, New Jersey

	High-Water Shoreline Position Change Rate (m/yr)						High-Water Shoreline Position (UTM Zone 18, NAD 1983)									
	1836/39 to			1855/75 to		1932/33 to	1836/39		1855/75		1932/33		1977			
Transect #	1855/75	1932/33	1977	1932/33	1977	1977	Transect #	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)
2598	6.3	0.6	0.3	-3.0	-1.9	-0.4	2598	577565.7	4404205.6	577791.4	4404175.9	577618.7	4404198.7	577600.1	4404201.1
2599	6.7	0.6	0.3	-3.2	-1.9	-0.3	2599	577552.9	4404177.1	577793.1	4404145.5	577610.6	4404169.5	577596.6	4404171.3
2600	7.4	0.8	0.5	-3.3	-2.0	-0.3	2600	577530.7	4404149.7	577794.7	4404115.0	577604.1	4404140.1	577592.3	4404141.6
2601	7.8	0.9	0.5	-3.5	-2.1	-0.2	2601	577516.8	4404121.3	577795.7	4404084.6	577597.0	4404110.7	577587.1	4404112.0
2602	8.3	1.0	0.6	-3.6	-2.1	-0.2	2602	577501.0	4404093.1	577795.5	4404054.4	577590.4	4404081.4	577582.2	4404082.4
2603	8.6	1.1	0.7	-3.6	-2.1	-0.2	2603	577487.3	4404064.7	577793.4	4404024.4	577588.2	4404051.4	577578.6	4404052.7
2604	9.2	1.3	0.8	-3.6	-2.2	-0.3	2604	577463.9	4404037.5	577790.8	4403994.4	577586.2	4404021.4	577573.6	4404023.0
2605	9.9	1.6	1.0	-3.6	-2.2	-0.4	2605	577435.1	4404011.0	577787.9	4403964.6	577583.7	4403991.5	577567.2	4403993.6
2606	10.6	1.9	1.1	-3.6	-2.2	-0.4	2606	577406.3	4403984.6	577784.7	4403934.7	577580.3	4403961.6	577561.6	4403964.1
2607	11.5	2.2	1.4	-3.6	-2.2	-0.4	2607	577371.7	4403958.8	577781.6	4403904.9	577575.2	4403932.1	577556.6	4403934.5
2608	12.2	2.4	1.5	-3.6	-2.3	-0.5	2608	577343.9	4403932.3	577778.1	4403875.1	577570.9	4403902.4	577550.3	4403905.1
2609	13.0	2.7	1.7	-3.6	-2.3	-0.5	2609	577310.0	4403906.5	577774.6	4403845.3	577565.1	4403872.9	577544.8	4403875.5
2610				-3.6	-2.3	-0.5	2610			577768.1	4403815.9	577559.1	4403843.4	577539.1	4403846.0
2611				-3.6	-2.2	-0.5	2611			577759.5	4403786.8	577554.5	4403813.8	577534.6	4403816.4
2612				-3.5	-2.2	-0.5	2612			577750.4	4403757.7	577551.3	4403783.9	577528.8	4403786.9
2613				-3.5	-2.2	-0.5	2613			577747.0	4403727.9	577548.3	4403754.1	577524.9	4403757.1
2614				-3.4	-2.2	-0.6	2614			577739.9	4403698.6	577546.6	4403724.0	577520.8	4403727.4
2615				-3.2	-2.1	-0.6	2615			577729.8	4403669.6	577543.4	4403694.2	577517.5	4403697.6
2616				-3.1	-2.0	-0.6	2616			577718.8	4403640.8	577539.0	4403664.5	577514.4	4403667.7
2617				-3.0	-1.9	-0.6	2617			577707.3	4403612.1	577535.0	4403634.8	577510.8	4403638.0
2618				-2.8	-1.8	-0.6	2618			577691.1	4403584.0	577531.0	4403605.0	577507.2	4403608.2
2619				-2.5	-1.7	-0.6	2619			577672.2	4403556.2	577527.3	4403575.3	577502.7	4403578.5
2620				-2.1	-1.5	-0.6	2620			577648.5	4403529.0	577525.9	4403545.2	577498.4	4403548.8
2621				-1.7	-1.3	-0.7	2621			577622.5	4403502.2	577524.7	4403515.1	577492.9	4403519.3
2622				-1.4	-1.1	-0.8	2622			577602.2	4403474.6	577523.5	4403485.0	577489.9	4403489.4
2623				-1.0	-1.0	-0.9	2623			577584.5	4403446.7	577525.6	4403454.4	577486.0	4403459.7
2624				-0.7	-0.8	-1.0	2624			577562.9	4403419.3	577525.7	4403424.2	577481.6	4403430.0
2625				-0.4	-0.6	-1.0	2625			577540.2	4403392.0	577520.1	4403394.7	577477.7	4403400.2
2626				-0.1	-0.4	-0.8	2626			577515.5	4403365.0	577507.8	4403366.0	577472.5	4403370.7
2627				0.1	-0.2	-0.5	2627			577485.0	4403338.8	577491.7	4403337.9	577468.6	4403340.9
2628				0.5	0.1	-0.3	2628			577450.3	4403313.1	577477.2	4403309.5	577464.4	4403311.2
2629				0.7	0.4	-0.0	2629			577421.0	4403286.7	577462.3	4403281.2	577460.5	4403281.5
2630				1.2	0.7	0.1	2630			577388.1	4403260.7	577455.6	4403251.9	577458.0	4403251.5
2631				2.2	1.2	-0.1	2631			577334.9	4403237.5	577459.8	4403221.0	577454.7	4403221.7
2632				3.4	1.9	-0.2	2632			577264.0	4403216.6	577458.8	4403190.9	577451.6	4403191.9
2633						-0.1	2633					577454.5	4403161.2	577448.9	4403162.0
2634						-0.0	2634					577446.4	4403132.0	577445.3	4403132.2
2635						0.2	2635					577434.8	4403103.3	577442.1	4403102.3
2636						0.4	2636					577422.2	4403074.7	577439.2	4403072.5
2637						0.6	2637					577412.8	4403045.7	577437.0	4403042.5
2638						0.7	2638							577434.3	4403012.6
2639						0.7	2639					577400.7	4402986.7	577430.3	4402982.9
2640						0.5	2640					577402.4	4402956.3	577426.0	4402953.2
2641						0.4	2641					577403.0	4402925.9	577421.8	4402923.5
2642						0.3	2642					577405.1	4402895.4	577418.1	4402893.7
2643						0.1	2643					577408.6	4402864.7	577413.4	4402864.0
2644						0.1	2644					577405.3	4402834.8	577411.5	4402834.0
2645						0.3	2645							577407.6	4402804.3
2646						0.7	2646					577377.8	4402778.0	577406.1	4402774.2
2647						1.1	2647							577403.7	4402744.3
2648						1.4	2648					577341.2	4402722.2	577402.1	4402714.2
2649						1.7	2649					577326.0	4402694.0	577400.4	4402684.2
2650						2.0	2650					577311.8	4402665.6	577398.9	4402654.1

Table B-1. High-Water Shoreline Position Change - Sandy Hook to Barnegat Inlet, New Jersey

High-Water Shoreline Position Change Rate (m/yr)						High-Water Shoreline Position (UTM Zone 18, NAD 1983)									
	1836/39 to			1855/75 to		1932/33 to		1836/39		1855/75		1932/33		1977	
Transect #	1855/75	1932/33	1977	1932/33	1977	1977	Transect #	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)	UTM-x (m)	UTM-y (m)
2651							2651					577297.0	4402637.3		
2652						2.7	2652					577280.8	4402609.2	577396.9	4402593.9
2653						3.0	2653					577264.6	4402581.0	577393.7	4402564.0
2654						3.2	2654					577251.9	4402552.5	577390.6	4402534.2
2655						3.5	2655							577388.0	4402504.3
2656						4.2	2656					577205.1	4402498.1	577385.9	4402474.3
2657						5.0	2657					577165.9	4402473.0	577382.9	4402444.4
2658							2658							577380.9	4402414.4

APPENDIX C. WAVE TRANSFORMATIONAL NUMERICAL MODELING

C1. EXISTING CONDITIONS WAVE TRANSFORMATION RESULTS

This section presents existing conditions numerical wave transformation modeling results. Results are presented for all simulations.

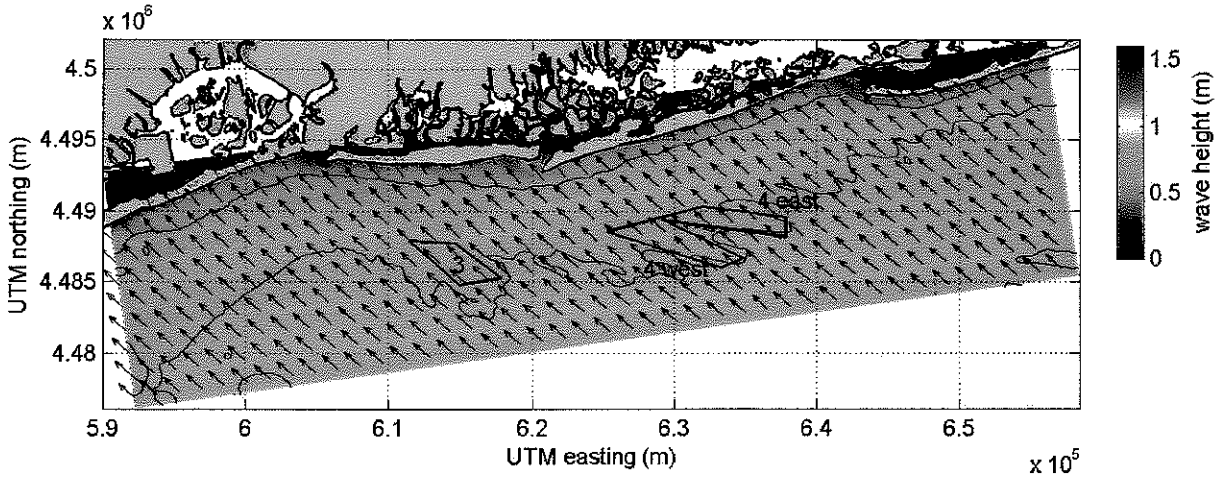

Figure C1-1. STWAVE model output for southwestern Long Island borrow sites (3, 4 west, and 4 east), wave Case 1A (H_s = 0.7 m, T_{peak} = 4.0 sec, θ_{peak} = 92 deg). Color contours indicate wave height, and vectors show mean direction of wave propagation.

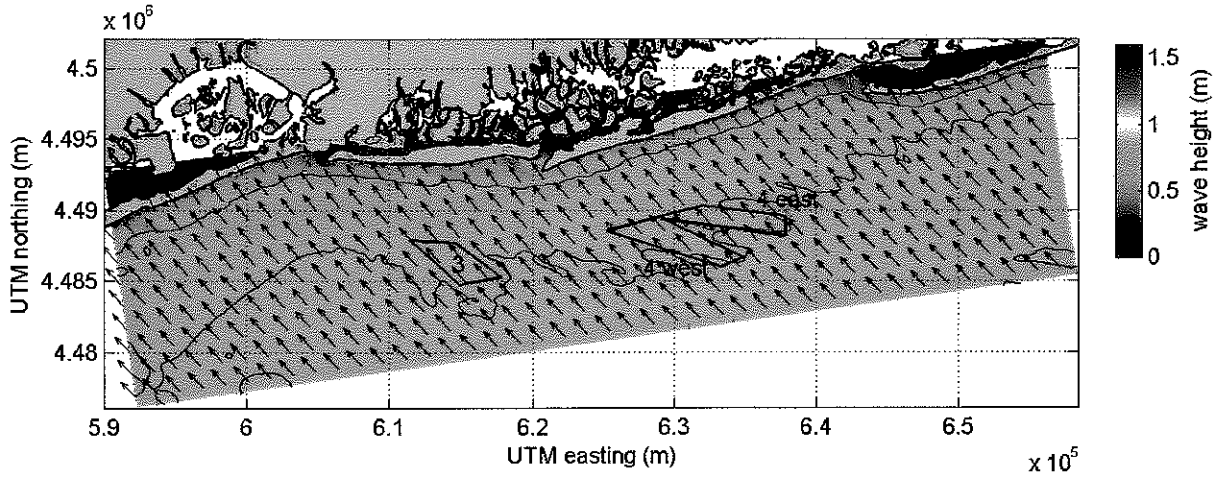

Figure C1-2. STWAVE model output for southwestern Long Island borrow sites (3, 4 west, and 4 east), wave Case 2A (H_s = 0.8 m, T_{peak} = 4.0 sec, θ_{peak} = 112 deg). Color contours indicate wave height, and vectors show mean direction of wave propagation.

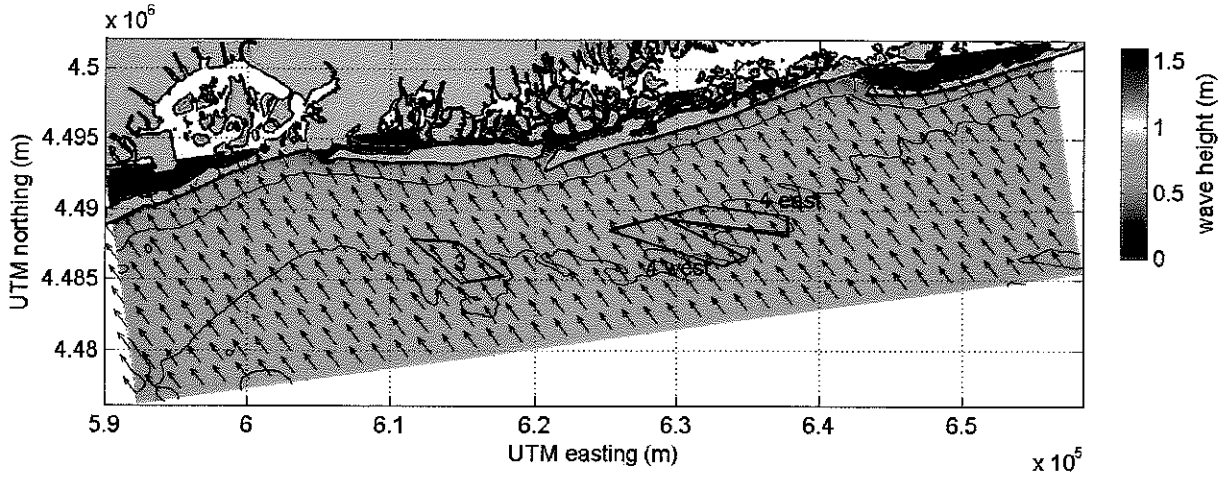

Figure C1-3. STWAVE model output for southwestern Long Island borrow sites (3, 4 west, and 4 east), wave Case 3A (H_s = 0.8 m, T_{peak} = 4.0 sec, θ_{peak} = 112 deg). Color contours indicate wave height, and vectors show mean direction of wave propagation.

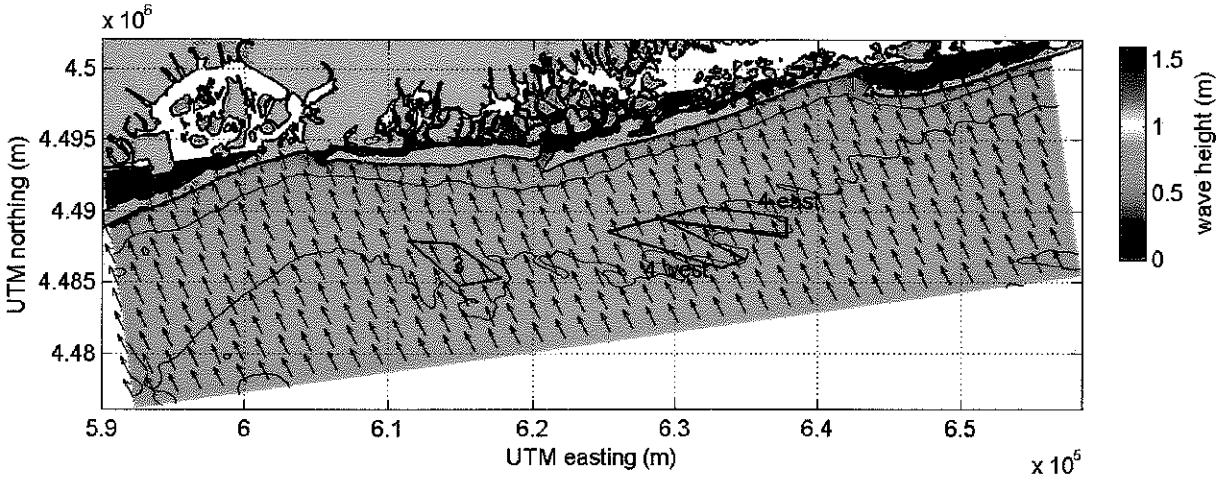

Figure C1-4. STWAVE model output for southwestern Long Island borrow sites (3, 4 west, and 4 east), wave Case 4A (H_s = 0.7 m, T_{peak} = 4.0 sec, θ_{peak} = 137 deg). Color contours indicate wave height, and vectors show mean direction of wave propagation.

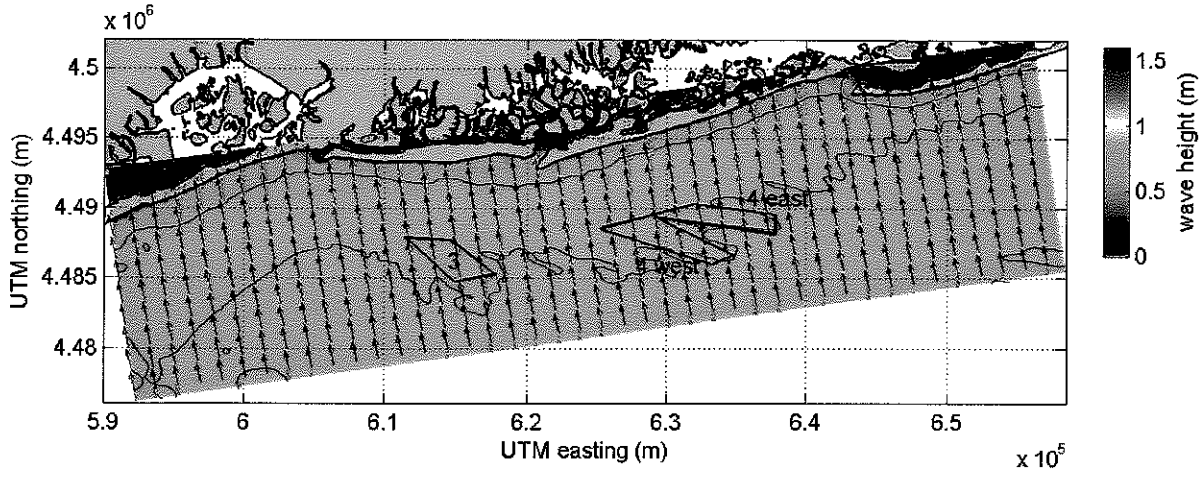

Figure C1-5. STWAVE model output for southwestern Long Island borrow sites (3, 4 west, and 4 east), wave Case 5A (H_s = 0.8 m, T_{peak} = 4.0 sec, θ_{peak} = 157 deg). Color contours indicate wave height, and vectors show mean direction of wave propagation.

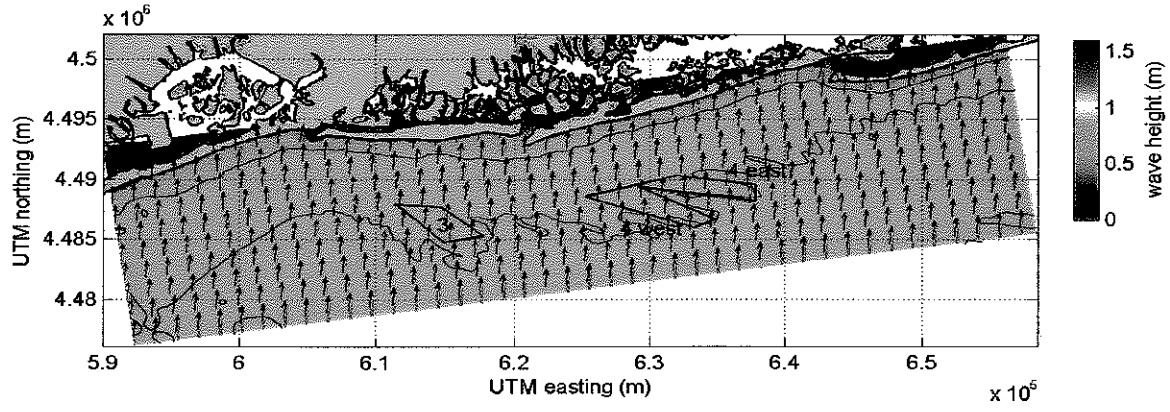

Figure C1-6. STWAVE model output for southwestern Long Island borrow sites (3, 4 west, and 4 east), wave Case 6A (H_s = 0.8 m, T_{peak} = 4.0 sec, θ_{peak} = 162 deg). Color contours indicate wave height, and vectors show mean direction of wave propagation.

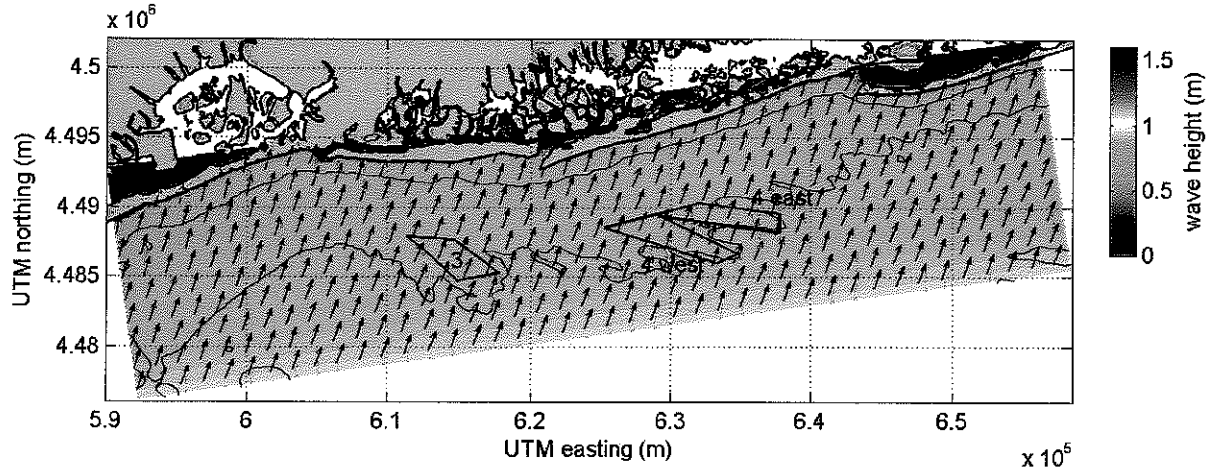

Figure C1-7. STWAVE model output for southwestern Long Island borrow sites (3, 4 west, and 4 east), wave Case 7A (H_s = 1.0 m, T_{peak} = 4.0 sec, θ_{peak} = 182 deg). Color contours indicate wave height, and vectors show mean direction of wave propagation.

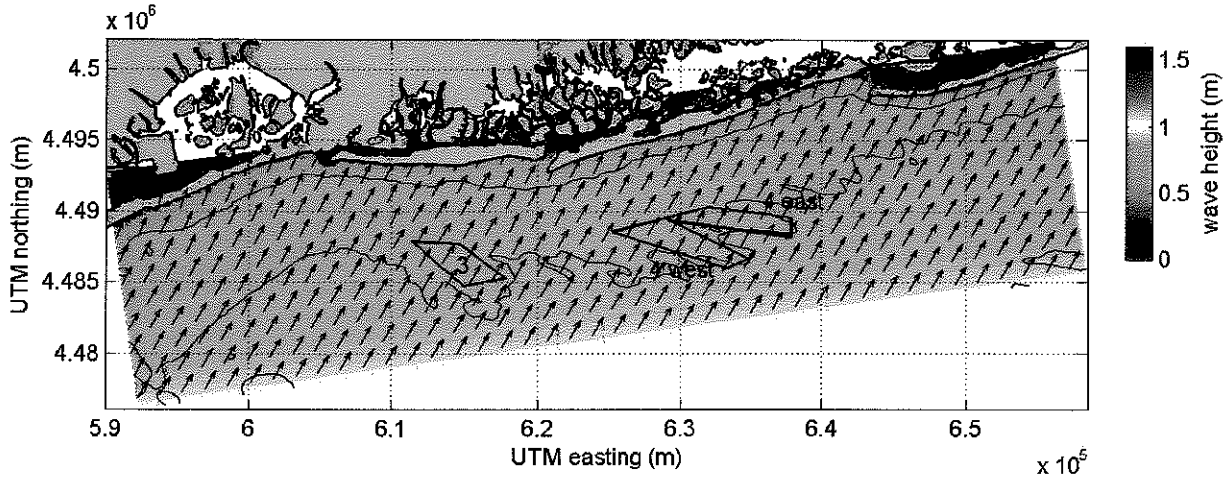

Figure C1-8. STWAVE model output for southwestern Long Island borrow sites (3, 4 west, and 4 east), wave Case 8A (H_s = 1.0 m, T_{peak} = 4.0 sec, θ_{peak} = 202 deg). Color contours indicate wave height, and vectors show mean direction of wave propagation.

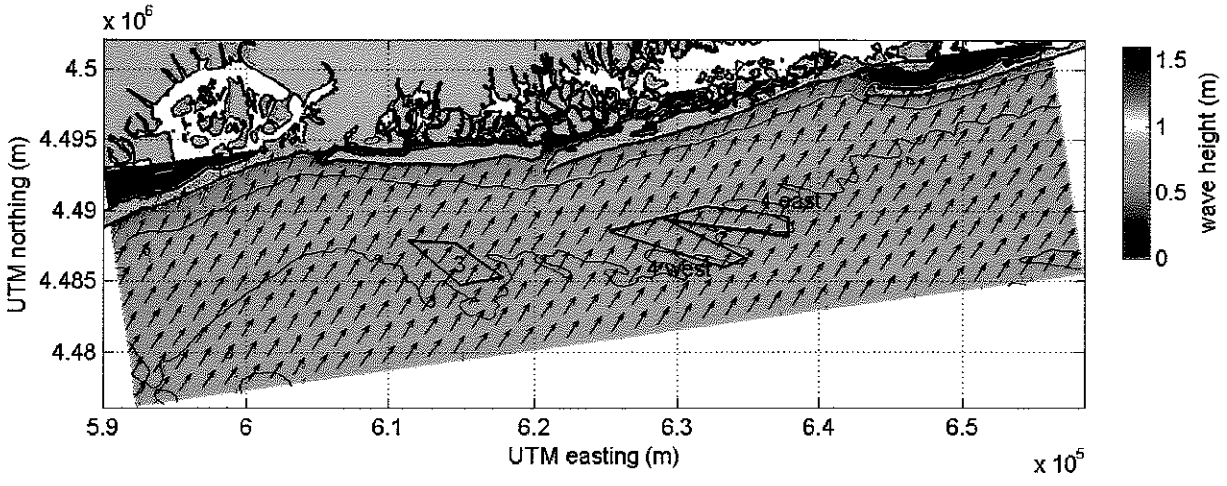

Figure C1-9. STWAVE model output for southwestern Long Island borrow sites (3, 4 west, and 4 east), wave Case 9A (H_s = 0.7 m, T_{peak} = 4.0 sec, θ_{peak} = 227 deg). Color contours indicate wave height, and vectors show mean direction of wave propagation.

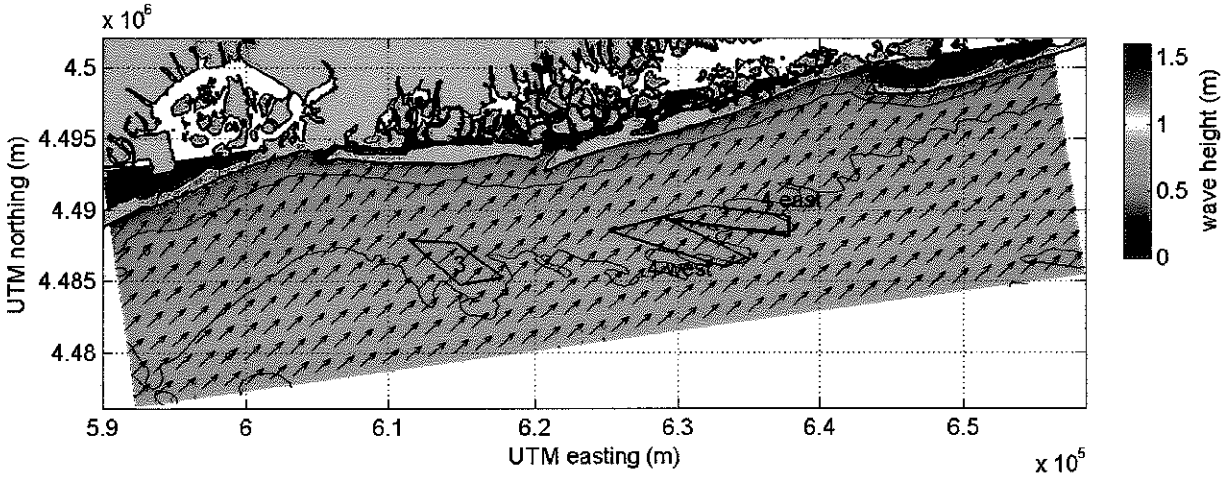

Figure C1-10. STWAVE model output for southwestern Long Island borrow sites (3, 4 west, and 4 east), wave Case 10A (H_s = 0.7 m, T_{peak} = 4.0 sec, θ_{peak} = 247deg). Color contours indicate wave height, and vectors show mean direction of wave propagation.

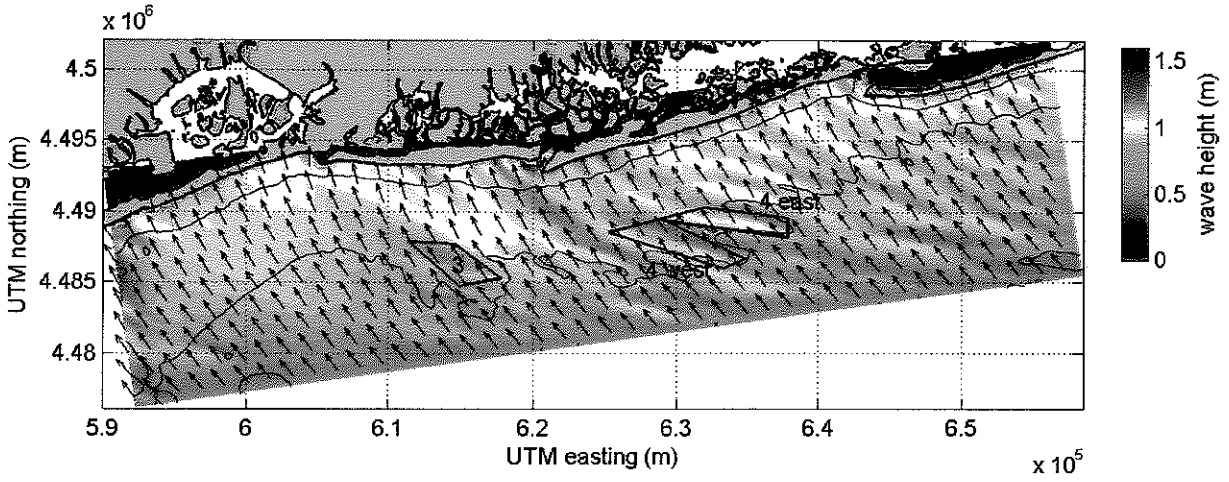

Figure C1-11. STWAVE model output for southwestern Long Island borrow sites (3, 4 west, and 4 east), wave Case 11A (H_s = 1.3 m, T_{peak} = 9.1 sec, θ_{peak} = 112 deg). Color contours indicate wave height, and vectors show mean direction of wave propagation.

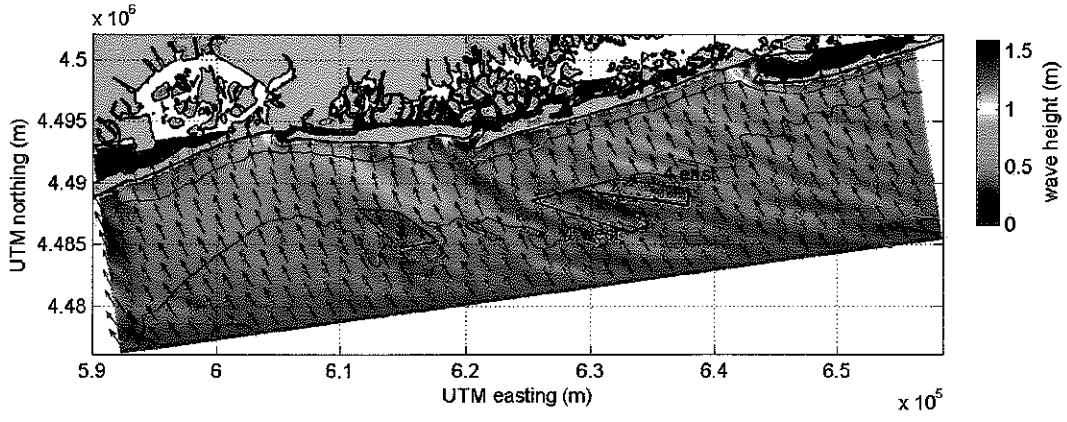

Figure C1-12. STWAVE model output for southwestern Long Island borrow sites (3, 4 west, and 4 east), wave Case 12A (H_s = 1.4 m, T_{peak} = 9.1 sec, θ_{peak} = 117 deg). Color contours indicate wave height, and vectors show mean direction of wave propagation.

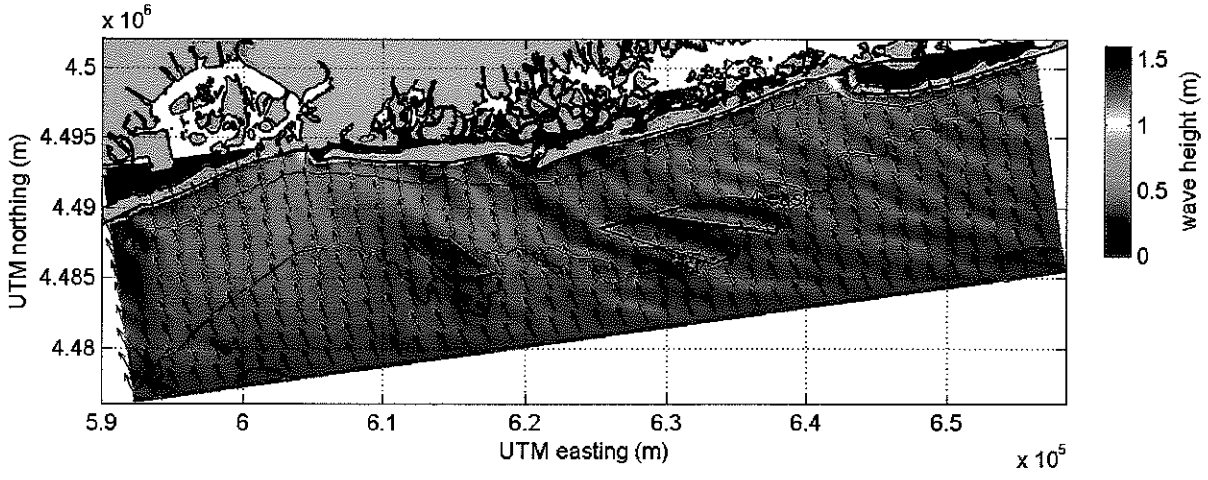

Figure C1-13. STWAVE model output for southwestern Long Island borrow sites (3, 4 west, and 4 east), wave Case 13A (H_s = 1.4 m, T_{peak} = 9.1 sec, θ_{peak} = 137 deg). Color contours indicate wave height, and vectors show mean direction of wave propagation.

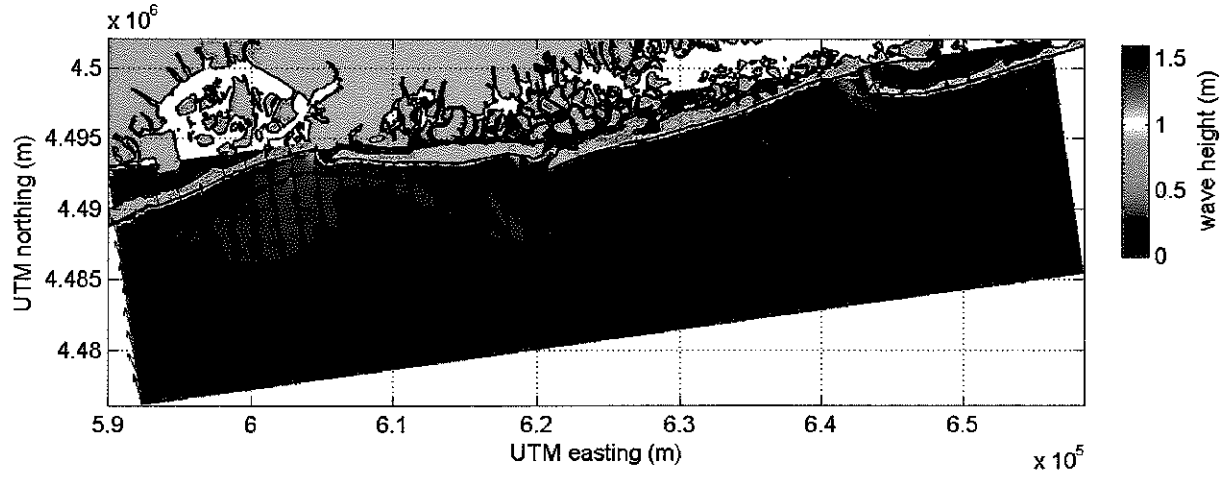

Figure C1-14. STWAVE model output for southwestern Long Island borrow sites (3, 4 west, and 4 east), wave Case 14A (H_s = 1.6 m, T_{peak} = 9.1 sec, θ_{peak} = 137 deg). Color contours indicate wave height, and vectors show mean direction of wave propagation.

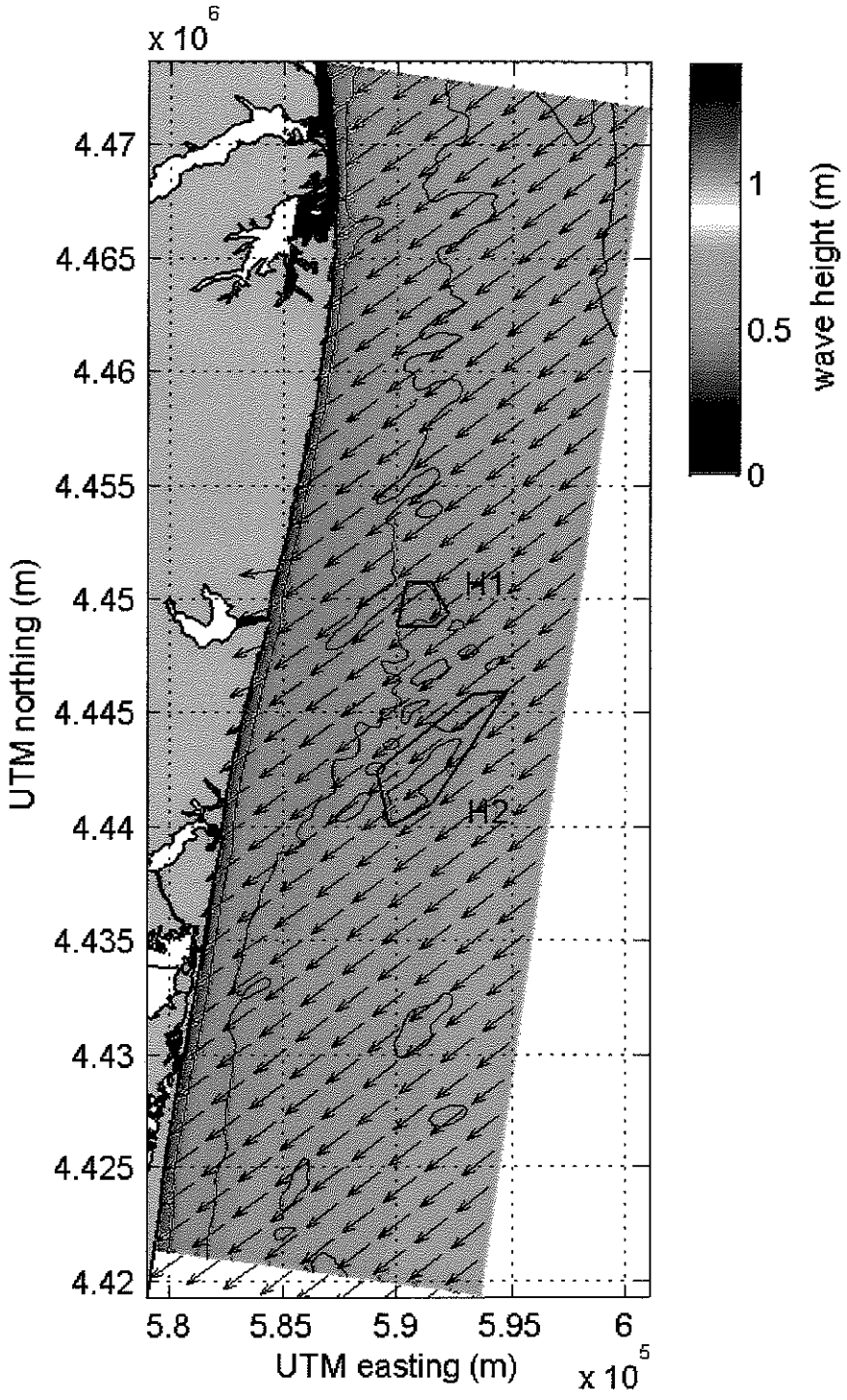

Figure C1-15. STWAVE model output for northeastern New Jersey borrow sites (H1 and H2), wave Case 1B (H_s = 0.6 m, T_{peak} = 4.0 sec, θ_{peak} = 13 deg). Color contours indicate wave height, and vectors show mean direction of wave propagation.

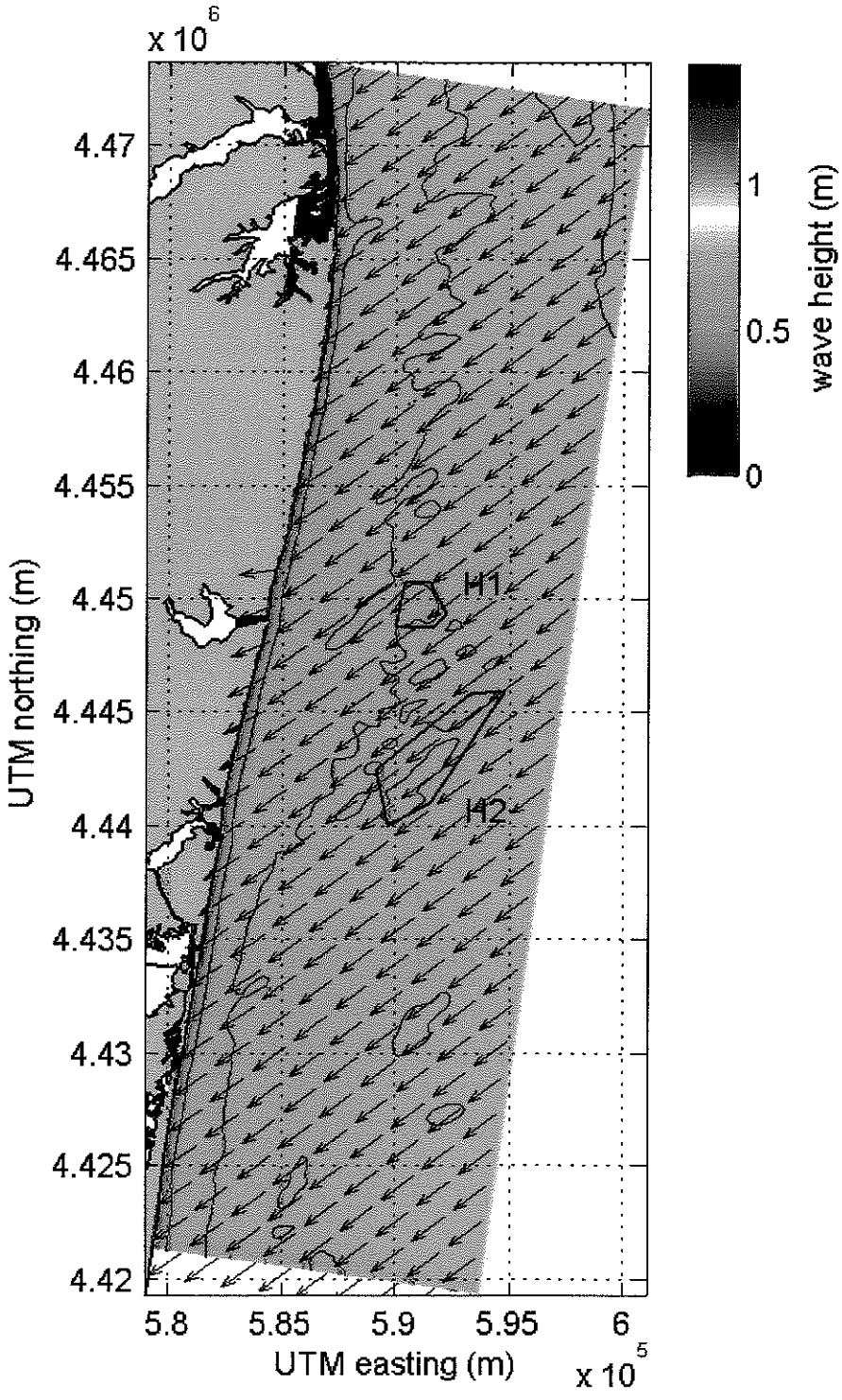

Figure C1-16. STWAVE model output for northeastern New Jersey borrow sites (H1 and H2), wave Case 2B (H_s = 0.8 m, T_{peak} = 4.0 sec, θ_{peak} = 23 deg). Color contours indicate wave height, and vectors show mean direction of wave propagation.

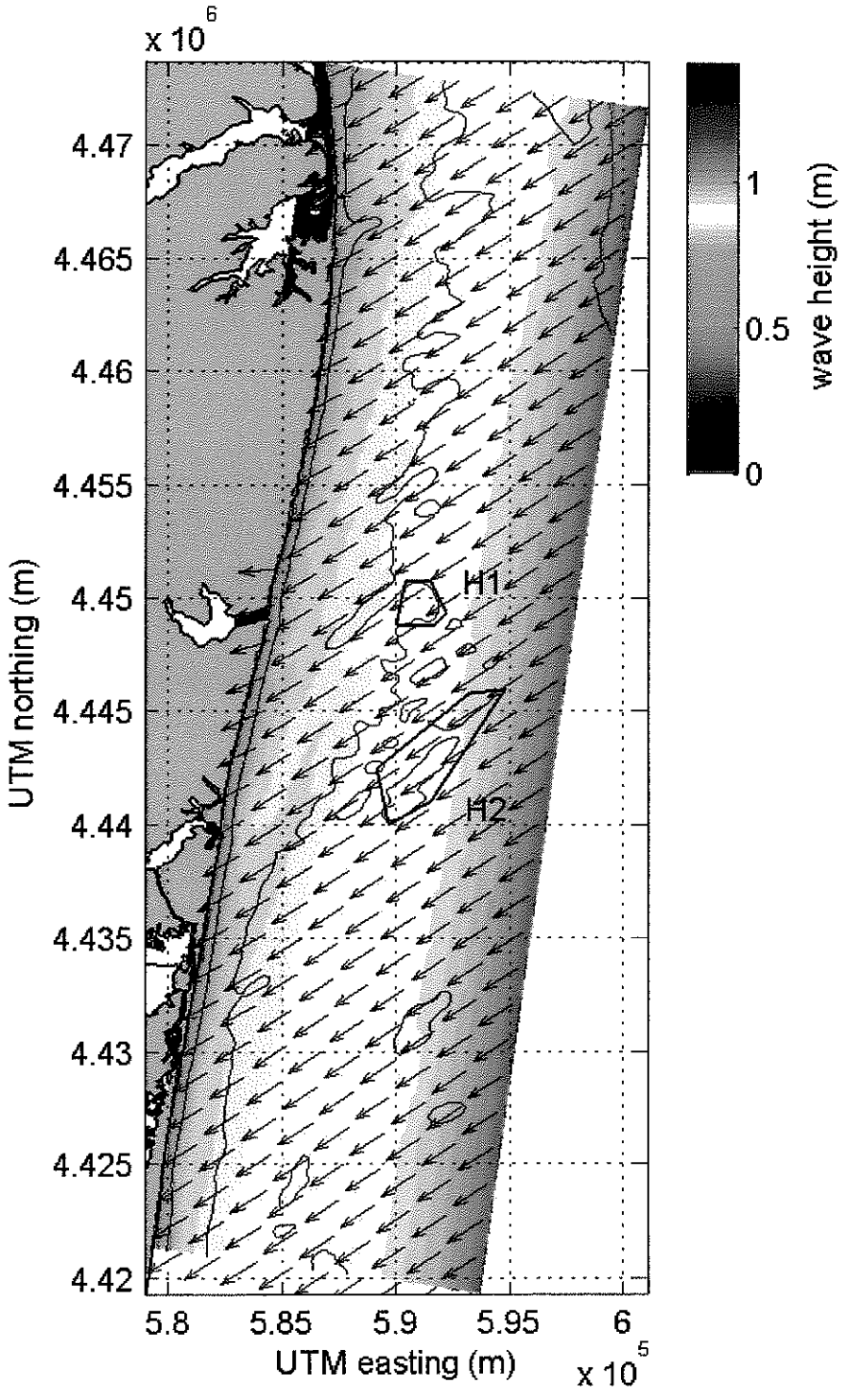

Figure C1-17. STWAVE model output for northeastern New Jersey borrow sites (H1 and H2), wave Case 3B (H_s = 1.1 m, T_{peak} = 4.0 sec, θ_{peak} = 43 deg). Color contours indicate wave height, and vectors show mean direction of wave propagation.

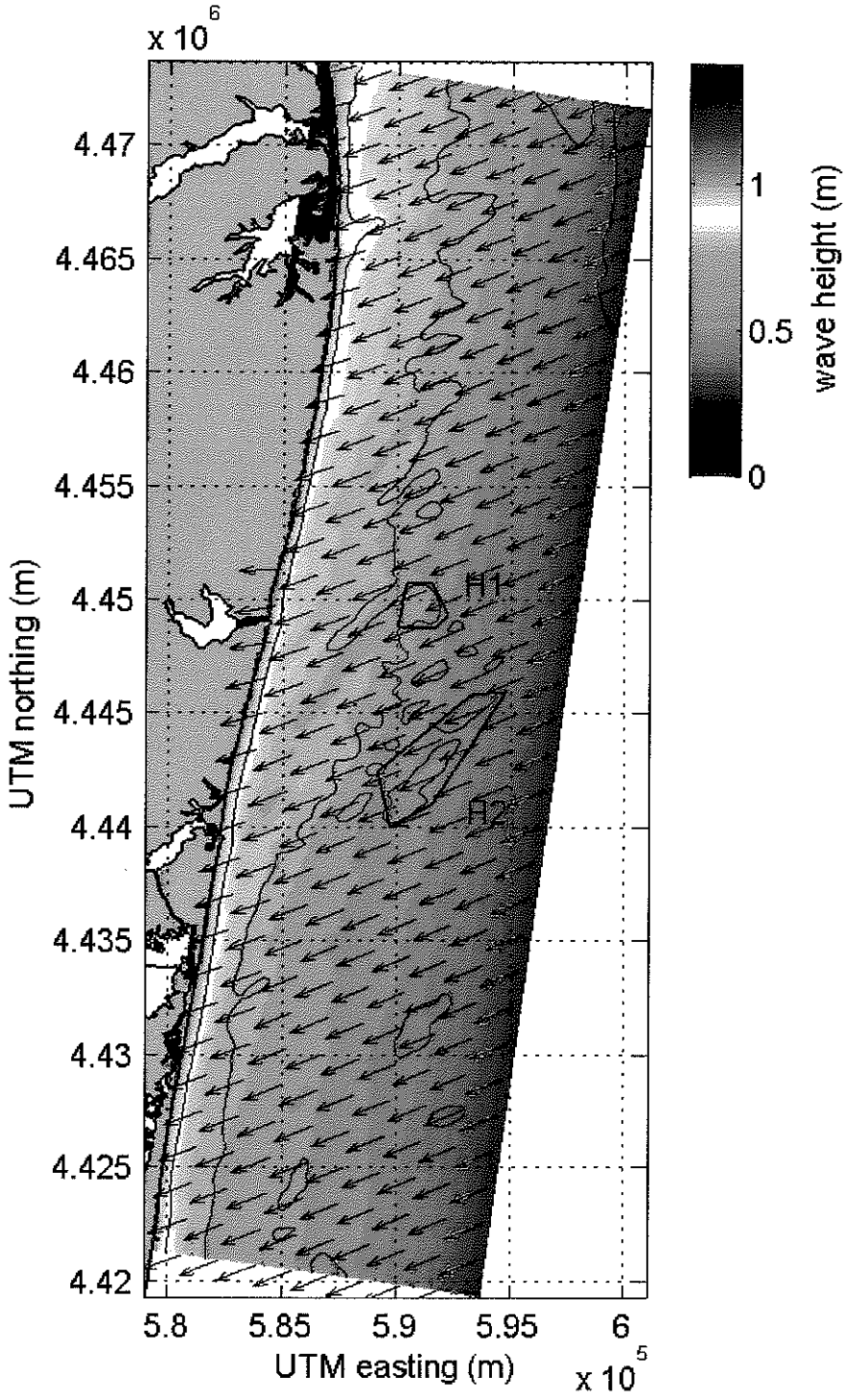

Figure C1-18. STWAVE model output for northeastern New Jersey borrow sites (H1 and H2), wave Case 4B (H_s = 1.3 m, T_{peak} = 4.0 sec, θ_{peak} = 68 deg). Color contours indicate wave height, and vectors show mean direction of wave propagation.

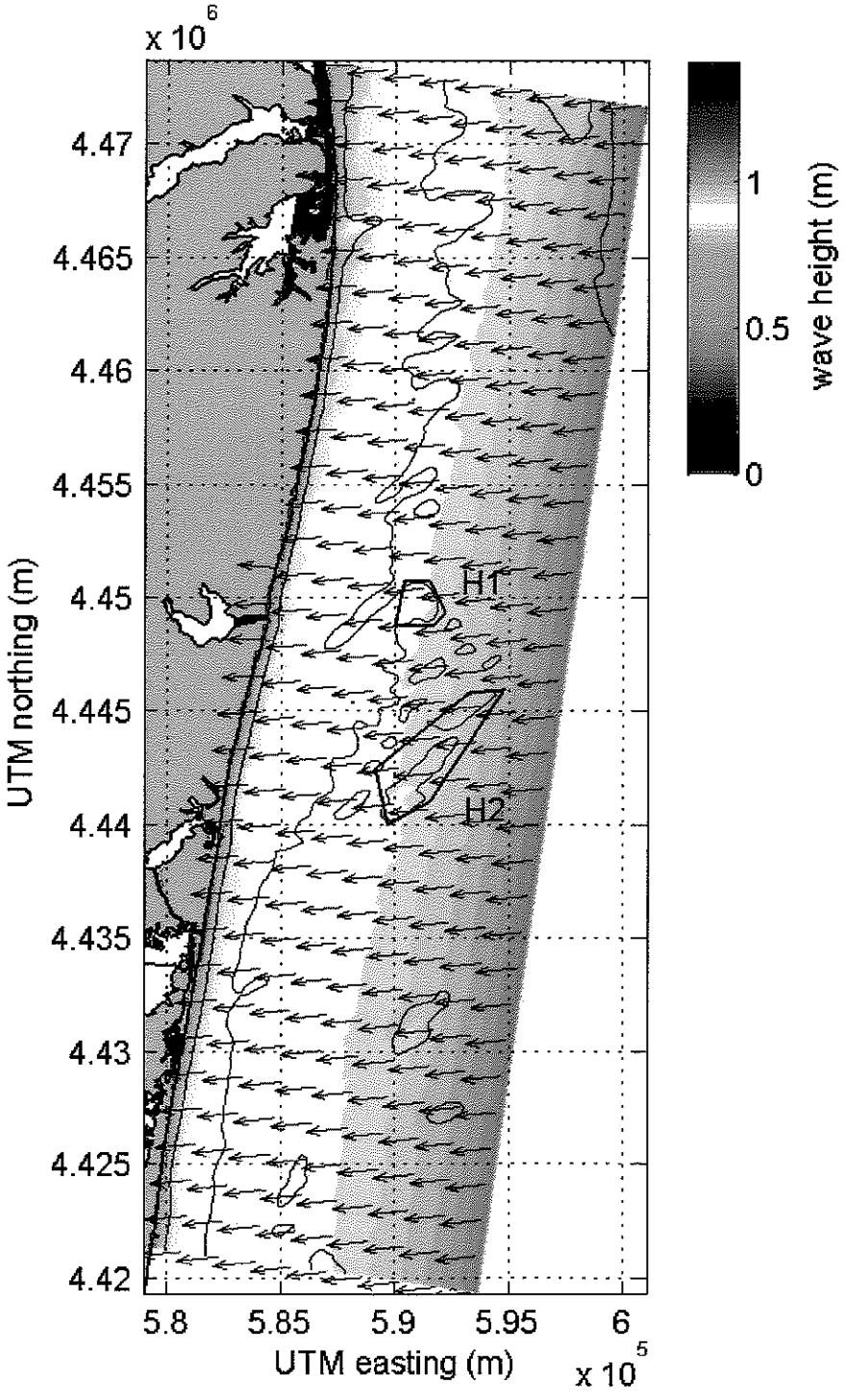

Figure C1-19. STWAVE model output for northeastern New Jersey borrow sites (H1 and H2), wave Case 5B (H_s = 1.1 m, T_{peak} = 4.0 sec, θ_{peak} = 88 deg). Color contours indicate wave height, and vectors show mean direction of wave propagation.

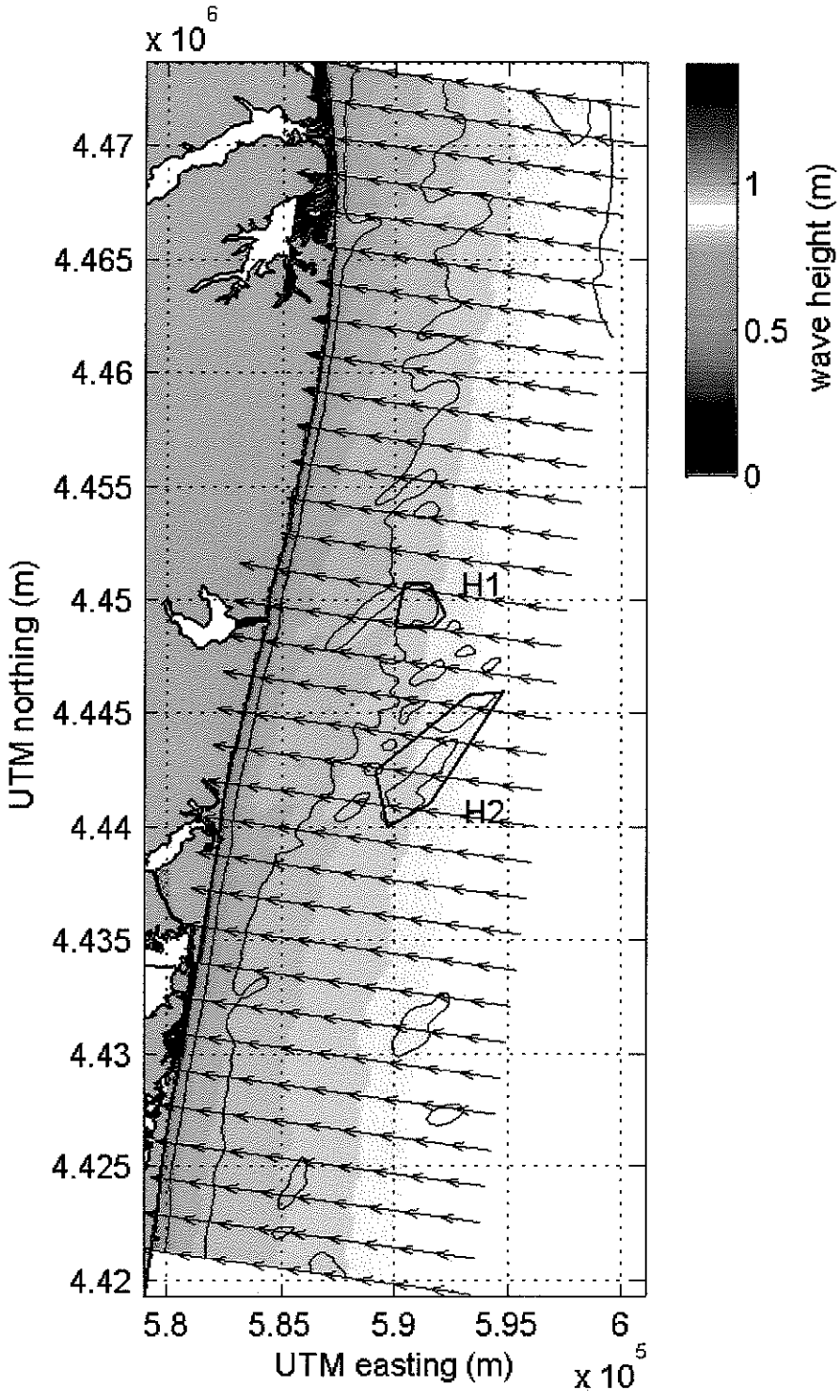

Figure C1-20. STWAVE model output for northeastern New Jersey borrow sites (H1 and H2), wave Case 6B (H_s = 0.9 m, T_{peak} = 4.0 sec, θ_{peak} = 93 deg). Color contours indicate wave height, and vectors show mean direction of wave propagation.

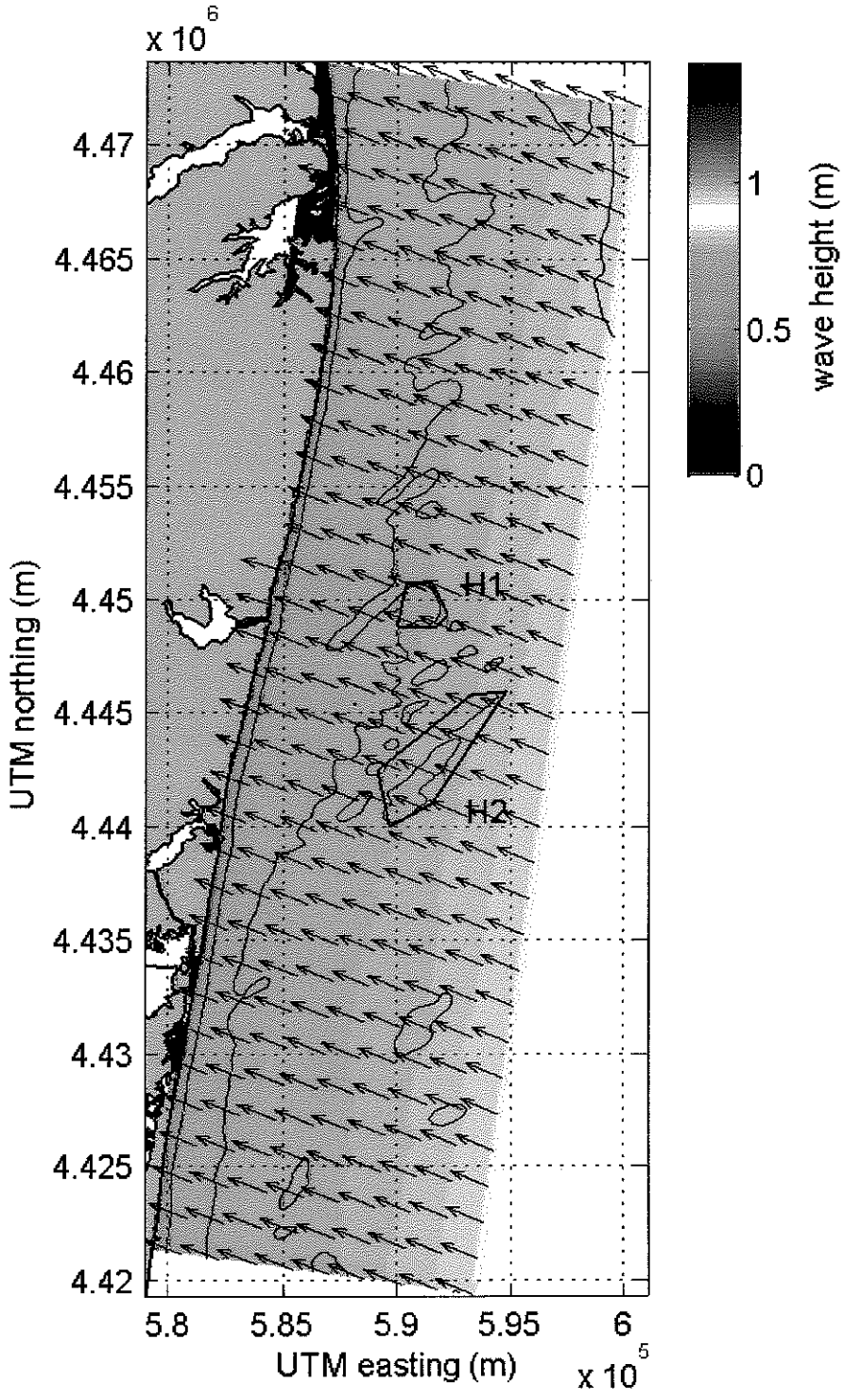

Figure C1-21. STWAVE model output for northeastern New Jersey borrow sites (H1 and H2), wave Case 7B (H_s = 0.8 m, T_{peak} = 4.0 sec, θ_{peak} = 113 deg). Color contours indicate wave height, and vectors show mean direction of wave propagation.

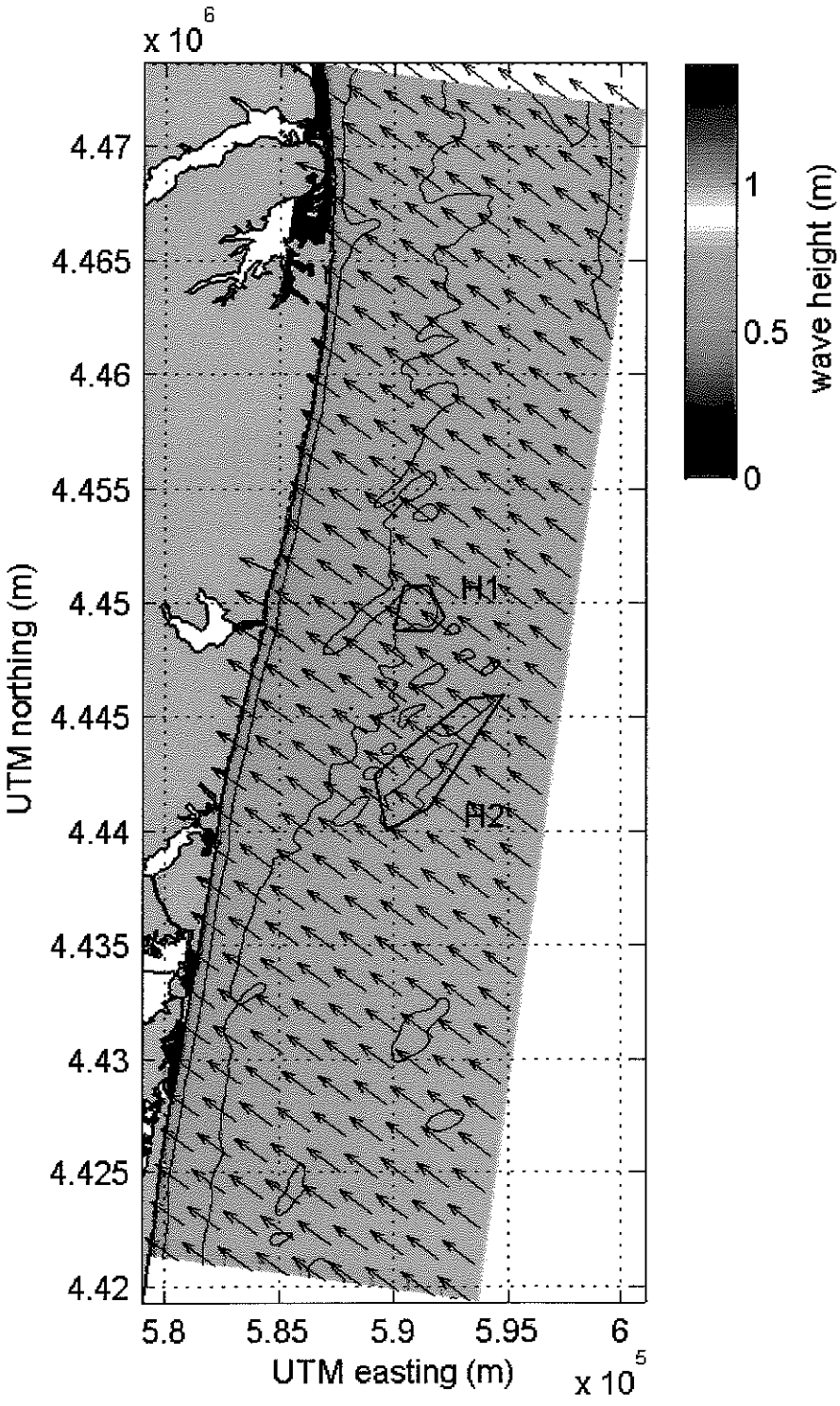

Figure C1-22. STWAVE model output for northeastern New Jersey borrow sites (H1 and H2), wave Case 8B (H_s = 0.8 m, T_{peak} = 4.0 sec, θ_{peak} = 133 deg). Color contours indicate wave height, and vectors show mean direction of wave propagation.

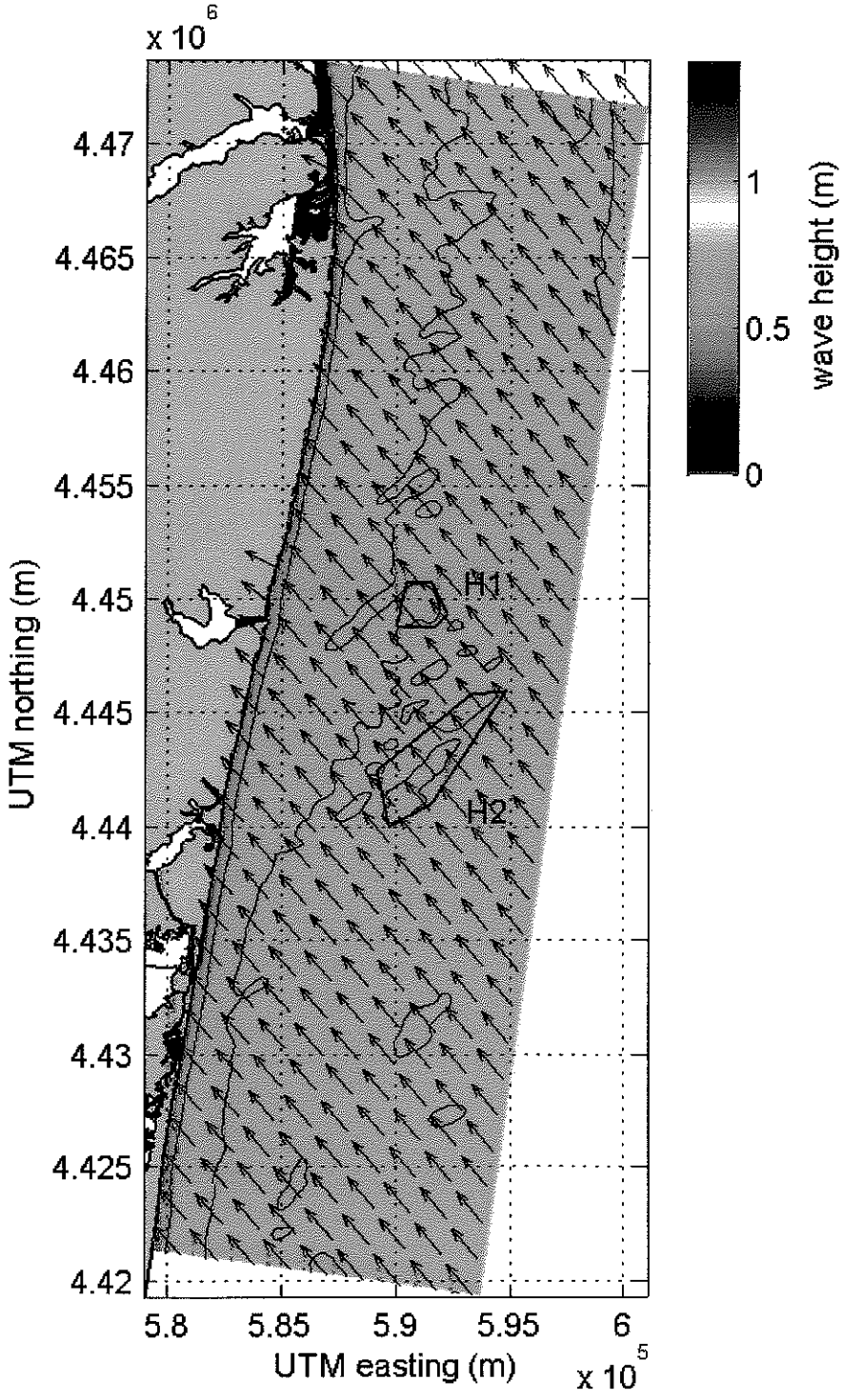

Figure C1-23. STWAVE model output for northeastern New Jersey borrow sites (H1 and H2), wave Case 9B (H_s = 0.7 m, T_{peak} = 4.0 sec, θ_{peak} = 158 deg). Color contours indicate wave height, and vectors show mean direction of wave propagation.

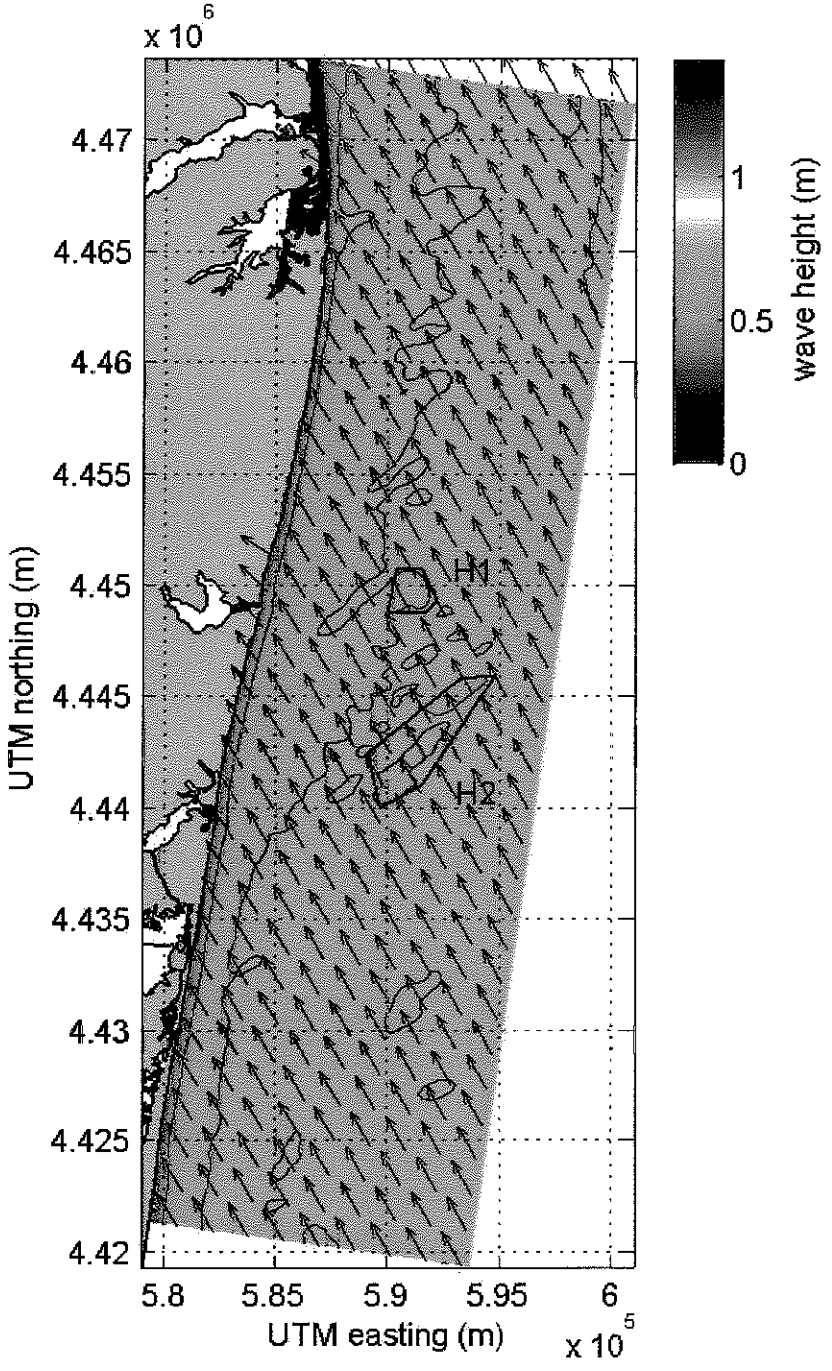

Figure C1-24. STWAVE model output for northeastern New Jersey borrow sites (H1 and H2), wave Case 10B (H_s = 0.7m, T_{peak} = 4.0 sec, θ_{peak} = 158 deg). Color contours indicate wave height, and vectors show mean direction of wave propagation.

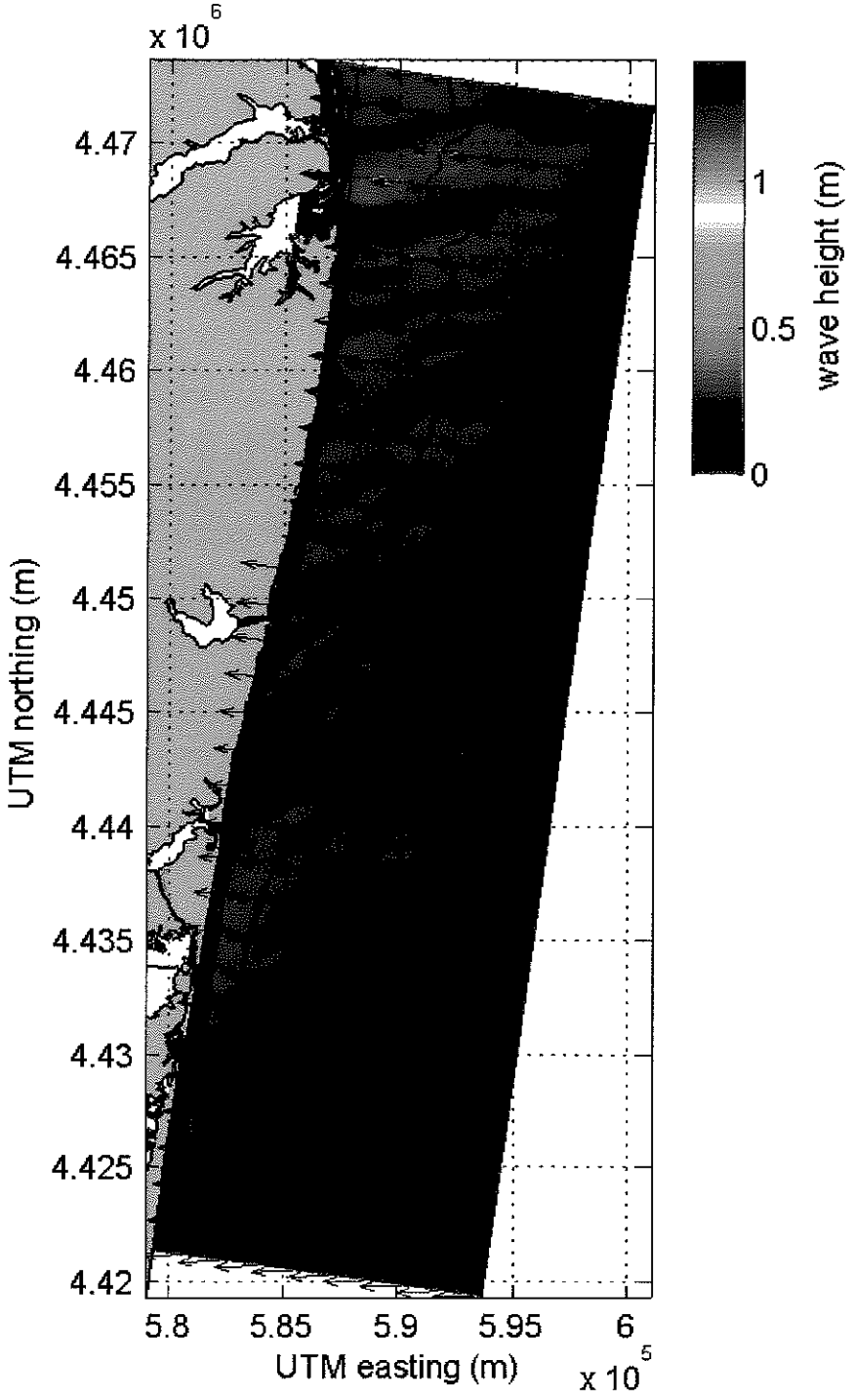

Figure C1-25. STWAVE model output for northeastern New Jersey borrow sites (H1 and H2), wave Case 11B (H_s = 1.3 m, T_{peak} = 9.1 sec, θ_{peak} = 88 deg). Color contours indicate wave height, and vectors show mean direction of wave propagation.

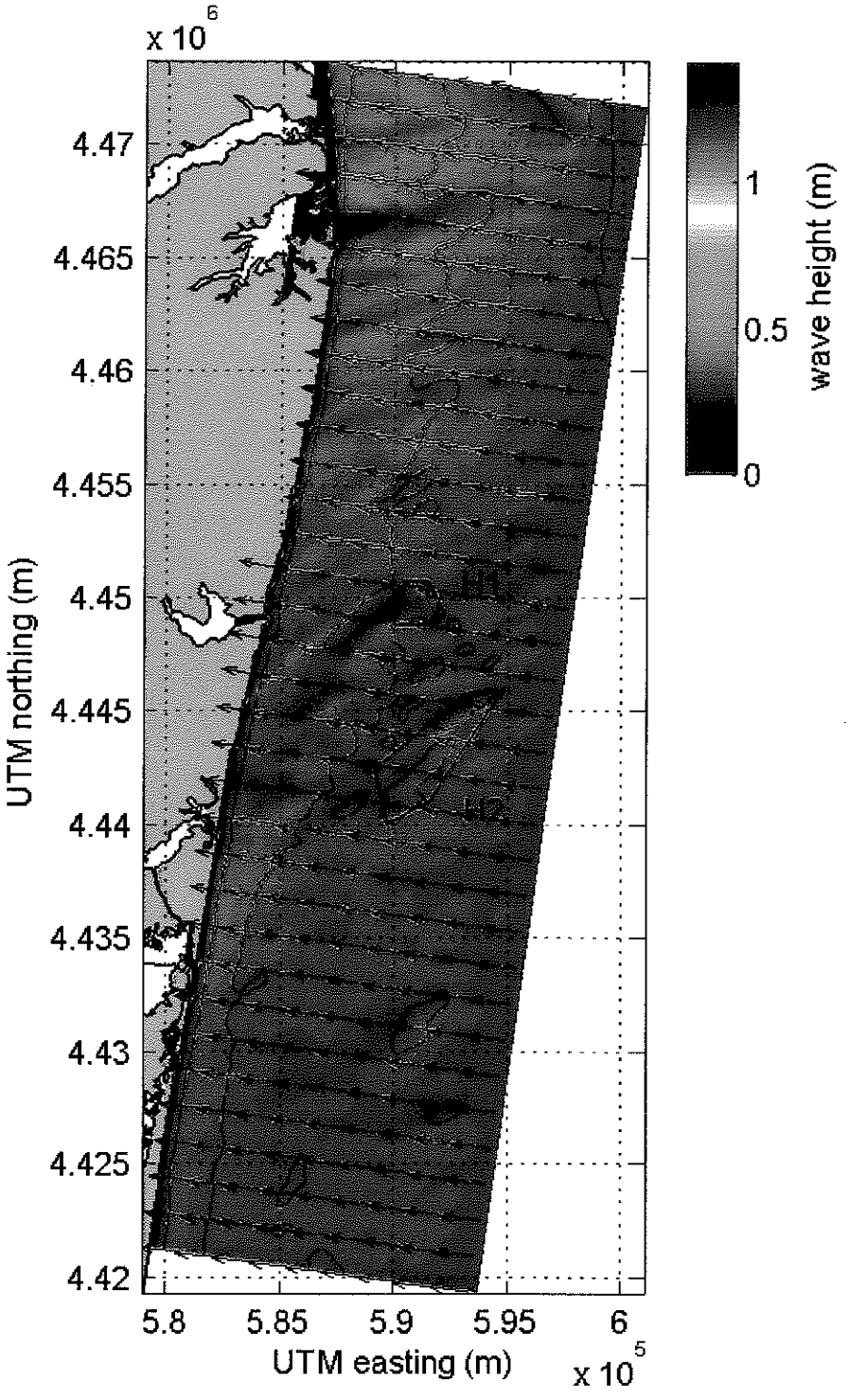

Figure C1-26. STWAVE model output for northeastern New Jersey borrow sites (H1 and H2), wave Case 12B (H_s = 1.2 m, T_{peak} = 7.7 sec, θ_{peak} = 93 deg). Color contours indicate wave height, and vectors show mean direction of wave propagation.

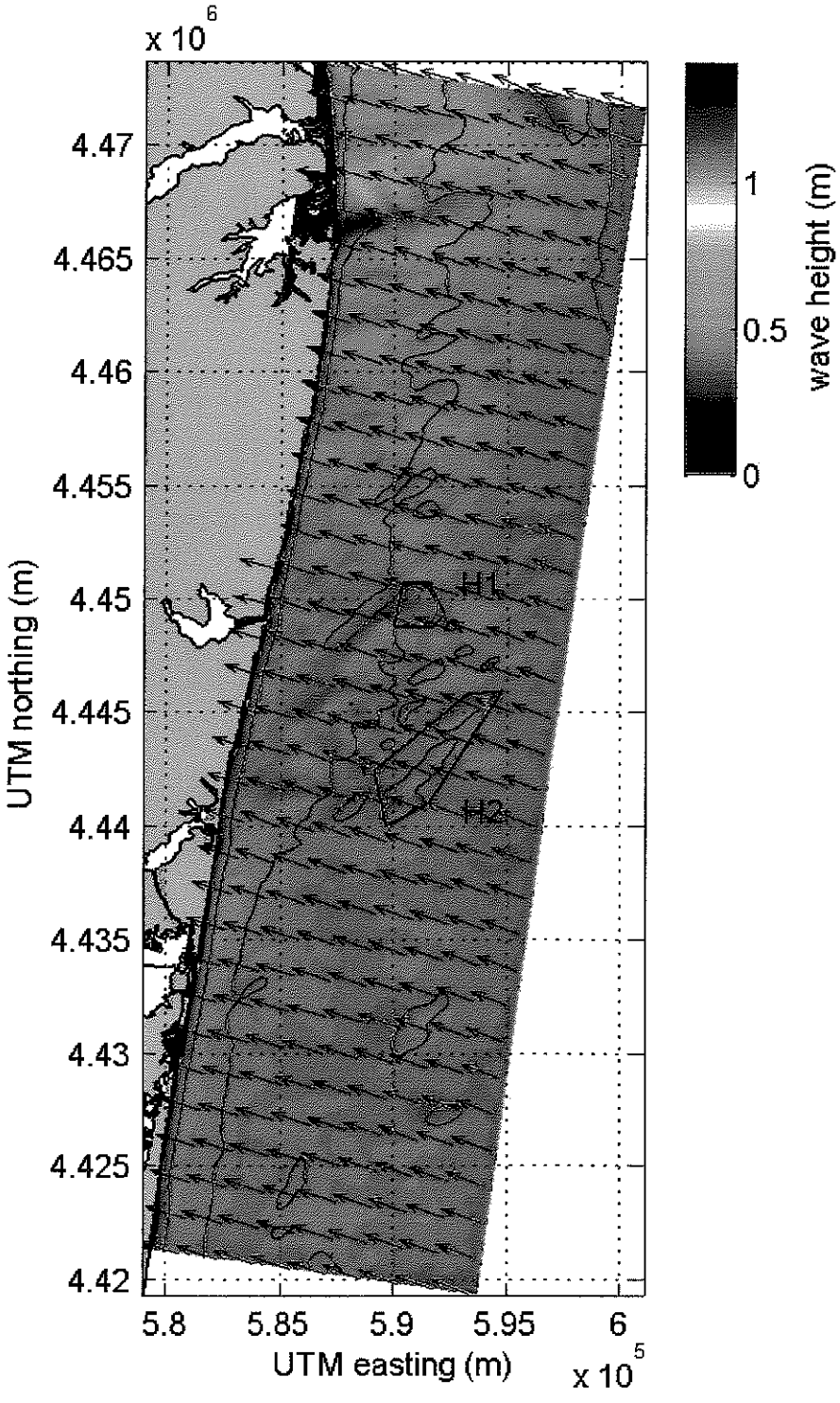

Figure C1-27. STWAVE model output for northeastern New Jersey borrow sites (H1 and H2), wave Case 13B (H_s = 1.1 m, T_{peak} = 7.7 sec, θ_{peak} = 113 deg). Color contours indicate wave height, and vectors show mean direction of wave propagation.

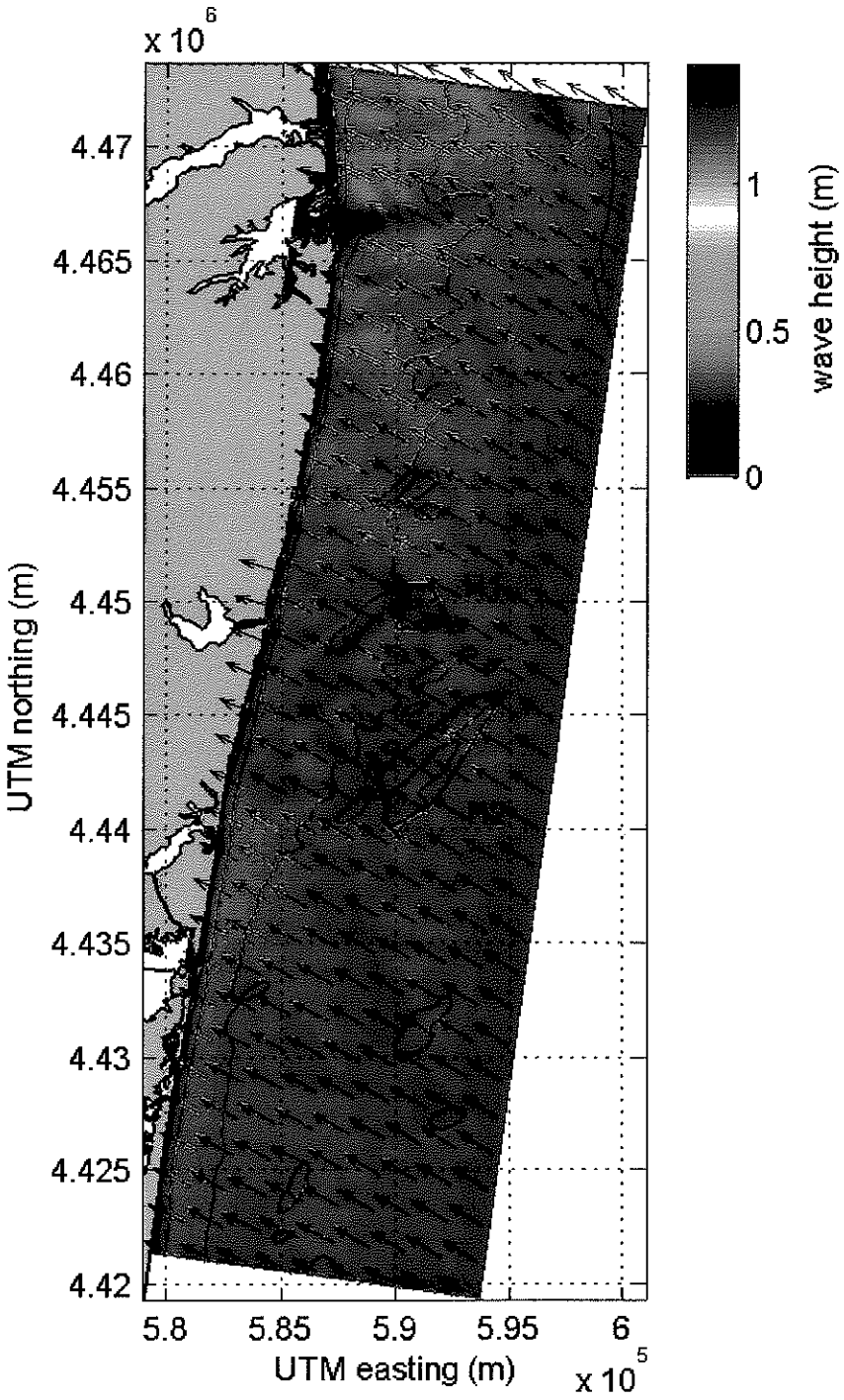

Figure C1-28. STWAVE model output for northeastern New Jersey borrow sites (H1 and H2), wave Case 14B (H_s = 1.2 m, T_{peak} = 7.7 sec, θ_{peak} = 133 deg). Color contours indicate wave height, and vectors show mean direction of wave propagation.

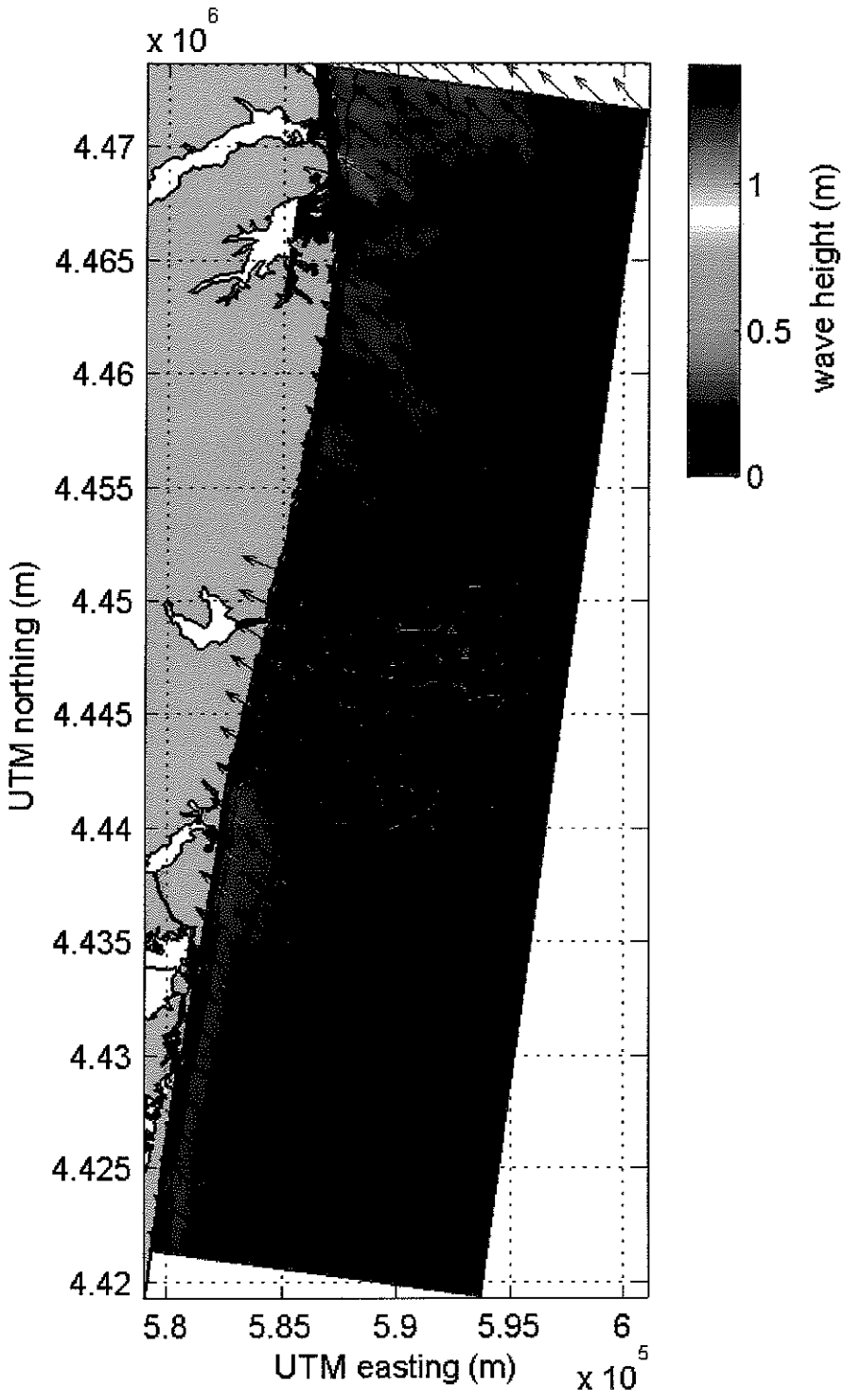

Figure C1-29. STWAVE model output for northeastern New Jersey borrow sites (H1 and H2), wave Case 15B (H_s = 1.4 m, T_{peak} = 9.1 sec, θ_{peak} = 138 deg). Color contours indicate wave height, and vectors show mean direction of wave propagation.

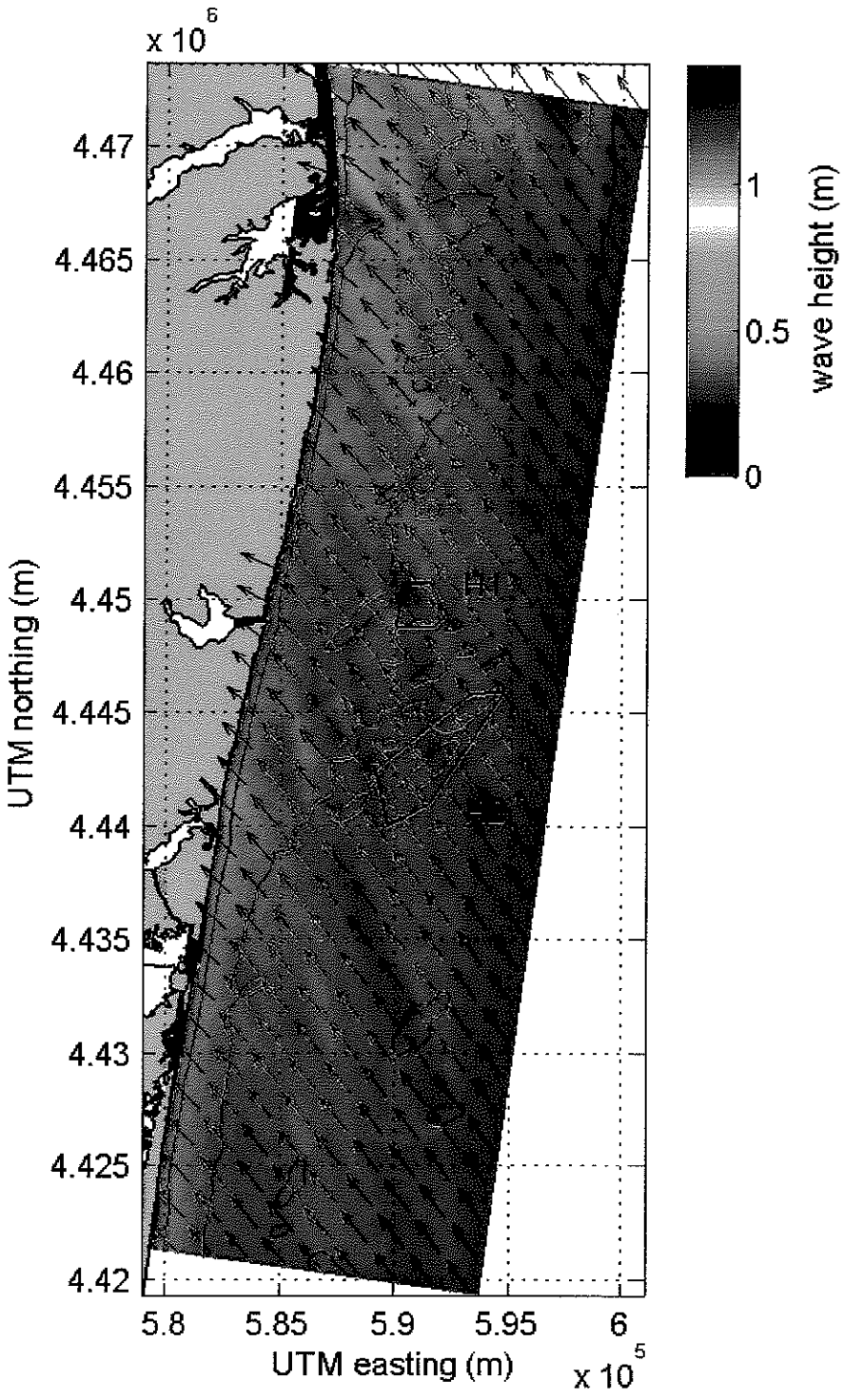

Figure C1-30. STWAVE model output for northeastern New Jersey borrow sites (H1 and H2), wave Case 16B (H_s = 1.3 m, T_{peak} = 7.7 sec, θ_{peak} = 158 deg). Color contours indicate wave height, and vectors show mean direction of wave propagation.

C2. WAVE HEIGHT DIFFERENCE PLOTS: POST-DREDGING VERSUS EXISTING CONDITIONS

This section presents wave height modifications caused by potential offshore sand mining of various proposed borrow sites. Results are presented for all simulations. For all figures, yellow shades indicate areas of increased wave height, while blue shades identify areas of decreased wave height. Solid black lines indicated depth contours, numbered solid black lines indicate proposed sand borrow sites, and the color bar on the right indicates the magnitude of modifications.

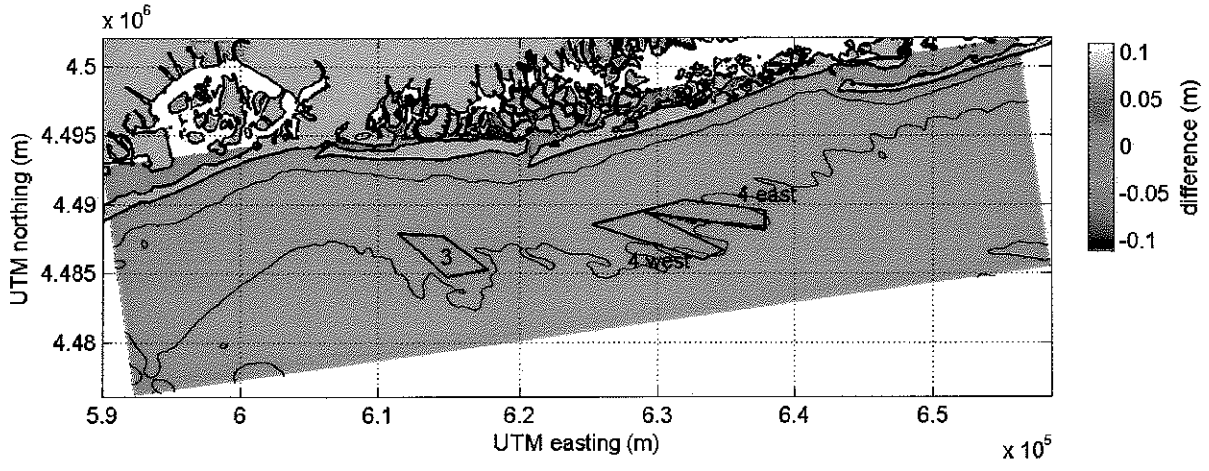

Figure C2-1. Wave height change between existing and post-dredging ($\Delta = H_{post}$-$H_{existing}$) conditions for Borrow Sites 3, 4 west, and 4 east, wave Case 1A (H_s = 0.7 m, T_{peak} = 4.0 sec, θ_{peak} = 92 deg). Color contours indicate differences in wave height.

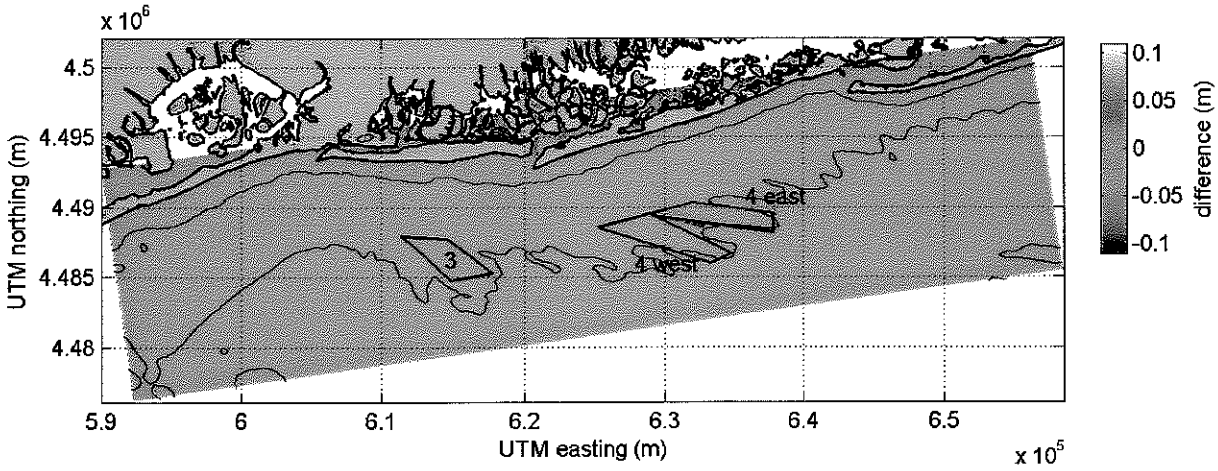

Figure C2-2. Wave height change between existing and post-dredging ($\Delta = H_{post}$-$H_{existing}$) conditions for Borrow Sites 3, 4 west, and 4 east, wave Case 2A (H_s = 0.8 m, T_{peak} = 4.0 sec, θ_{peak} = 112 deg). Color contours indicate differences in wave height.

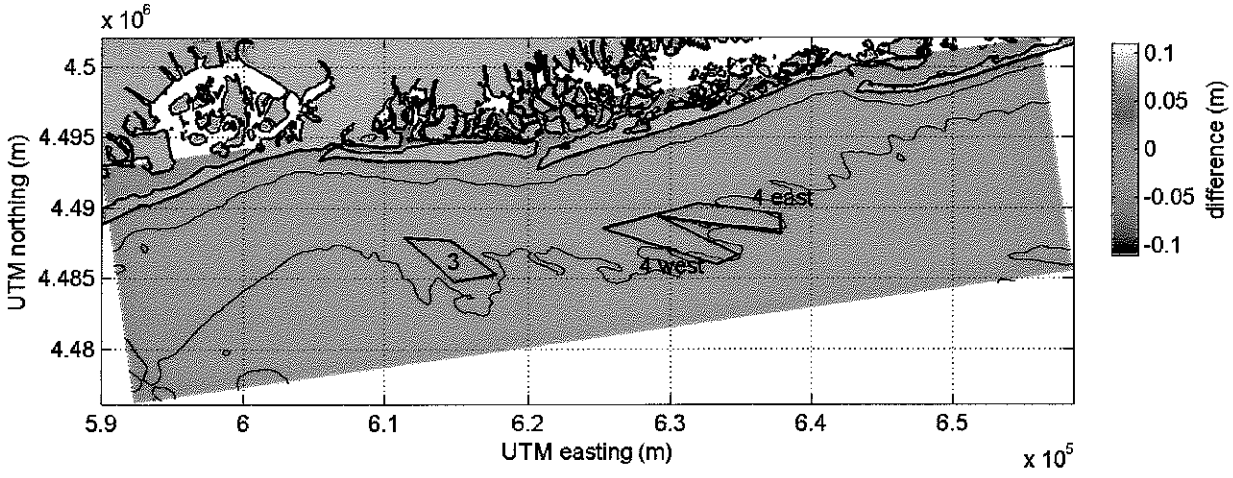

Figure C2-3. Wave height change between existing and post-dredging ($\Delta = H_{post}$-$H_{existing}$) conditions for Borrow Sites 3, 4 west, and 4 east, wave Case 3A (H_s = 0.8 m, T_{peak} = 4.0 sec, θ_{peak} = 112 deg). Color contours indicate differences in wave height.

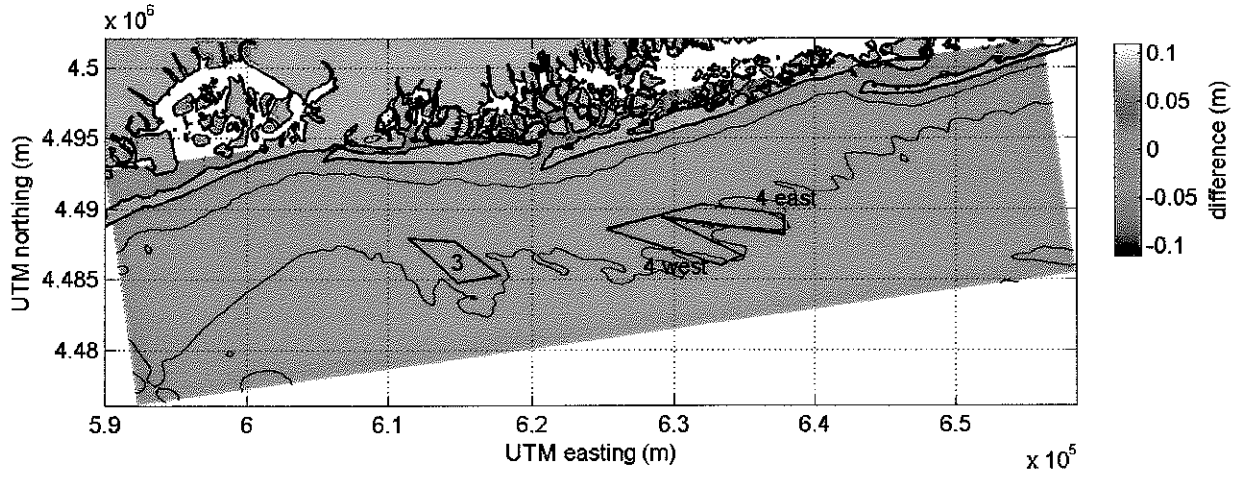

Figure C2-4. Wave height change between existing and post-dredging ($\Delta = H_{post}$-$H_{existing}$) conditions for Borrow Sites 3, 4 west, and 4 east, wave Case 4A (H_s = 0.7 m, T_{peak} = 4.0 sec, θ_{peak} = 137 deg). Color contours indicate differences in wave height.

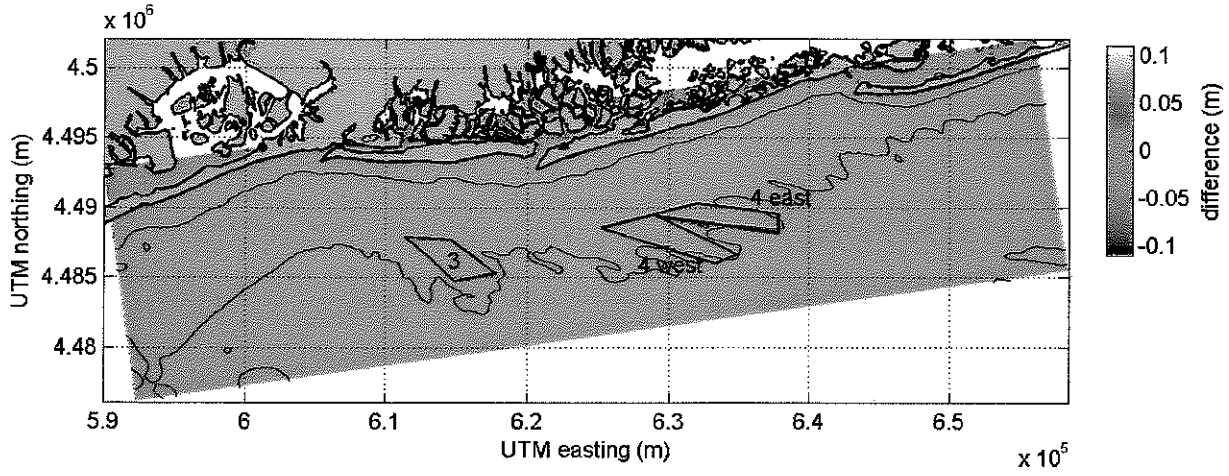

Figure C2-5. Wave height change between existing and post-dredging ($\Delta = H_{post}$-$H_{existing}$) conditions for Borrow Sites 3, 4 west, and 4 east, wave Case 5A (H_s = 0.8 m, T_{peak} = 4.0 sec, θ_{peak} = 157 deg). Color contours indicate differences in wave height.

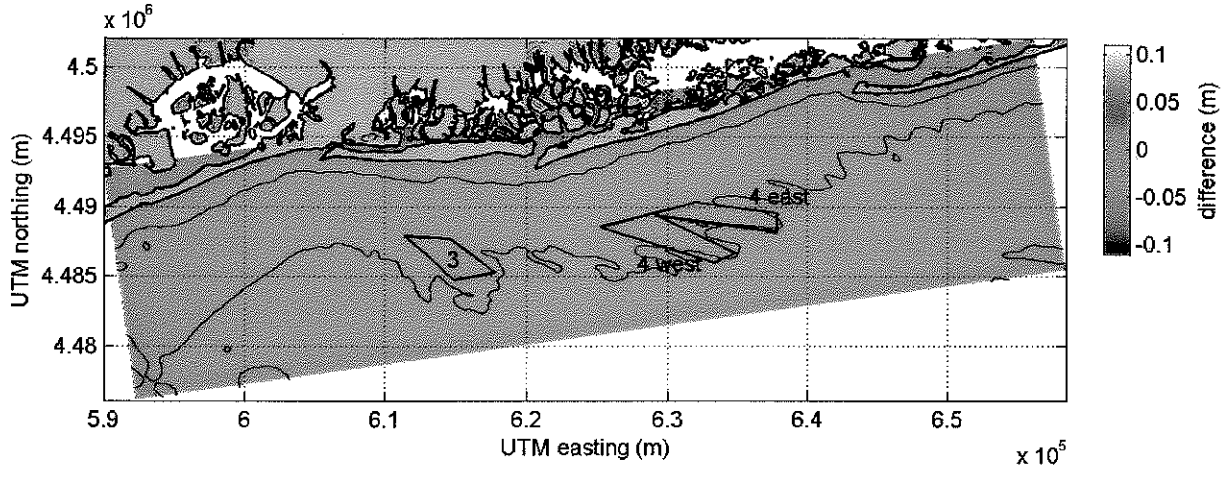

Figure C2-6. Wave height change between existing and post-dredging ($\Delta = H_{post}$-$H_{existing}$) conditions for Borrow Sites 3, 4 west, and 4 east, wave Case 6A (H_s = 0.8 m, T_{peak} = 4.0 sec, θ_{peak} = 162 deg). Color contours indicate differences in wave height.

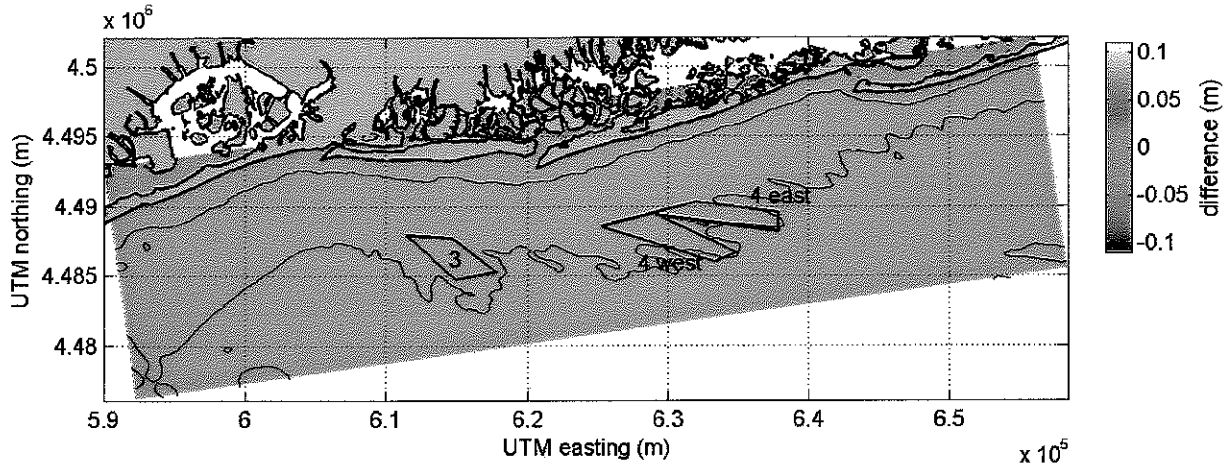

Figure C2-7. Wave height change between existing and post-dredging ($\Delta = H_{post}$-$H_{existing}$) conditions for Borrow Sites 3, 4 west, and 4 east, wave Case 7A (H_s = 1.0 m, T_{peak} = 4.0 sec, θ_{peak} = 182 deg). Color contours indicate differences in wave height.

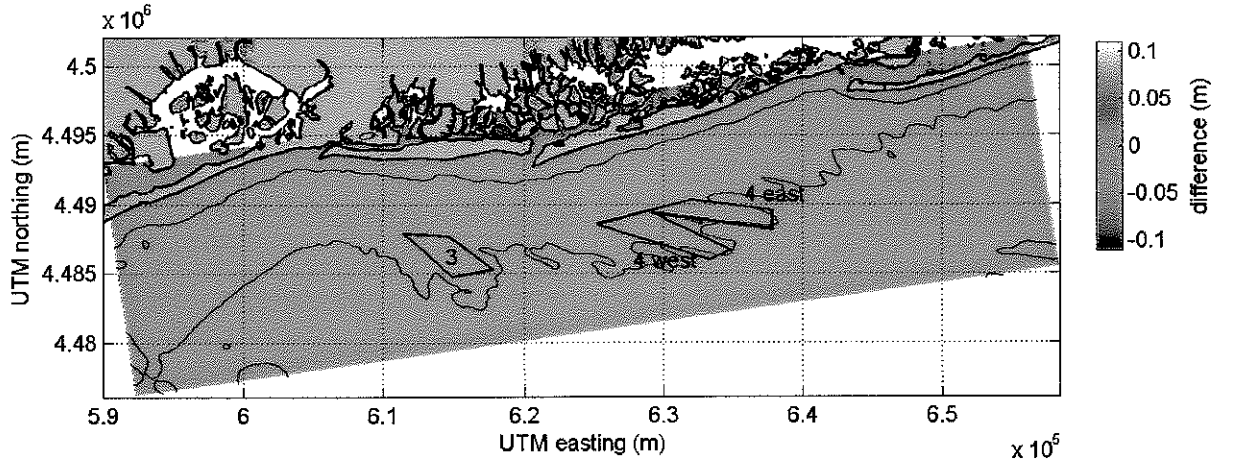

Figure C2-8. Wave height change between existing and post-dredging ($\Delta = H_{post}$-$H_{existing}$) conditions for Borrow Sites 3, 4 west, and 4 east, wave Case 8A (H_s = 1.0 m, T_{peak} = 4.0 sec, θ_{peak} = 202 deg). Color contours indicate differences in wave height.

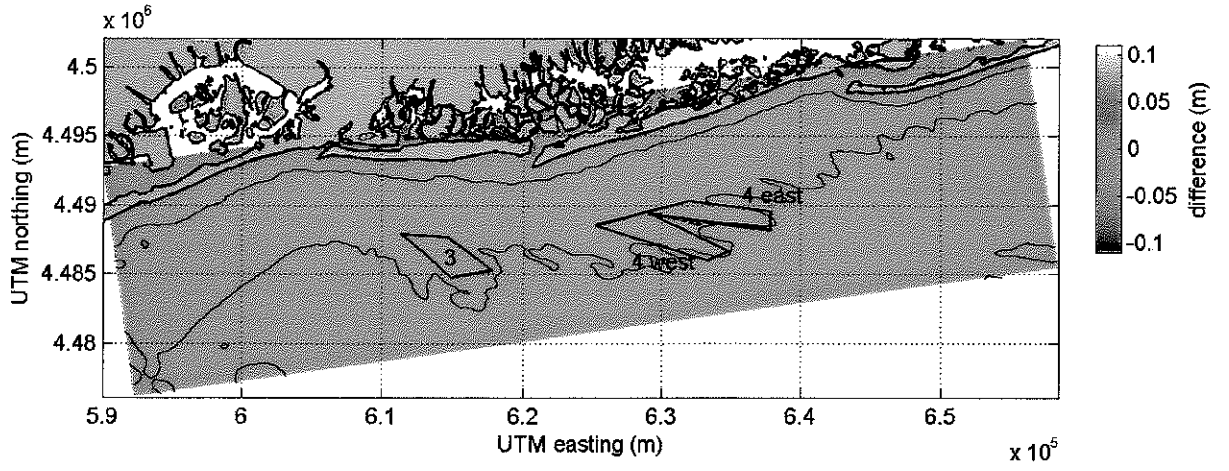

Figure C2-9. Wave height change between existing and post-dredging ($\Delta = H_{post}$-$H_{existing}$) conditions for Borrow Sites 3, 4 west, and 4 east, wave Case 9A (H_s = 0.7 m, T_{peak} = 4.0 sec, θ_{peak} = 227 deg). Color contours indicate differences in wave height.

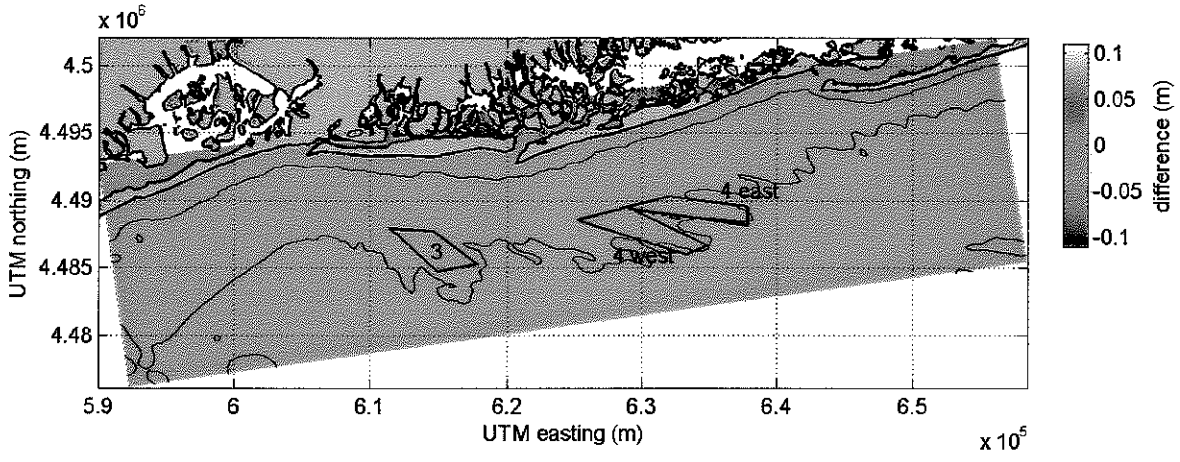

Figure C2-10. Wave height change between existing and post-dredging ($\Delta = H_{post}$-$H_{existing}$) conditions for Borrow Sites 3, 4 west, and 4 east, wave Case 10A (H_s = 0.7 m, T_{peak} = 4.0 sec, θ_{peak}=247deg). Color contours indicate differences in wave height.

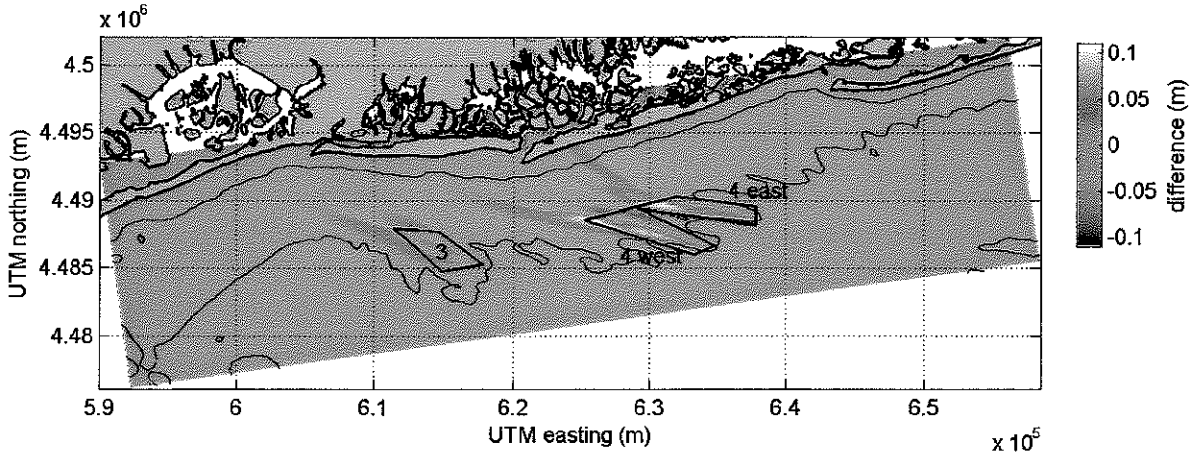

Figure C2-11. Wave height change between existing and post-dredging ($\Delta = H_{post}$-$H_{existing}$) conditions for Borrow Sites 3, 4 west, and 4 east, wave Case 11A (H_s = 1.3 m, T_{peak} = 9.1 sec, θ_{peak} = 112 deg). Color contours indicate differences in wave height.

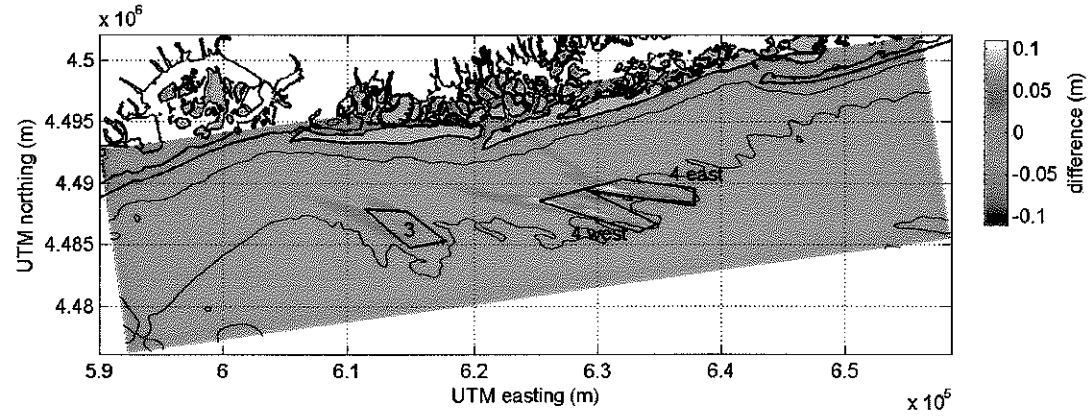

Figure C2-12. Wave height change between existing and post-dredging ($\Delta = H_{post}$-$H_{existing}$) conditions for Borrow Sites 3, 4 west, and 4 east, wave Case 12A (H_s = 1.4 m, T_{peak} = 9.1 sec, θ_{peak} = 137 deg). Color contours indicate differences in wave height.

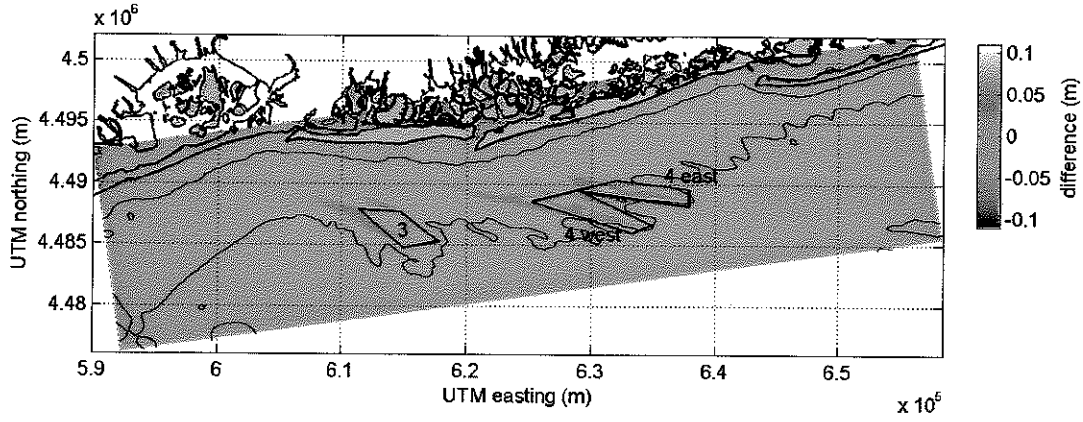

Figure C2-13. Wave height change between existing and post-dredging ($\Delta = H_{post}$-$H_{existing}$) conditions for Borrow Sites 3, 4 west, and 4 east, wave Case 13A (H_s = 1.4 m, T_{peak} = 9.1 sec, θ_{peak} = 137 deg). Color contours indicate differences in wave height.

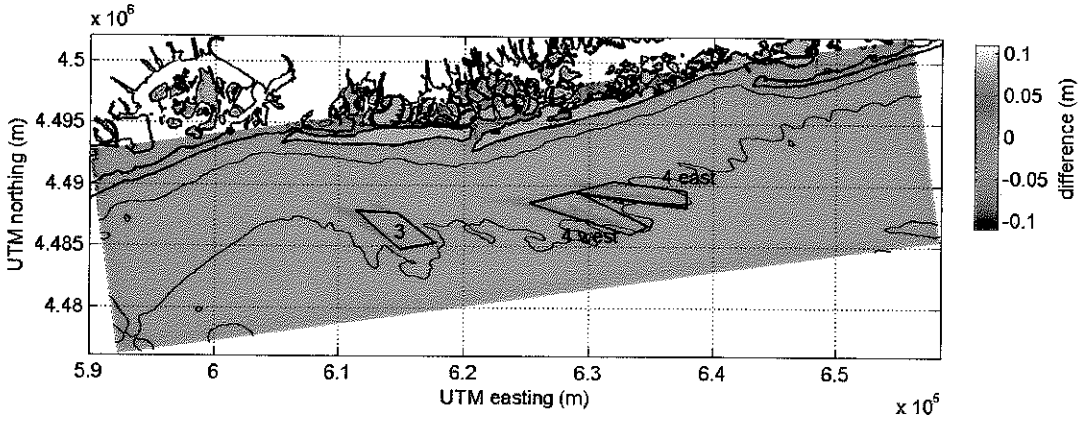

Figure C2-14. Wave height change between existing and post-dredging ($\Delta = H_{post}$-$H_{existing}$) conditions for Borrow Sites 3, 4 west, and 4 east, wave Case 14A (H_s = 1.6 m, T_{peak} = 9.1 sec, θ_{peak} = 137 deg). Color contours indicate differences in wave height.

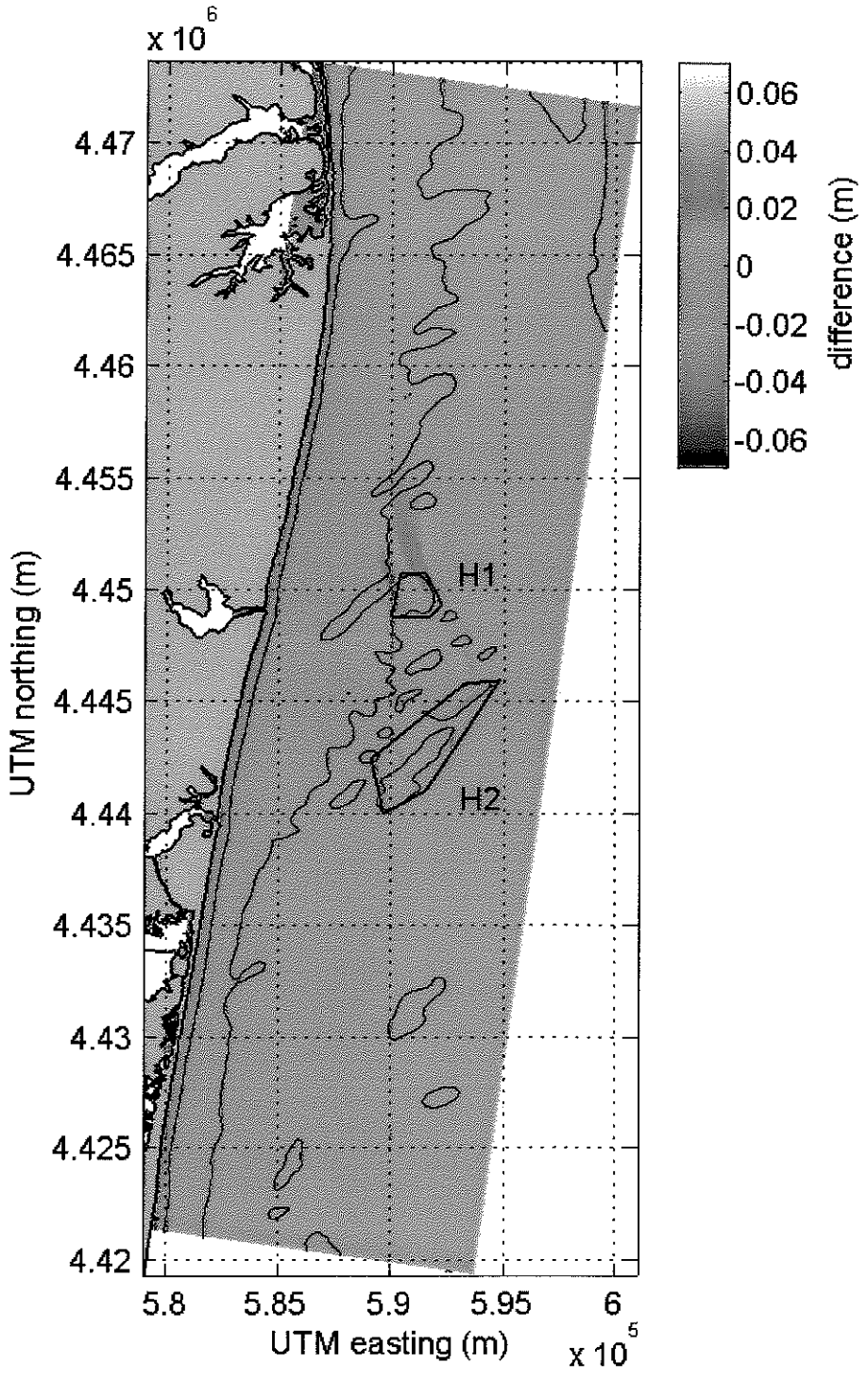

Figure C2-15. Wave height change between existing and post-dredging ($\Delta = H_{post}$-$H_{existing}$) conditions for Borrow Sites H1 and H2, wave Case 1B (H_s = 0.6 m, T_{peak} = 4.0 sec, θ_{peak} = 13 deg). Color contours indicate differences in wave height..

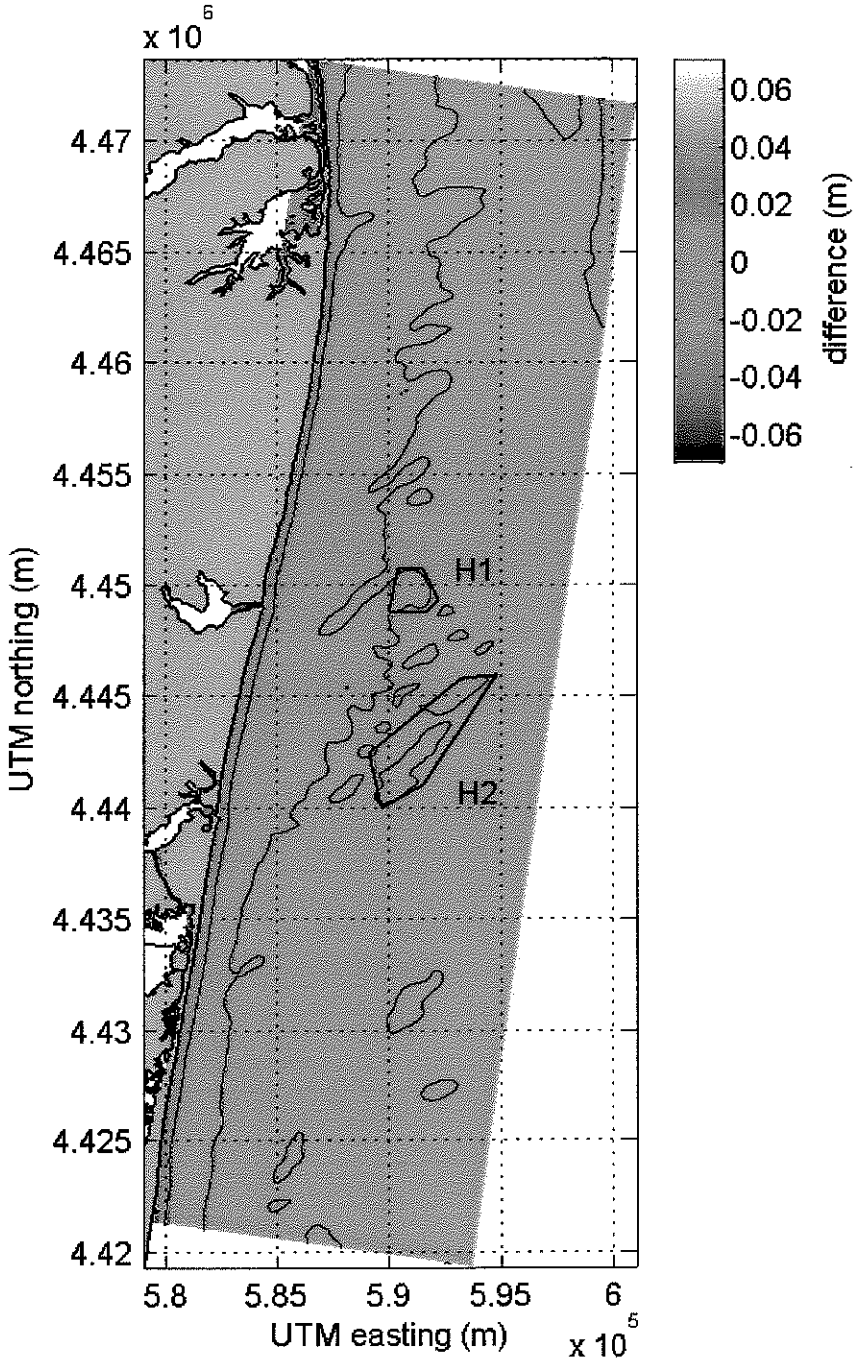

Figure C2-16. Wave height change between existing and post-dredging ($\Delta = H_{post}$-$H_{existing}$) conditions for Borrow Sites H1 and H2, wave Case 2B (H_s = 0.8 m, T_{peak} = 4.0 sec, θ_{peak} = 23 deg). Color contours indicate differences in wave height.

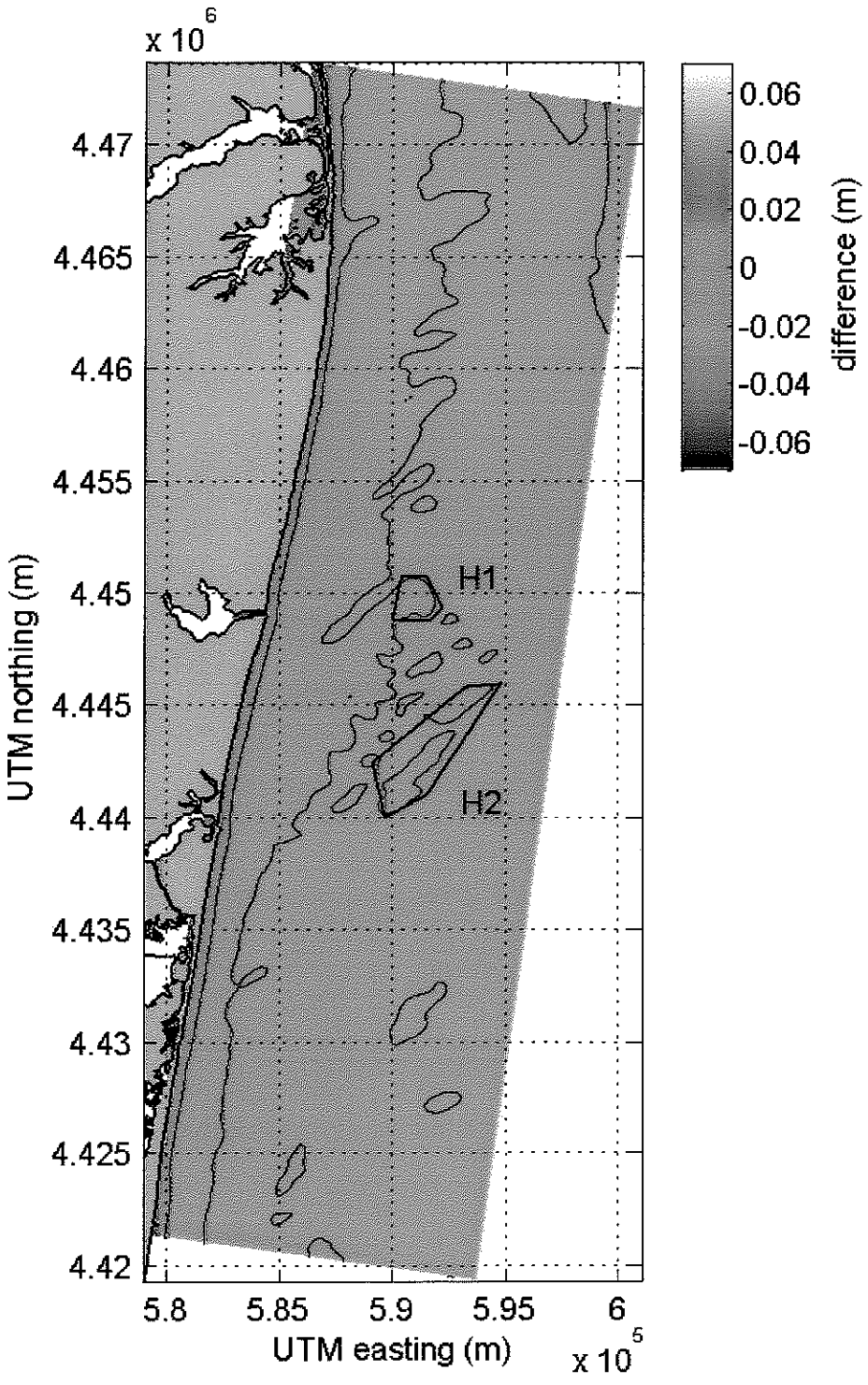

Figure C2-17. Wave height change between existing and post-dredging ($\Delta = H_{post}$-$H_{existing}$) conditions for Borrow Sites H1 and H2, wave Case 3B (H_s = 1.1 m, T_{peak} = 4.0 sec, θ_{peak} = 43 deg). Color contours indicate differences in wave height.

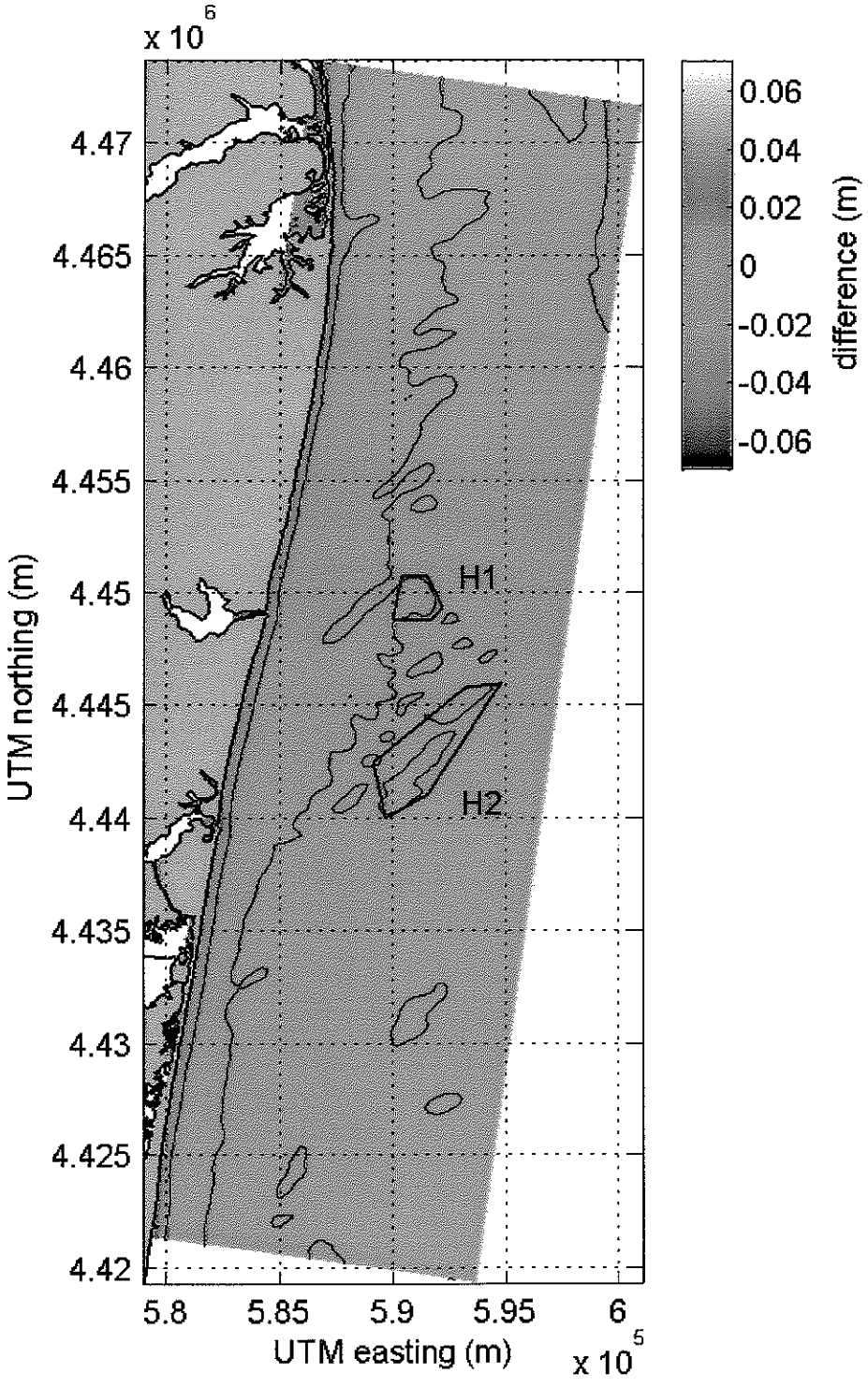

Figure C2-18. Wave height change between existing and post-dredging ($\Delta = H_{post}$-$H_{existing}$) conditions for Borrow Sites H1 and H2, wave Case 4B (H_s = 1.3 m, T_{peak} = 4.0 sec, θ_{peak} = 68 deg). Color contours indicate differences in wave height.

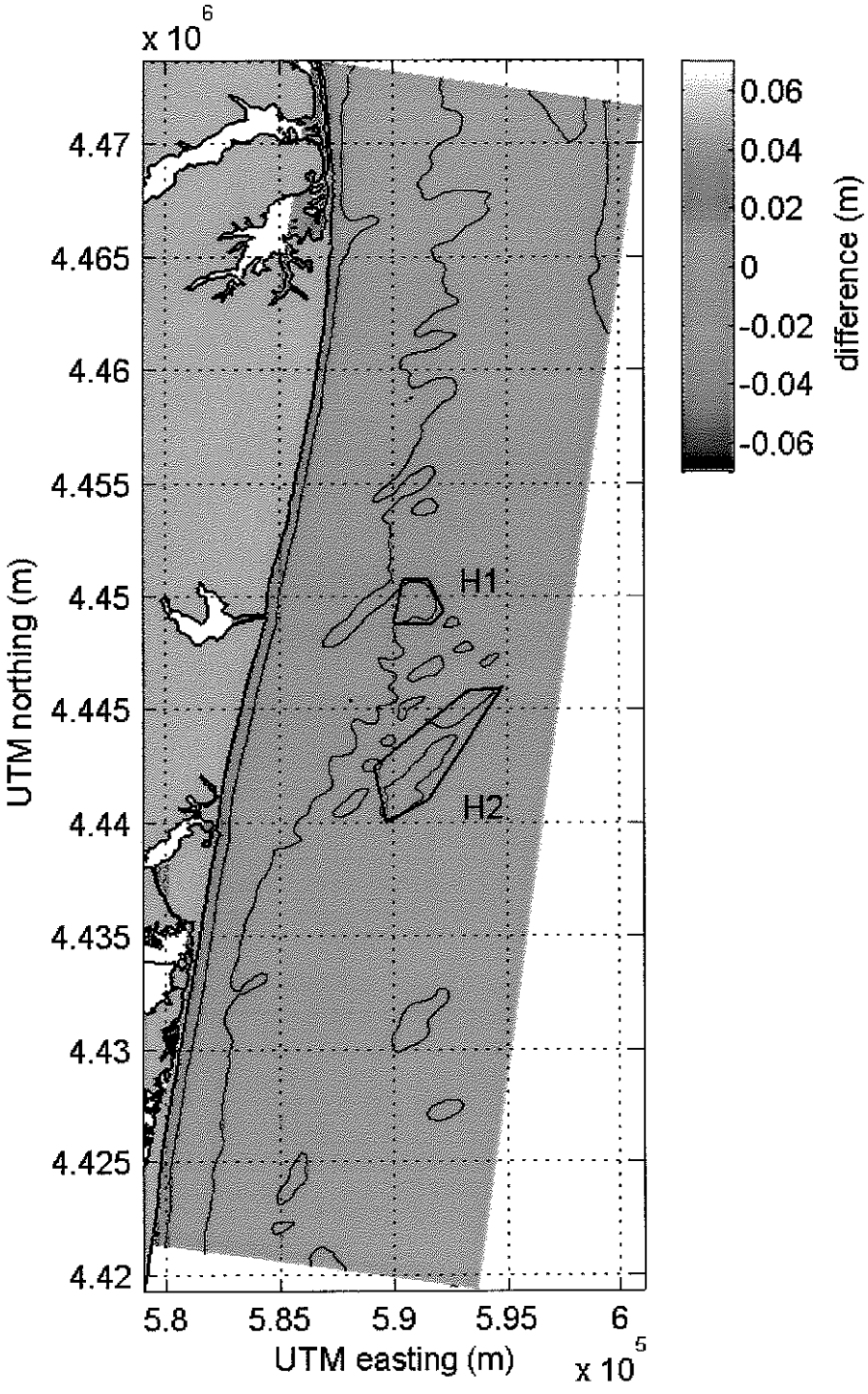

Figure C2-19. Wave height change between existing and post-dredging ($\Delta = H_{post}$-$H_{existing}$) conditions for Borrow Sites H1 and H2, wave Case 5B (H_s = 1.1 m, T_{peak} = 4.0 sec, θ_{peak} = 88 deg). Color contours indicate differences in wave height.

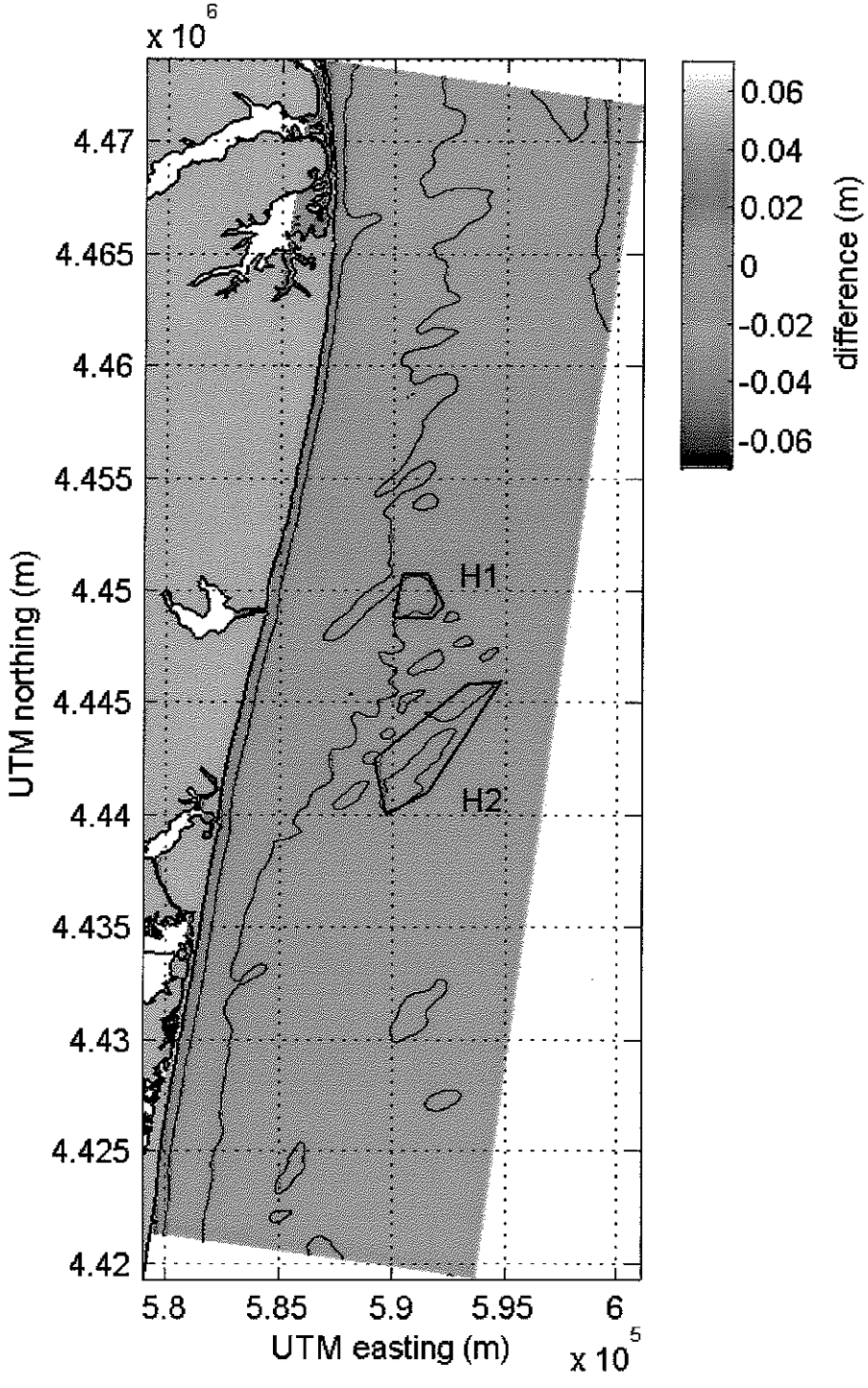

Figure C2-20. Wave height change between existing and post-dredging ($\Delta = H_{post}$-$H_{existing}$) conditions for Borrow Sites H1 and H2, wave Case 6B (H_s = 0.9 m, T_{peak} = 4.0 sec, θ_{peak} = 93 deg). Color contours indicate differences in wave height.

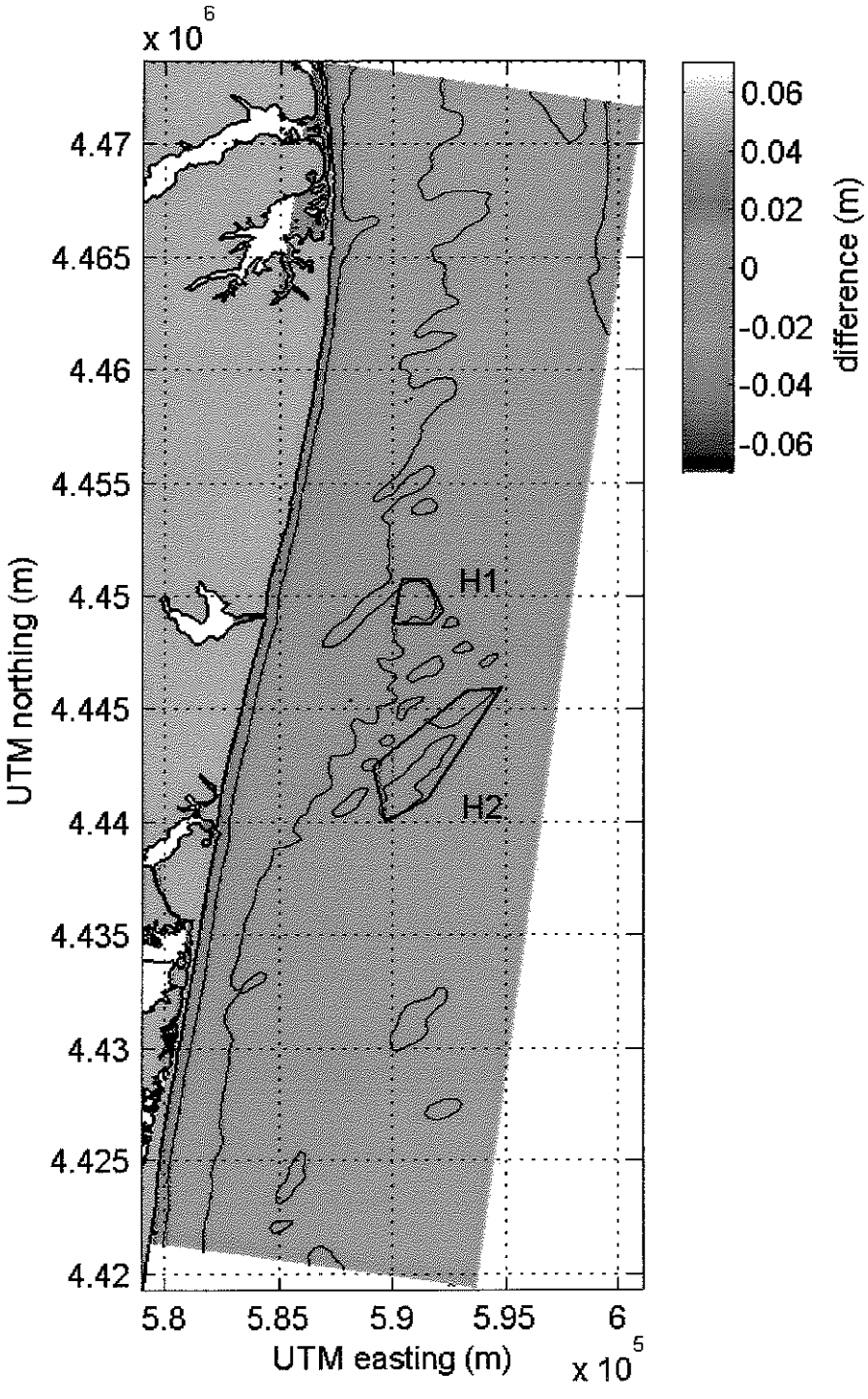

Figure C2-21. Wave height change between existing and post-dredging ($\Delta = H_{post}$-$H_{existing}$) conditions for Borrow Sites H1 and H2, wave Case 7B (H_s = 0.8 m, T_{peak} = 4.0 sec, θ_{peak} = 113 deg). Color contours indicate differences in wave height.

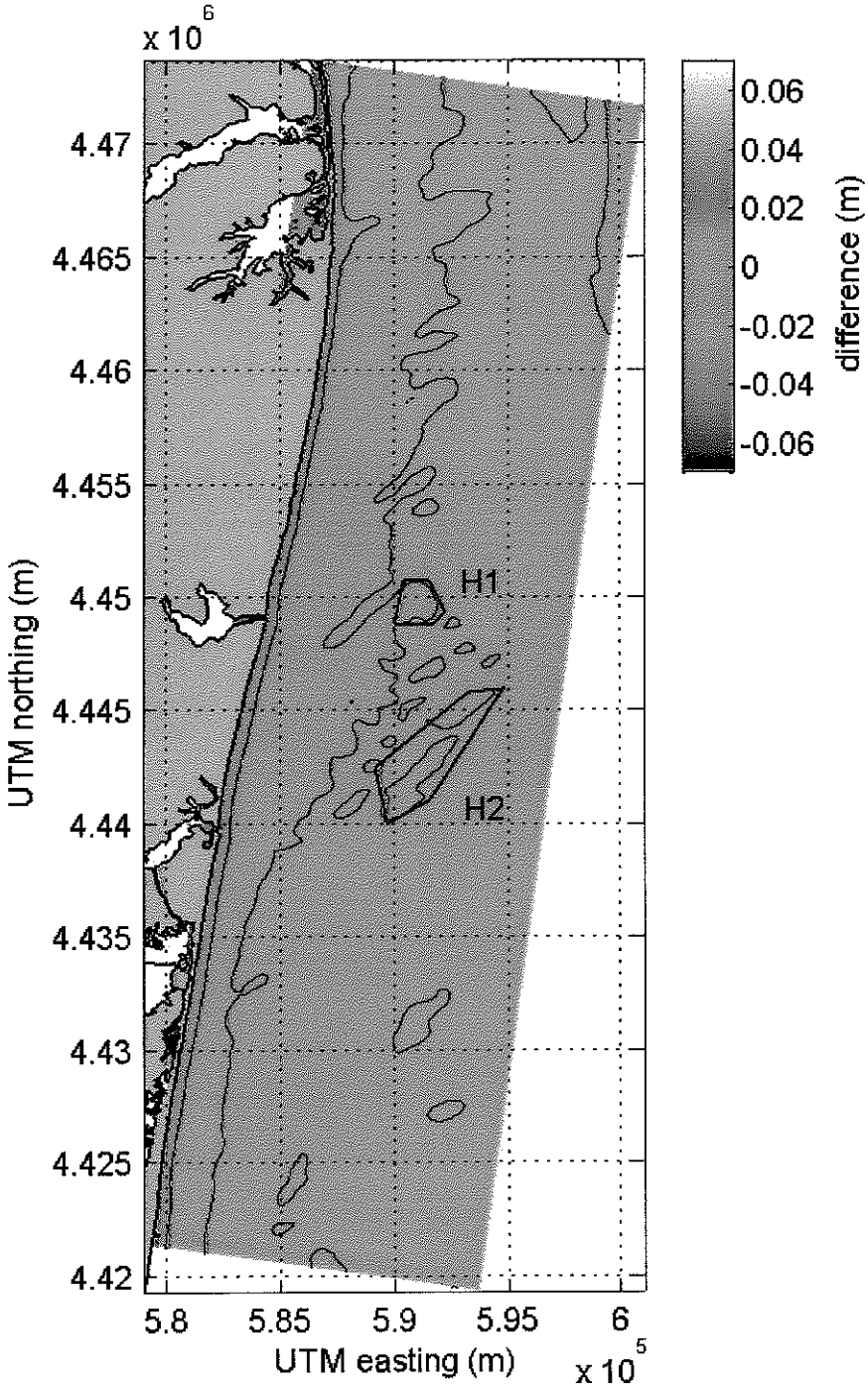

Figure C2-22. Wave height change between existing and post-dredging ($\Delta = H_{post}$-$H_{existing}$) conditions for Borrow Sites H1 and H2, wave Case 8B (H_s = 0.8 m, T_{peak} = 4.0 sec, θ_{peak} = 133 deg). Color contours indicate differences in wave height.

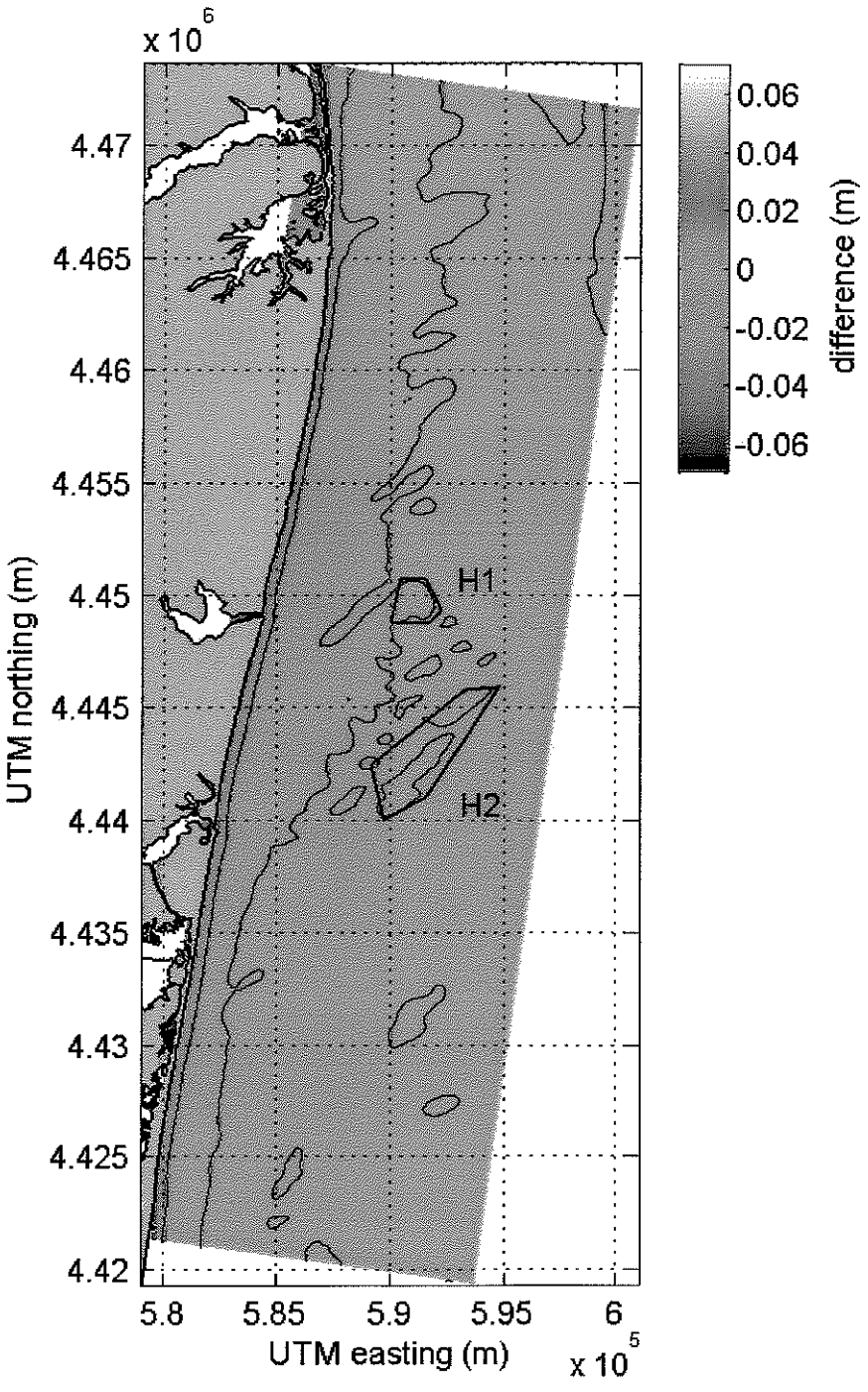

Figure C2-23. Wave height change between existing and post-dredging ($\Delta = H_{post}$-$H_{existing}$) conditions for Borrow Sites H1 and H2, wave Case 9B (H_s = 0.7 m, T_{peak} = 4.0 sec, θ_{peak} = 158 deg). Color contours indicate differences in wave height.

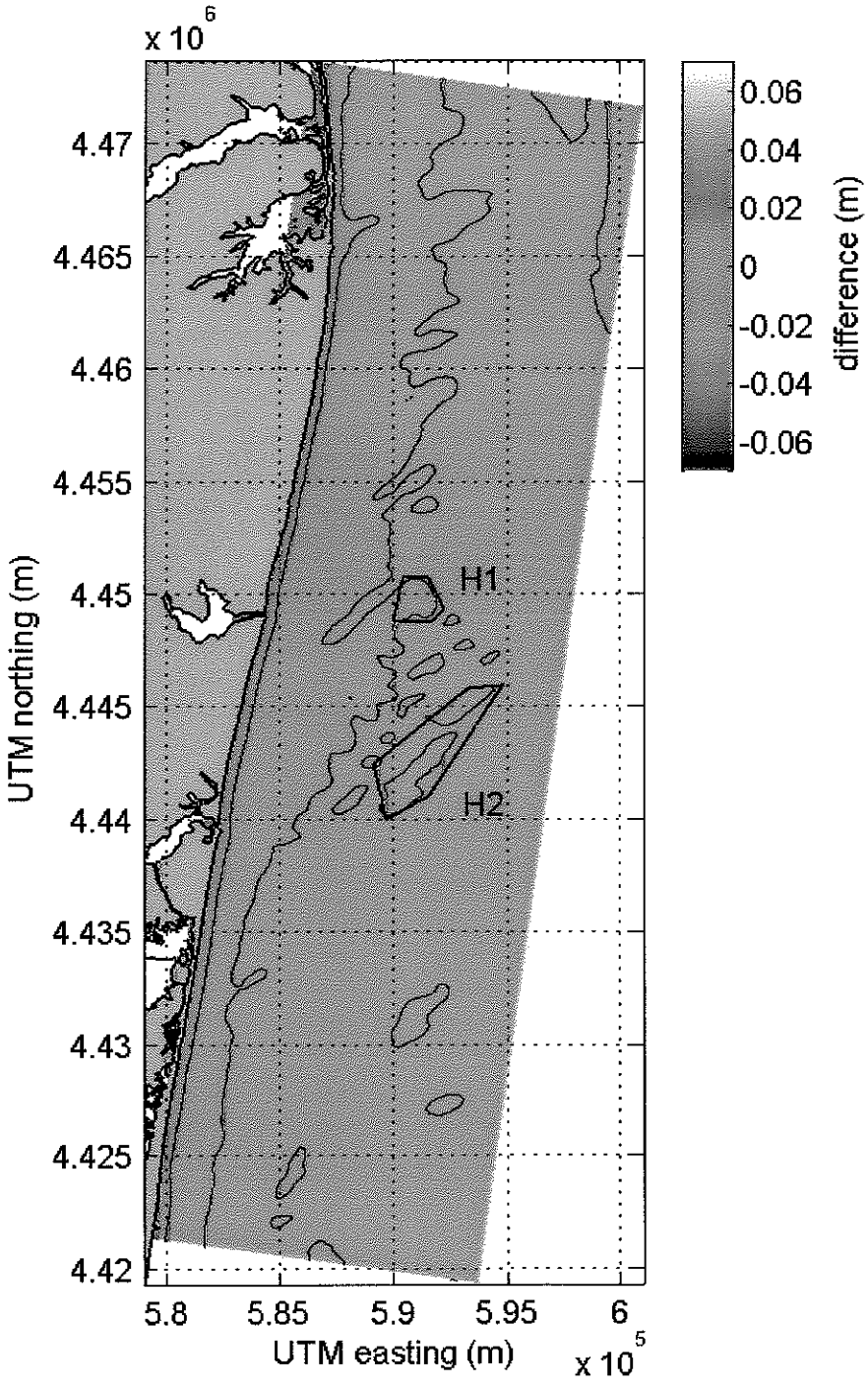

Figure C2-24. Wave height change between existing and post-dredging ($\Delta = H_{post}$-$H_{existing}$) conditions for Borrow Sites H1 and H2, wave Case 10B (H_s = 0.7m, T_{peak} = 4.0 sec, θ_{peak} = 158 deg). Color contours indicate differences in wave height.

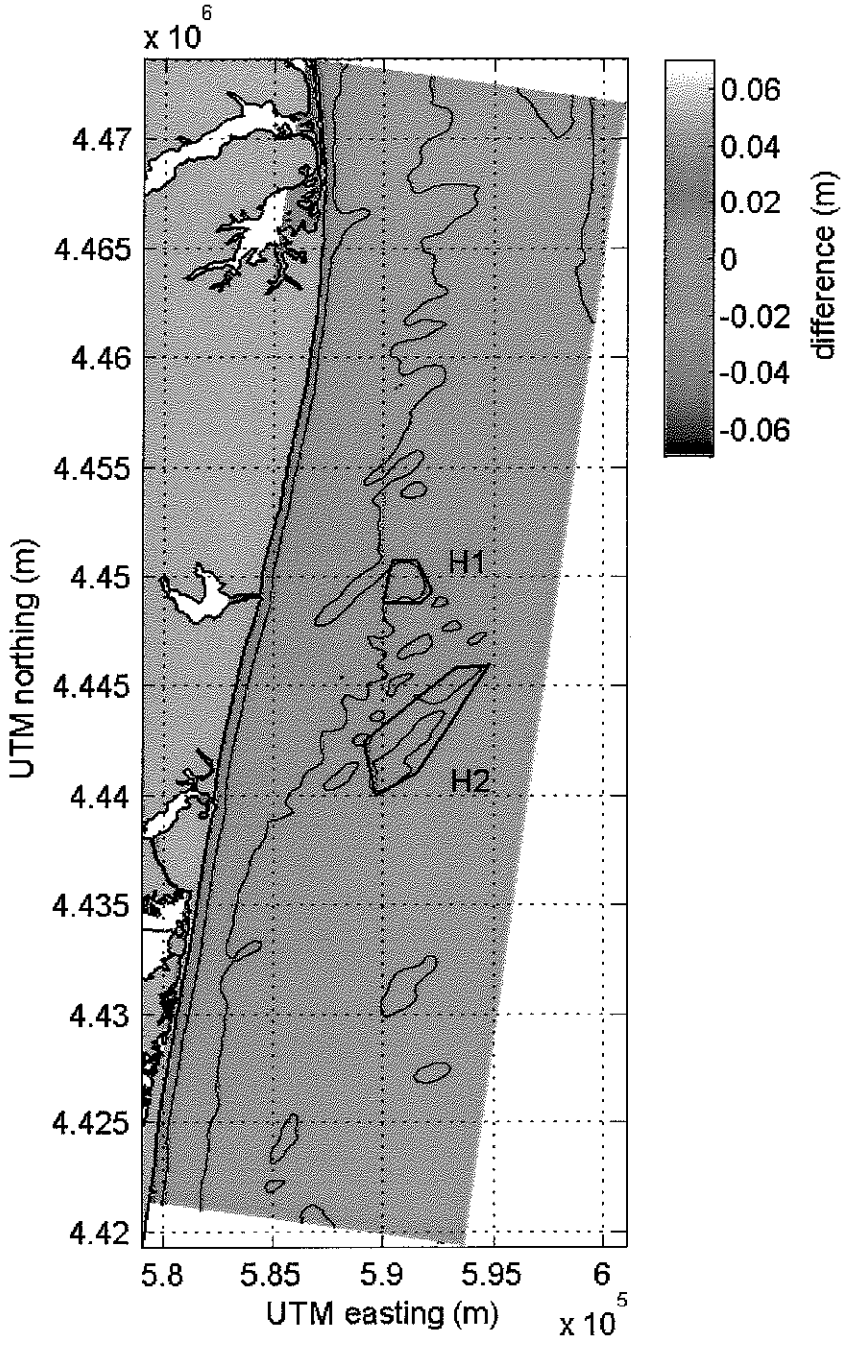

Figure C2-25. Wave height change between existing and post-dredging ($\Delta = H_{post}$-$H_{existing}$) conditions for Borrow Sites H1 and H2, wave Case 11B (H_s = 1.3 m, T_{peak} = 9.1 sec, θ_{peak} = 88 deg). Color contours indicate differences in wave height.

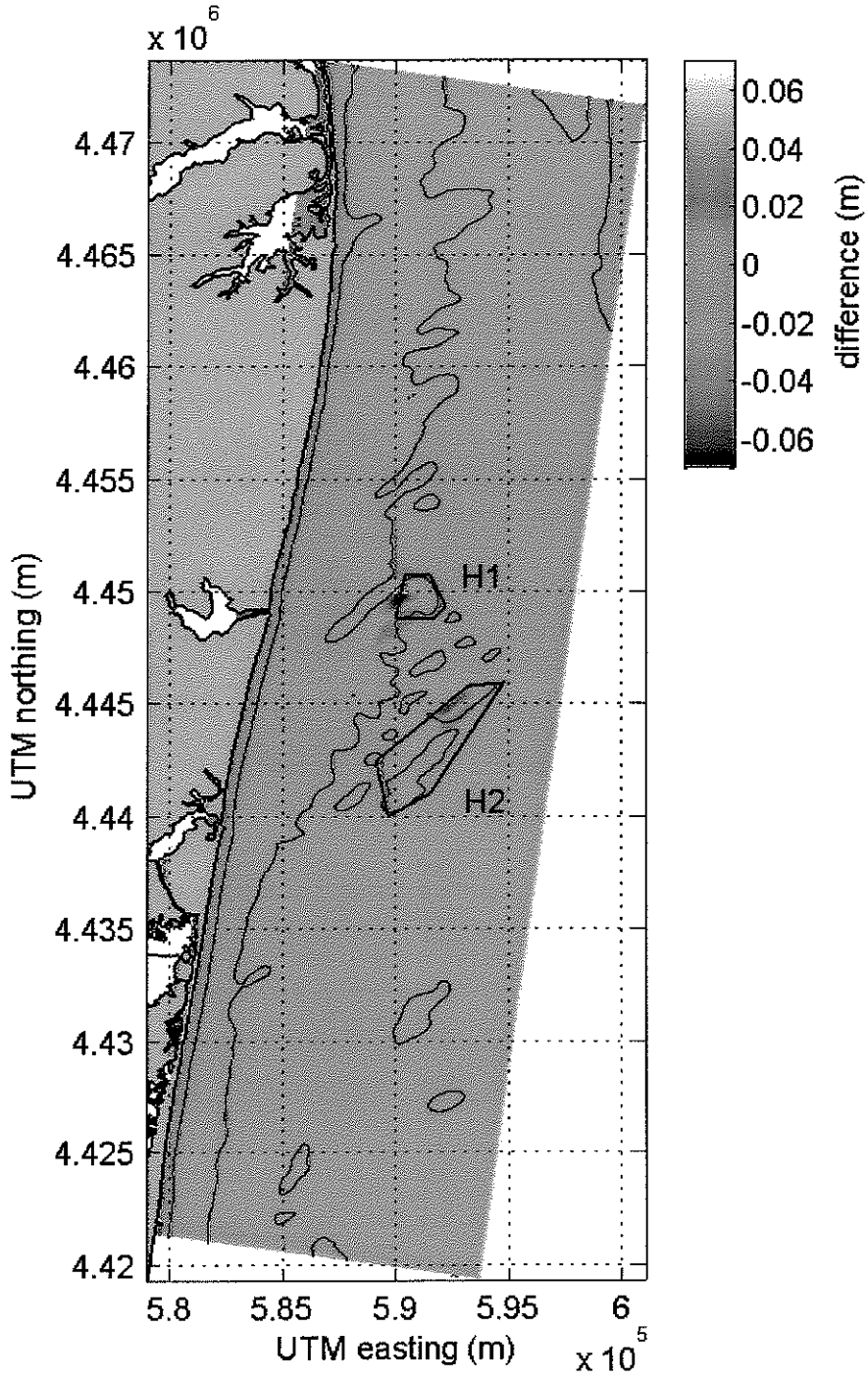

Figure C2-26. Wave height change between existing and post-dredging ($\Delta = H_{post}$-$H_{existing}$) conditions for Borrow Sites H1 and H2, wave Case 12B (H_s = 1.2 m, T_{peak} = 7.7 sec, θ_{peak} = 113 deg). Color contours indicate differences in wave height..

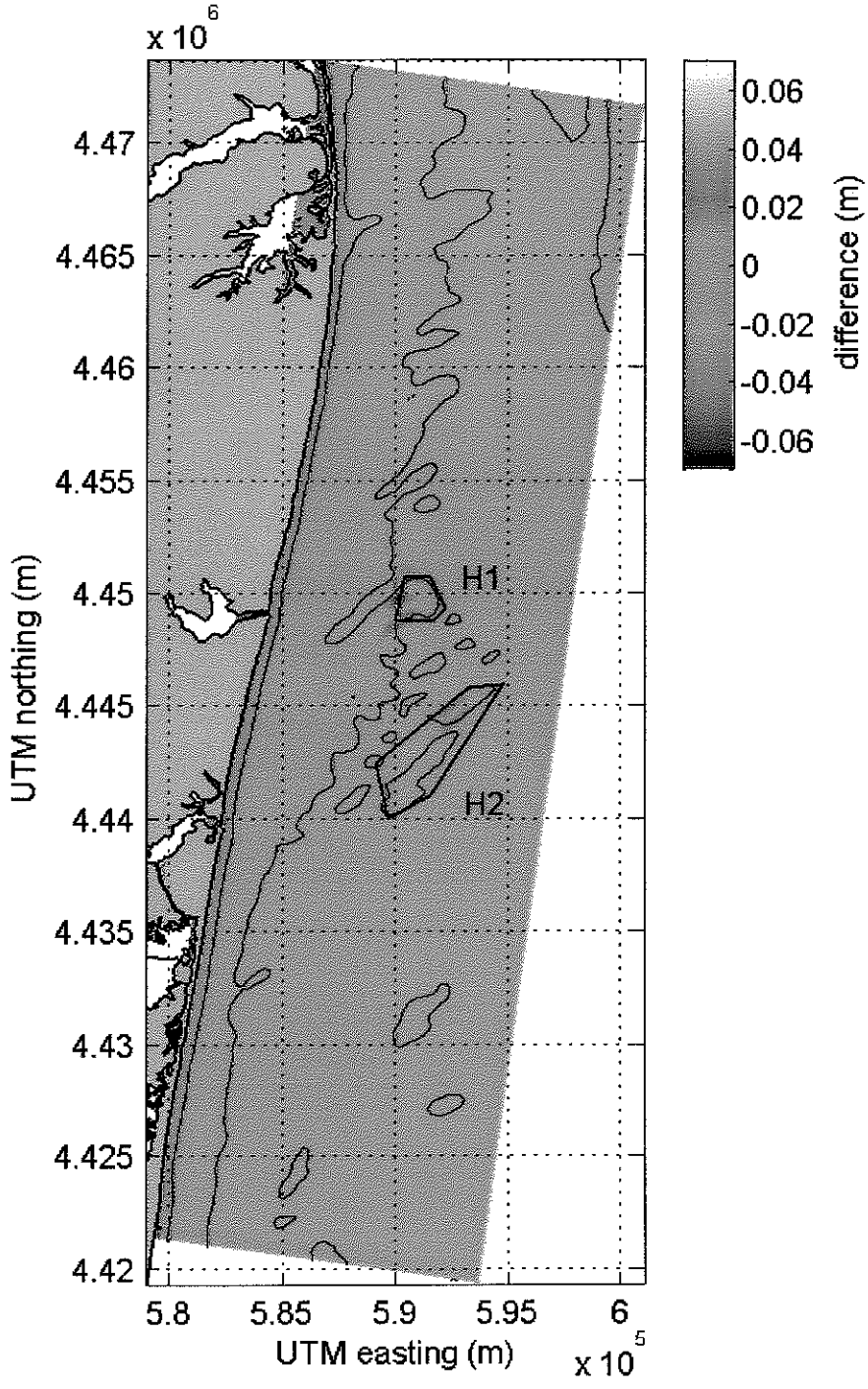

Figure C2-27. Wave height change between existing and post-dredging ($\Delta = H_{post}$-$H_{existing}$) conditions for Borrow Sites H1 and H2, wave Case 13B (H_s = 1.2 m, T_{peak} = 7.7 sec, θ_{peak} = 133 deg). Color contours indicate differences in wave height..

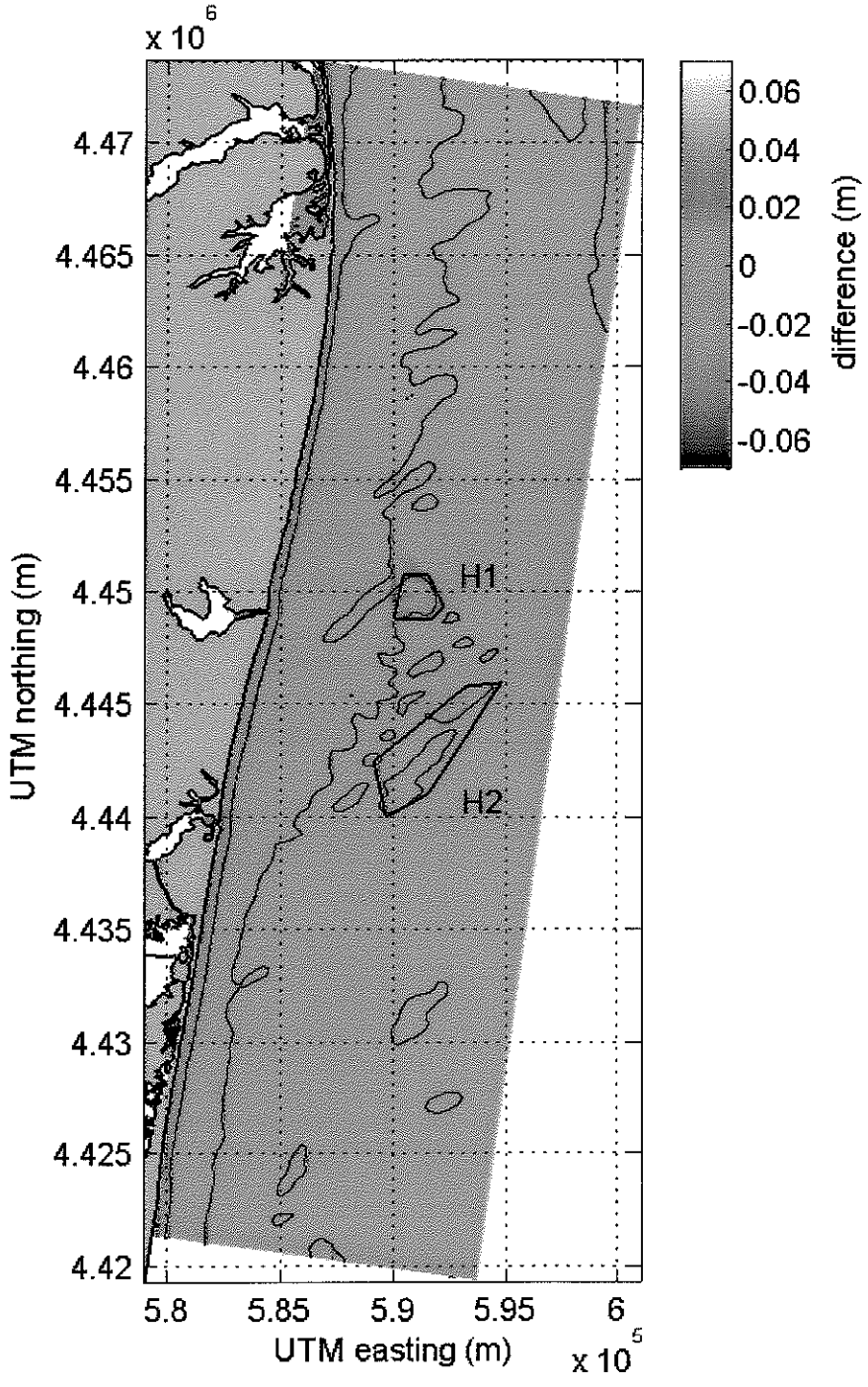

Figure C2-28. Wave height change between existing and post-dredging ($\Delta = H_{post}$-$H_{existing}$) conditions for Borrow Sites H1 and H2, wave Case 14B (H_s = 1.2 m, T_{peak} = 7.7 sec, θ_{peak} = 133 deg). Color contours indicate differences in wave height.

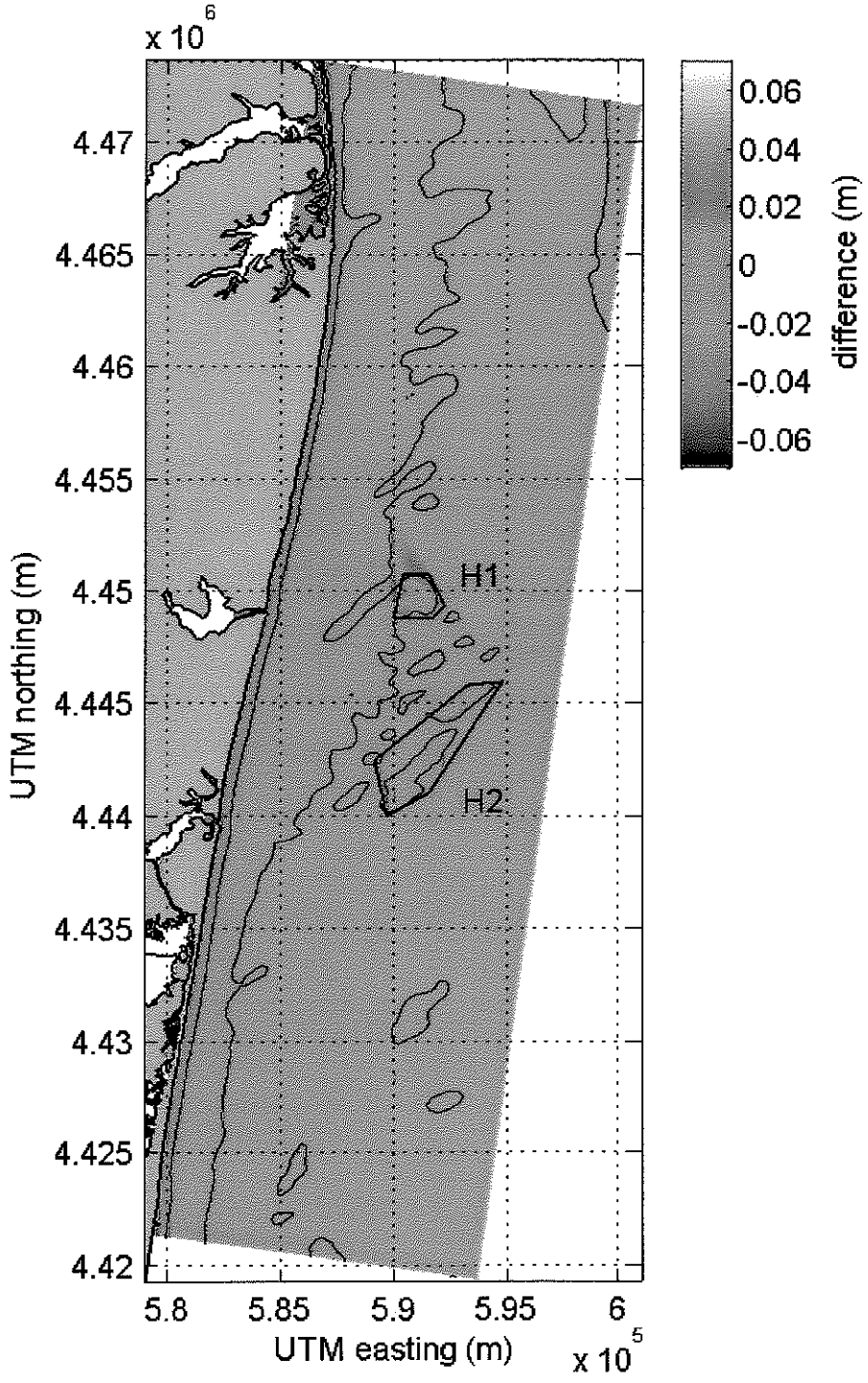

Figure C2-29. Wave height change between existing and post-dredging ($\Delta = H_{post}$-$H_{existing}$) conditions for Borrow Sites H1 and H2, wave Case 15B (H_s = 1.4 m, T_{peak} = 9.1 sec, θ_{peak} = 138 deg). Color contours indicate differences in wave height..

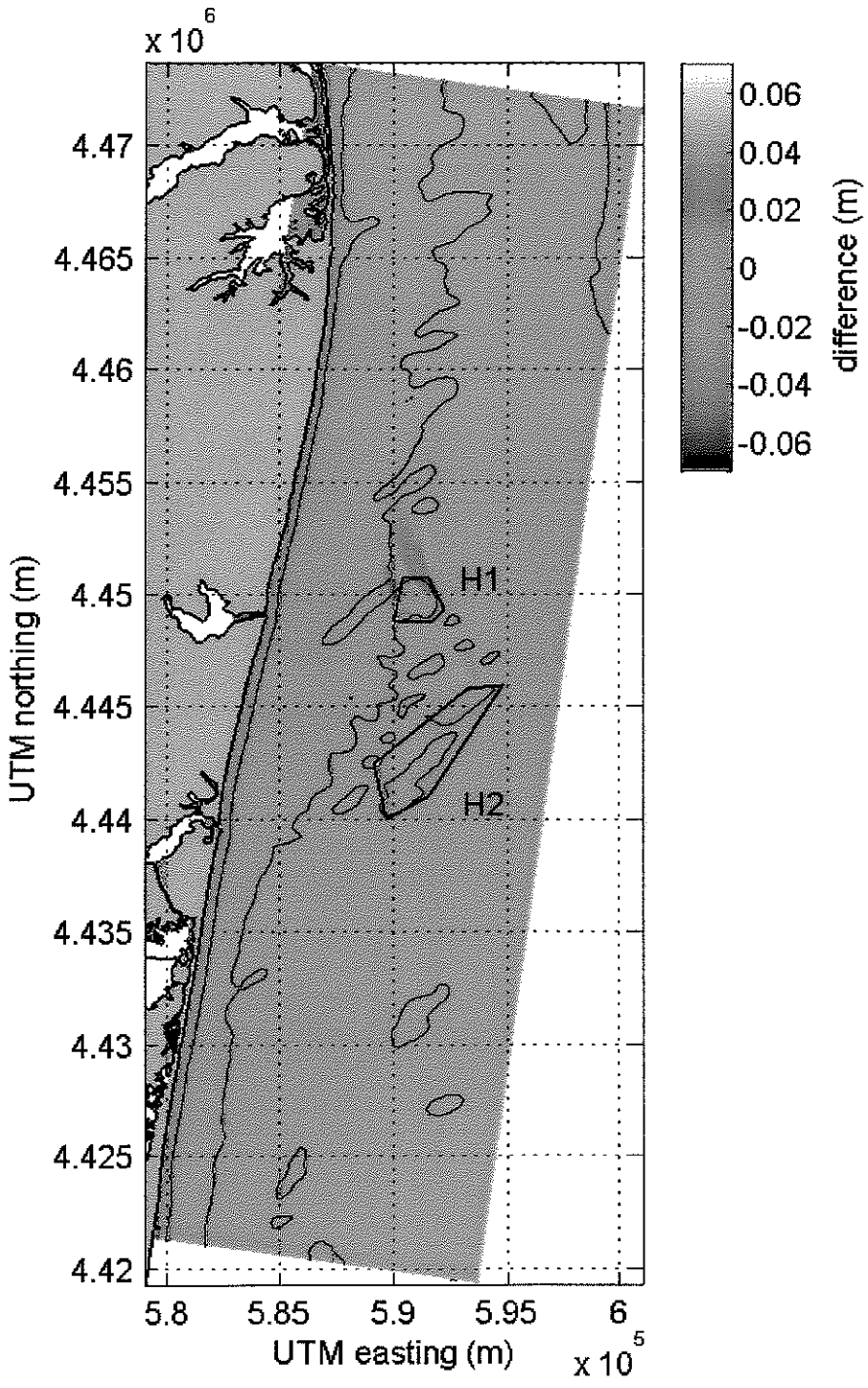

Figure C2-30. Wave height change between existing and post-dredging ($\Delta = H_{post}$-$H_{existing}$) conditions for Borrow Sites H1 and H2, wave Case 16B (H_s = 1.3 m, T_{peak} = 7.7 sec, θ_{peak} = 158 deg). Color contours indicate differences in wave height.

APPENDIX D. BIOLOGICAL FIELD SURVEY DATA

Table D-1 provides the sample types, sample codes, coordinates, and water depths for the September 2001 Survey 1 and June 2002 Survey 2 in Sand Borrow Sites H1, H2, 3, and 4 and Adjacent Stations NJ-1, NJ-2, NJ-3, NY-1, NY-2, and NY-3 offshore New Jersey and New York. Sample types include Smith-McIntyre grab (for sediment and infauna), conductivity/temperature/depth (CTD), sediment profile imaging (SPI) camera, and trawl. Sample codes are in the format S1-H1-1, where S1 refers to Survey 1, H1 means Sand Borrow Site H1, and -1 refers to Station 1. Within some sample codes, STR means trawl start, and END means trawl end. X and Y coordinates are Universal Transverse Mercator projection and given in meters. Station coordinates also are given in latitude/longitude (World Grid System [WGS] 84).

Table D-1. Sample types, sample codes, coordinates, and water depths.

Sample Type	Sample Code	Easting x	Northing y	Latitude	Longitude	Depth (m)
Survey 1						
Grab	S1-H1-01	591098.0	4441440.6	40° 07' 06.0562" N	73° 55' 51.3760" W	23
Grab	S1-H1-02	591601.0	4441648.2	40° 07' 12.5917" N	73° 55' 30.0232" W	23
Grab	S1-H1-03	592834.7	4443417.6	40° 08' 09.4840" N	73° 54' 36.9942" W	21
Grab	S1-H1-04	593083.8	4445131.5	40° 09' 04.9642" N	73° 54' 25.5789" W	17
Grab	S1-H1-05	594510.7	4445659.3	40° 09' 21.5063" N	73° 53' 24.9994" W	19
Grab	S1-H1-06	590935.8	4441073.1	40° 06' 54.2017" N	73° 55' 58.4137" W	19
CTD	CTD H1-A In	591046.3	4441688.5	40° 07' 14.1155" N	73° 55' 53.4340" W	19
CTD	CTD H1-A Out	590886.0	4441588.9	40° 07' 10.9480" N	73° 56' 00.2558" W	18
CTD	CTD H1-B In	593413.1	4444908.4	40° 08' 57.5978" N	73° 54' 11.7790" W	17
CTD	CTD H1-B Out	593367.7	4444903.3	40° 08' 57.4506" N	73° 54' 13.7003" W	17
SPI Camera	S1-H1-04	593066.9	4445130.7	40° 09' 04.9450" N	73° 54' 26.2936" W	17
SPI Camera	S1-H1-04	593047.9	4445134.1	40° 09' 05.0628" N	73° 54' 27.0947" W	17
SPI Camera	S1-H1-04	593043.7	4445139.6	40° 09' 05.2429" N	73° 54' 27.2694" W	17
SPI Camera	S1-H1-04	593038.1	4445152.6	40° 09' 05.6667" N	73° 54' 27.4993" W	17
SPI Camera	S1-H1-02	591604.3	4441618.6	40° 07' 11.6305" N	73° 55' 29.8990" W	23
SPI Camera	S1-H1-02	591599.2	4441619.2	40° 07' 11.6520" N	73° 55' 30.1141" W	23
SPI Camera	S1-H1-02	591594.6	4441626.2	40° 07' 11.8808" N	73° 55' 30.3048" W	23
SPI Camera	S1-H1-02	591589.5	4441633.5	40° 07' 12.1195" N	73° 55' 30.5165" W	23
SPI Camera	S1-H1-02	591585.5	4441637.4	40° 07' 12.2476" N	73° 55' 30.6835" W	23
SPI Camera	S1-H1-01	591083.0	4441428.5	40° 07' 05.6696" N	73° 55' 52.0158" W	23
SPI Camera	S1-H1-01	591074.8	4441430.1	40° 07' 05.7247" N	73° 55' 52.3613" W	23
SPI Camera	S1-H1-01	591066.9	4441435.1	40° 07' 05.8899" N	73° 55' 52.6925" W	23
SPI Camera	S1-H1-01	591056.3	4441438.0	40° 07' 05.9881" N	73° 55' 53.1388" W	23
SPI Camera	S1-H1-01	591043.7	4441440.5	40° 07' 06.0741" N	73° 55' 53.6697" W	23
Trawl	S1-H1-A-STR	591109.7	4441684.6	40° 07' 13.9643" N	73° 55' 50.7579" W	20
Trawl	S1-H1-A-END	591481.7	4441560.8	40° 07' 09.8042" N	73° 55' 35.1072" W	22
Trawl	S1-H1-B-STR	593289.7	4445023.1	40° 09' 01.3667" N	73° 54' 16.9340" W	16
Trawl	S1-H1-B-END	593620.3	4444831.8	40° 08' 55.0307" N	73° 54' 03.0630" W	23
Grab	S1-H2-01	591459.2	4448892.0	40° 11' 07.5545" N	73° 55' 32.3129" W	17
Grab	S1-H2-02	591026.3	4449077.5	40° 11' 13.7394" N	73° 55' 50.5221" W	20
Grab	S1-H2-03	590766.3	4450262.6	40° 11' 52.2720" N	73° 56' 00.9137" W	18
Grab	S1-H2-04	590390.4	4449511.2	40° 11' 28.0512" N	73° 56' 17.1904" W	13
CTD	CTD H2-A In	590544.6	4449404.6	40° 11' 24.5345" N	73° 56' 10.7241" W	15
CTD	CTD H2-A Out	590487.1	4449456.8	40° 11' 26.2496" N	73° 56' 13.1290" W	14
SPI Camera	S1-H2-03	590807.3	4450239.2	40° 11' 51.4971" N	73° 55' 59.1917" W	18
SPI Camera	S1-H2-03	590798.6	4450242.5	40° 11' 51.6076" N	73° 55' 59.5580" W	18
SPI Camera	S1-H2-03	590786.0	4450252.3	40° 11' 51.9303" N	73° 56' 00.0858" W	18
SPI Camera	S1-H2-03	590775.5	4450263.3	40° 11' 52.2911" N	73° 56' 00.5243" W	18

Table D-1. (Continued).

Sample Type	Sample Code	Easting x	Northing y	Latitude	Longitude	Depth (m)
SPI Camera	S1-H2-03	590758.1	4450275.8	40° 11' 52.7032" N	73° 56' 01.2538" W	18
Trawl	S1-H2-A-STR	590580.6	4449434.8	40° 11' 25.4998" N	73° 56' 09.1865" W	15
Trawl	S1-H2-A-END	590874.4	4449221.2	40° 11' 18.4587" N	73° 55' 56.8718" W	19
Grab	S1-03-01	613808.8	4487447.5	40° 31' 47.8521" N	73° 39' 22.6401" W	18
Grab	S1-03-02	615914.7	4486235.0	40° 31' 07.4886" N	73° 37' 53.9541" W	19
Grab	S1-03-04	616436.1	4485429.3	40° 30' 41.1025" N	73° 37' 32.3356" W	18
Grab	S1-03-03	617181.1	4485499.5	40° 30' 43.0009" N	73° 37' 00.6406" W	18
CTD	CTD 3-A In	616655.5	4485732.5	40° 30' 50.8221" N	73° 37' 22.8142" W	18
CTD	CTD 3-A Out	616709.0	4485789.6	40° 30' 52.6464" N	73° 37' 20.5035" W	18
SPI Camera	S1-03-01	613770.2	4487510.0	40° 31' 49.8976" N	73° 39' 24.2399" W	17
SPI Camera	S1-03-01	613782.9	4487525.2	40° 31' 50.3841" N	73° 39' 23.6904" W	17
SPI Camera	S1-03-01	613798.1	4487530.9	40° 31' 50.5614" N	73° 39' 23.0408" W	17
SPI Camera	S1-03-01	613829.7	4487538.5	40° 31' 50.7922" N	73° 39' 21.6931" W	17
SPI Camera	S1-03-01	613866.8	4487541.4	40° 31' 50.8679" N	73° 39' 20.1147" W	17
SPI Camera	S1-03-03	617171.8	4485462.9	40° 30' 41.8189" N	73° 37' 01.0601" W	18
SPI Camera	S1-03-03	617178.6	4485478.5	40° 30' 42.3213" N	73° 37' 00.7608" W	18
SPI Camera	S1-03-03	617193.7	4485493.4	40° 30' 42.7967" N	73° 37' 00.1095" W	18
SPI Camera	S1-03-03	617207.6	4485501.4	40° 30' 43.0490" N	73° 36' 59.5136" W	18
SPI Camera	S1-03-03	617228.3	4485512.4	40° 30' 43.3951" N	73° 36' 58.6269" W	18
Trawl	3-A-STR	616632.9	4485677.8	40° 30' 49.0600" N	73° 37' 23.8106" W	18
Trawl	3-A-END	616700.8	4486135.7	40° 31' 03.8722" N	73° 37' 20.6221" W	19
Grab	S1-04-01	627441.4	4488549.3	40° 32' 16.4327" N	73° 29' 42.5768" W	17
Grab	S1-04-02	629295.1	4487765.1	40° 31' 49.9748" N	73° 28' 24.3811" W	18
Grab	S1-04-03	632997.8	4487427.0	40° 31' 36.9048" N	73° 25' 47.3111" W	18
Grab	S1-04-04	628272.8	4488694.4	40° 32' 20.6753" N	73° 29' 07.1404" W	16
Grab	S1-04-05	631156.6	4487701.1	40° 31' 46.8471" N	73° 27' 05.3341" W	17
Grab	S1-04-06	631103.3	4489443.3	40° 32' 43.3603" N	73° 27' 06.2984" W	17
Grab	S1-04-07	633850.9	4490004.9	40° 32' 59.9858" N	73° 25' 09.1010" W	20
Grab	S1-04-08	635504.2	4489212.0	40° 32' 33.3128" N	73° 23' 59.4460" W	18
Grab	S1-04-09	636433.3	4489096.4	40° 32' 29.0163" N	73° 23' 20.0527" W	18
Grab	S1-04-10	632500.2	4489543.2	40° 32' 45.7991" N	73° 26' 06.8564" W	16
CTD	CTD 4-B In	632429.9	4489644.0	40° 32' 49.1076" N	73° 26' 09.7680" W	17
CTD	CTD 4-B Out	632568.4	4489752.8	40° 32' 52.5551" N	73° 26' 03.7996" W	18
CTD	CTD 4-A In	632022.6	4486786.9	40° 31' 16.7136" N	73° 26' 29.2254" W	20
CTD	CTD 4-A Out	632123.7	4486846.0	40° 31' 18.5717" N	73° 26' 24.8859" W	20
SPI Camera	S1-04-01	627407.5	4488543.8	40° 32' 16.2732" N	73° 29' 44.0214" W	16
SPI Camera	S1-04-01	627413.3	4488568.2	40° 32' 17.0610" N	73° 29' 43.7572" W	16
SPI Camera	S1-04-01	627428.0	4488595.3	40° 32' 17.9315" N	73° 29' 43.1128" W	16
SPI Camera	S1-04-01	627445.0	4488624.3	40° 32' 18.8623" N	73° 29' 42.3694" W	16
SPI Camera	S1-04-01	627463.8	4488655.3	40° 32' 19.8570" N	73° 29' 41.5480" W	17
SPI Camera	S1-04-04	628272.3	4488663.2	40° 32' 19.6640" N	73° 29' 07.1844" W	16
SPI Camera	S1-04-04	628290.3	4488694.6	40° 32' 20.6720" N	73° 29' 06.3966" W	16
SPI Camera	S1-04-04	628302.1	4488736.0	40° 32' 22.0076" N	73° 29' 05.8649" W	16
SPI Camera	S1-04-04	628326.2	4488773.8	40° 32' 23.2197" N	73° 29' 04.8131" W	16
SPI Camera	S1-04-04	628356.7	4488799.1	40° 32' 24.0230" N	73° 29' 03.4985" W	16
SPI Camera	S1-04-03	633004.8	4487436.8	40° 31' 37.2185" N	73° 25' 47.0063" W	18
SPI Camera	S1-04-03	633000.9	4487435.0	40° 31' 37.1624" N	73° 25' 47.1733" W	18
SPI Camera	S1-04-03	633026.9	4487423.1	40° 31' 36.7615" N	73° 25' 46.0777" W	18
SPI Camera	S1-04-03	633049.5	4487417.7	40° 31' 36.5734" N	73° 25' 45.1216" W	18
SPI Camera	S1-04-03	633061.4	4487427.6	40° 31' 36.8875" N	73° 25' 44.6085" W	18
SPI Camera	S1-04-06	631137.1	4489405.2	40° 32' 42.1058" N	73° 27' 04.8904" W	17
SPI Camera	S1-04-06	631158.5	4489392.2	40° 32' 41.6722" N	73° 27' 03.9906" W	17

Table D-1. (Continued)

Sample Type	Sample Code	Easting x	Northing y	Latitude	Longitude	Depth (m)
SPI Camera	S1-04-06	631186.5	4489390.4	40° 32' 41.5979" N	73° 27' 02.8020" W	17
SPI Camera	S1-04-06	631200.2	4489395.8	40° 32' 41.7651" N	73° 27' 02.2157" W	17
SPI Camera	S1-04-06	631217.7	4489406.8	40° 32' 42.1118" N	73° 27' 01.4638" W	17
SPI Camera	S1-04-07	633728.2	4490022.3	40° 33' 00.6213" N	73° 25' 14.3027" W	20
SPI Camera	S1-04-07	633744.9	4490027.2	40° 33' 00.7704" N	73° 25' 13.5892" W	20
SPI Camera	S1-04-07	633760.3	4490033.3	40° 33' 00.9592" N	73° 25' 12.9300" W	20
SPI Camera	S1-04-07	633779.2	4490040.4	40° 33' 01.1784" N	73° 25' 12.1213" W	20
SPI Camera	S1-04-07	633796.4	4490043.5	40° 33' 01.2689" N	73° 25' 11.3879" W	20
SPI Camera	S1-04-08	635469.1	4489173.1	40° 32' 32.0723" N	73° 24' 00.9676" W	18
SPI Camera	S1-04-08	635480.6	4489176.0	40° 32' 32.1596" N	73° 24' 00.4767" W	18
SPI Camera	S1-04-08	635492.7	4489173.8	40° 32' 32.0811" N	73° 23' 59.9642" W	18
SPI Camera	S1-04-08	635505.6	4489175.8	40° 32' 32.1384" N	73° 23' 59.4144" W	18
SPI Camera	S1-04-08	635517.4	4489172.2	40° 32' 32.0147" N	73° 23' 58.9158" W	18
Trawl	4-A-STR	632419.4	4487095.2	40° 31' 26.4810" N	73° 26' 12.1356" W	18
Trawl	4-A-END	632309.0	4486951.8	40° 31' 21.8954" N	73° 26' 16.9339" W	19
Trawl	4-B-STR	632854.3	4490075.5	40° 33' 02.8522" N	73° 25' 51.4046" W	18
Trawl	4-B-END	632926.8	4489757.0	40° 32' 52.4846" N	73° 25' 48.5644" W	17
Grab	S1-NJ-01	589803.5	4442798.2	40° 07' 50.5831" N	73° 56' 45.3761" W	20
Grab	S1-NJ-02	590789.4	4445618.8	40° 09' 21.6707" N	73° 56' 02.2944" W	21
Grab	S1-NJ-03	594244.2	4447621.1	40° 10' 25.2319" N	73° 53' 35.2293" W	22
Grab	S1-NY-01	618399.6	4487511.5	40° 31' 47.6124" N	73° 36' 07.5225" W	19
Grab	S1-NY-02	622447.2	4489056.0	40° 32' 35.5714" N	73° 33' 14.4571" W	14
Grab	S1-NY-03	631405.3	4485480.1	40° 30' 34.6995" N	73° 26' 56.4272" W	21
Survey 2						
Grab	S2-H1-01	591072.3	4441450.2	40° 07' 06.3775" N	73° 55' 52.4567" W	21
Grab	S2-H1-02	591586.9	4441658.0	40° 07' 12.9151" N	73° 55' 30.6138" W	22
Grab	S2-H1-03	592914.7	4443412.9	40° 08' 09.2998" N	73° 54' 33.6166" W	21
Grab	S2-H1-04	593072.5	4445125.4	40° 09' 04.7709" N	73° 54' 26.0597" W	15
Grab	S2-H1-05	594505.8	4445638.1	40° 09' 20.8208" N	73° 53' 25.2177" W	18
Grab	S2-H1-06	590934.2	4441064.7	40° 06' 53.9299" N	73° 55' 58.4855" W	18
CTD	CTD H1-A In	591690.9	4441632.3	40° 07' 12.0408" N	73° 55' 26.2339" W	20
CTD	CTD H1-A Out	591637.5	4441620.6	40° 07' 11.6824" N	73° 55' 28.4955" W	21
CTD	CTD H1-B In	593862.2	4445341.8	40° 09' 11.4721" N	73° 53' 52.5734" W	13
CTD	CTD H1-B Out	593810.7	4445388.9	40° 09' 13.0202" N	73° 53' 54.7252" W	13
Trawl Start	H1-A-STR	590937.0	4441737.0	40° 07' 15.7308" N	73° 55' 58.0264" W	17
Trawl End	H1-A-END	591277.8	4441641.0	40° 07' 12.4847" N	73° 55' 43.6793" W	20
Trawl Start	H1-B-STR	593187.0	4445219.2	40° 09' 07.7670" N	73° 54' 21.1721" W	13
Trawl End	H1-B-END	593543.7	4445239.7	40° 09' 08.2890" N	73° 54' 06.0870" W	13
Grab	S2-H2-01	591479.2	4448900.4	40° 11' 07.8190" N	73° 55' 31.4629" W	17
Grab	S2-H2-02	591037.9	4449061.7	40° 11' 13.2225" N	73° 55' 50.0397" W	19
Grab	S2-H2-03	590766.8	4450277.8	40° 11' 52.7647" N	73° 56' 00.8848" W	18
Grab	S2-H2-04	590369.6	4449527.3	40° 11' 28.5814" N	73° 56' 18.0618" W	13
CTD	CTD H2-A In	591197.9	4449902.2	40° 11' 40.4162" N	73° 55' 42.8455" W	14
CTD	CTD H2-A Out	591184.7	4450008.0	40° 11' 43.8523" N	73° 55' 43.3497" W	15
Trawl Start	H2-A-STR	590489.0	4449591.7	40° 11' 30.6235" N	73° 56' 12.9803" W	12
Trawl End	H2-A-END	590859.2	4449564.1	40° 11' 29.5844" N	73° 55' 57.3402" W	14
Grab	S2-03-01	613747.1	4487494.9	40° 31' 49.4194" N	73° 39' 25.2313" W	16
Grab	S2-03-02	615902.8	4486242.4	40° 31' 07.7346" N	73° 37' 54.4548" W	18
Grab	S2-03-03	617176.1	4485472.0	40° 30' 42.1118" N	73° 37' 00.8714" W	17
Grab	S2-03-04	616429.1	4485450.5	40° 30' 41.7934" N	73° 37' 32.6190" W	17
CTD	CTD 3-A In	616939.4	4485484.0	40° 30' 42.6211" N	73° 37' 10.9186" W	17
CTD	CTD 3-A Out	616940.2	4485631.4	40° 30' 47.3999" N	73° 37' 10.7866" W	17

Table D-1. (Continued)

Sample Type	Sample Code	Easting x	Northing y	Latitude	Longitude	Depth (m)
Trawl Start	3-A-STR	616677.4	4486052.7	40° 31' 01.1929" N	73° 37' 21.6713" W	17
Trawl End	3-A-END	616744.5	4485583.7	40° 30' 45.9525" N	73° 37' 19.1320" W	16
Grab	S2-04-01	627437.6	4488571.9	40° 32' 17.1675" N	73° 29' 42.7219" W	15
Grab	S2-04-02	629287.7	4487748.4	40° 31' 49.4375" N	73° 28' 24.7079" W	18
Grab	S2-04-03	633027.9	4487452.2	40° 31' 37.7044" N	73° 25' 46.0132" W	17
Grab	S2-04-04	628291.6	4488717.0	40° 32' 21.3975" N	73° 29' 06.3250" W	15
Grab	S2-04-05	631155.1	4487713.0	40° 31' 47.2338" N	73° 27' 05.3890" W	16
Grab	S2-04-06	631114.7	4489422.4	40° 32' 42.6762" N	73° 27' 05.8295" W	15
Grab	S2-04-07	633794.2	4489999.9	40° 32' 59.8567" N	73° 25' 11.5147" W	18
Grab	S2-04-08	635515.3	4489211.0	40° 32' 33.2738" N	73° 23' 58.9751" W	15
Grab	S2-04-09	636465.6	4489104.8	40° 32' 29.2695" N	73° 23' 18.6736" W	16
Grab	S2-04-10	632484.5	4489533.4	40° 32' 45.4905" N	73° 26' 07.5310" W	15
CTD	CTD 4-A In	632851.8	4489491.1	40° 32' 43.9074" N	73° 25' 51.9531" W	15
CTD	CTD 4-A Out	632949.0	4489623.3	40° 32' 48.1372" N	73° 25' 47.7221" W	15
CTD	CTD 4-B In	632521.9	4486902.2	40° 31' 20.1650" N	73° 26' 07.9264" W	17
CTD	CTD 4-B Out	632627.5	4487201.0	40° 31' 29.7914" N	73° 26' 03.2146" W	17
Trawl Start	4-A-STR	632868.9	4490036.5	40° 33' 01.5794" N	73° 25' 50.8136" W	15
Trawl End	4-A-END	632640.8	4489572.4	40° 32' 46.6648" N	73° 26' 00.8589" W	14
Trawl Start	4-B-STR	632497.0	4487066.8	40° 31' 25.5157" N	73° 26' 08.8602" W	16
Trawl End	4-B-END	632238.2	4486826.5	40° 31' 17.8738" N	73° 26' 20.0361" W	18
Grab	S2-NJ-01	589800.9	4442809.8	40° 07' 50.9603" N	73° 56' 45.4801" W	20
Grab	S2-NJ-02	590732.3	4445632.1	40° 09' 22.1242" N	73° 56' 04.7009" W	21
Grab	S2-NJ-03	594214.7	4447635.9	40° 10' 25.7238" N	73° 53' 36.4685" W	21
Grab	S2-NY-01	618408.5	4487502.2	40° 31' 47.3063" N	73° 36' 07.1506" W	18
Grab	S2-NY-02	622453.6	4489044.5	40° 32' 35.1952" N	73° 33' 14.1931" W	13
Grab	S2-NY-03	631434.7	4485490.0	40° 30' 35.0037" N	73° 26' 55.1710" W	19

Table D-2. Sediment grain size data for grab samples collected during the September 2001 Survey 1 and the June 2002 Survey 2 in Sand Borrow Sites H1, H2, 3, and 4 and Adjacent Stations NJ-1, NJ-2, NJ-3, NY-1, NY-2, and NY-3 offshore New Jersey and New York.

Survey	Area	Station	Gravel	Sand	Silt & Clay	Folk's Description
1	H1	1	8.71	91.18	0.11	Gravelly sand
1	H1	2	0	100	0	Sand
1	H1	3	0	99.53	0.47	Sand
1	H1	4	0	99.76	0.24	Sand
1	H1	5	0	99.93	0.07	Sand
1	H1	6	0.65	98.92	0.43	Slightly gravelly sand
1	H2	1	0.1	99.6	0.24	Slightly gravelly sand
1	H2	2	0.15	99.74	0.11	Slightly gravelly sand
1	H2	3	0.11	99.7	0.18	Slightly gravelly sand
1	H2	4	0	99.84	0.16	Sand
1	3	1	36.87	39	24.13	Sandy gravel
1	3	2	2.63	97.18	0.18	Slightly gravelly sand
1	3	3	6.05	93.75	0.2	Gravelly sand
1	3	4	18.03	60.34	21.63	Gravelly sand
1	4	1	0	99.82	0.18	Sand
1	4	2	0	98.69	1.31	Sand
1	4	3	0.15	99.67	0.17	Slightly gravelly sand
1	4	4	0.2	99.72	0.09	Slightly gravelly sand
1	4	5	0.11	99.31	0.58	Slightly gravelly sand
1	4	6	0	99.7	0.3	Sand
1	4	7	0	99.76	0.24	Sand
1	4	8	0.2	99.61	0.19	Slightly gravelly sand
1	4	9	0	100	0	Sand
1	4	10	0.22	99.53	0.24	Slightly gravelly sand
1	NJ	1	1.01	97.81	1.18	Slightly gravelly sand
1	NJ	2	1.19	98.64	0.17	Slightly gravelly sand
1	NJ	3	16.66	75.56	7.78	Gravelly sand
1	NY	1	1.14	97.99	0.87	Slightly gravelly sand
1	NY	2	0.3	99.26	0.44	Slightly gravelly sand
1	NY	3	0.61	99.19	0.2	Slightly gravelly sand
2	H1	1	7.27	92.45	0.29	Gravelly sand
2	H1	2	0	99.5	0.5	Sand
2	H1	3	0	99.87	0.13	Sand
2	H1	4	0.41	99.43	0.16	Slightly gravelly sand
2	H1	5	0.26	99.35	0.29	Slightly gravelly sand
2	H1	6	3.2	96.38	0.43	Slightly gravelly sand
2	H2	1	0	99.61	0.39	Sand
2	H2	2	0	99.71	0.29	Sand
2	H2	3	0	99.89	0.11	Sand
2	H2	4	0	99.87	0.13	Sand

Table D-2. (Continued)

Survey	Area	Station	Gravel	Sand	Silt & Clay	Folk's Description
2	3	1	59.99	39.86	0.15	Sandy gravel
2	3	2	5.45	94.17	0.37	Gravelly sand
2	3	3	10.52	87.5	1.98	Gravelly sand
2	3	4	20.53	78.24	1.23	Gravelly sand
2	4	1	0	99.46	0.54	Sand
2	4	2	0	99.58	0.42	Sand
2	4	3	0	99.97	0.21	Sand
2	4	4	0	100	0	Sand
2	4	5	0	99.52	0.48	Sand
2	4	6	0	99.8	0.2	Sand
2	4	7	0	99.46	0.54	Sand
2	4	8	0	99.95	0.05	Sand
2	4	9	0	98.25	1.75	Sand
2	4	10	0	99.78	0.22	Sand
2	NJ	1	0	99.73	0.27	Sand
2	NJ	2	2.68	97.04	0.29	Slightly gravelly sand
2	NJ	3	17.59	82.35	0.06	Gravelly sand
2	NY	1	0	99.39	0.61	Sand
2	NY	2	0	99.63	0.37	Sand
2	NY	3	0	99.45	0.55	Sand

Table D-3. Sediment profile imaging (SPI) data.

STATION	TIME	DATE	DEPTH (m)	EASTING (m)	NORTHING (m)	LATITUDE	LONGITUDE	CAL	Penetration Area (sq.cm)	Penetration Mean (cm)	Penetration Minimum (cm)	Penetration Maximum (cm)	Boundary Roughness (cm)	RPD AREA	RPD Mean (cm)	RPD Minimum (cm)	RPD Maximum (cm)	Grain Size Major Mode (phi)	Grain Size Maximum (phi)	Grain Size Minimum (phi)	Number of Voids	Minimum Void Depth (cm)	Maximum Void Depth (cm)	METHANE	Infaunal Succ. Stage	Mud Clast #	Mud Clast Surface State	Comments	
H1-01 A	11:34:50	09/06/01	23	591083.0	4441428.5	40° 07.0945' N	73° 55.8669' W	16.71	83.87	5.02	4.32	6.04	1.71	Ind	Ind	Ind	Ind	2-1	-1	>4	0	-	-	0	1	0	-	Slightly sorted, mature, subrounded, felspathic quartz sand. Fines are nearly absent. Bedform (ripple) in foreground. Worm (*Polygordius* ?) on left, possible biological structure in mid right forground. Sorting is throughout entire sediment column indicating consistent energy at site.	
H1-01 B	11:35:41	09/06/01	23	591074.8	4441430.1	40° 07.0954' N	73° 55.8727' W	16.74	99.20	5.93	5.35	6.35	1.00	Ind	Ind	Ind	Ind	2-1	0	>4	0	-	-	0	1	0	-	Poorly sorted feldspathic quartz medium sand. Tube in right backround. Twig fragment at SWI. Near absence of fines precludes RPD. High energy. Minor reworked shell fragments.	
H1-02 B	11:13:53	09/06/01	23	591589.2	4441619.2	40° 07.1942' N	73° 55.5015' W	16.77	108.90	6.49	6.00	6.84	0.84	75.34	4.49	4.05	5.04	4-3	2	>4	0	-	-	0	2	0	-	Poorly sorted silty fine sand. Underlying sediment black and highly organic. Thick, continuous RPD. Tube at right background.	
H1-02 D	11:16:03	09/06/01	23	591589.5	4441633.5	40° 07.2020' N	73° 55.5085' W	16.77	65.92	3.93	3.30	4.57	1.28	65.92	3.93	>3.30	>4.57	4-3	2	>4	0	-	-	0	1	0	-	Tan silty fine sand with broken tubes at SWI. Photo appears to be axial along a ripple crest. Surface sediment (top 0.7 cm) enriched in flocs and fines relative to rest of sediment column.	
H1-04 B	10:13:12	09/06/01	17	593047.9	4445134.1	40° 09.0844' N	73° 54.4516' W	16.74	76.32	4.56	3.67	5.20	1.52	Ind	Ind	Ind	Ind	3-2	2	>4	2	1.96	3.21	0	1 on 3	0	-	Well sorted quartzitic fine sand. Void and buried *E. parma* in middle of frame. Hermit crab at SWI and clam shell (*Mercenaria*) at SWI.	
H1-04 C	10:14:29	09/06/01	17	593043.7	4445139.6	40° 09.0874' N	73° 54.4545' W	16.74	89.78	5.36	4.73	5.97	1.24	Ind	Ind	Ind	Ind	3-2	1	>4	2	1.43	2.86	0	1 on 3	0	-	Moderately sorted, quartzitic, fine sand with void at far left and far right. Photo appear to along axis of ripple crest. Fine tubes at right SWI. Pockets of tan fine grained sediment both on surface in sediment column that are likely fecal pellets or pseudofeces. Minor reworked shell fragments.	
S3-03-01 A	10:01:06	09/07/01	17	613770.2	4487510	40° 31.8316' N	73° 39.4040' W	16.77	84.57	5.04	4.23	5.97	1.74	Ind	Ind	Ind	Ind	-2--3/2-1	-4	>4	0	-	-	0	Ind	0	-	Rounded gravel lag over medium gray sand. High energy area.	
S3-03-01 B	10:02:16	09/07/01	17	613782.9	4487525.2	40° 31.8397' N	73° 39.3948' W	16.74	81.00	4.84	3.95	5.38	1.43	Ind	Ind	Ind	Ind	-1--2/3-2	-4	>4	0	-	-	0	Ind	0	-	Rounded gravel lag over medium gray sand. High energy area.	
S3-03-03 A	11:39:23	09/07/01	18	617171.8	4485462.9	40° 30.6970' N	73° 37.0177' W	16.74	90.37	5.40	4.26	6.35	2.08	Ind	Ind	Ind	Ind	3-2	3	>4	0	-	-	0	Ind	0	-	Well-sorted granitic fine sand. Little or no fines. Bedform. Lack of fines precludes an apparent RPD.	
S3-03-03 B	11:40:39	09/07/01	18	617178.6	4485478.5	40° 30.7054' N	73° 37.0127' W	16.74	87.29	5.21	4.36	6.00	1.65	Ind	Ind	Ind	Ind	3-2	3	>4	0	-	-	0	Ind	0	-	Well-sorted granitic fine sand. Little or no fines. Bedform. Lack of fines precludes an apparent RPD. Amphipods in water column.	
S4-04-01 B	14:31:56	09/07/01	16	627413.3	4488568.2	40° 32.2844' N	73° 29.7293' W	16.77	70.69	4.22	3.58	5.20	1.62	Ind	Ind	Ind	Ind	4-3	2	>4	1	1.34	1.46	0	1 on 3	0	-	Well sorted quartzitic fine sand. Void with sand dollar in middle of frame. Small tubes at right SWI in background. Shell fragments at SWI.	
S4-04-01 D	14:34:38	09/07/01	16	627445	4488624.3	40° 32.3144' N	73° 29.7062' W	16.77	77.34	4.61	4.11	5.32	1.21	Ind	Ind	Ind	Ind	4-3	2	>4	0	-	-	0	1 on 3	0	-	Well sorted quartzitic fine sand. Void with possible sand dollar in middle of frame. Small broken tubes pieces at right SWI in background. Shell fragments at SWI. There appear to some pockets of tan fines within the sediment column that are likely related to burrowing/feeding activity.	
S4-04-03 A	16:00:11	09/07/01	18	633004.8	4487436.8	40° 31.6203' N	73° 25.7834' W	16.77	77.84	4.64	4.29	5.20	0.90	Ind	Ind	Ind	Ind	4-3	2	>4	0	-	-	0	1	0	-	Sorted, tan, very fine sand with abundant tubes and faunal structures at SWI. Some dark tan fines in upper sediment column. Ripple. Very minor shell fragments.	
S4-04-03 C	16:03:05	09/07/01	18	633026.9	4487423.1	40° 31.6127' N	73° 25.7680' W	16.71	94.95	5.68	5.11	6.35	1.24	Ind	Ind	Ind	Ind	4-3	2	>4	1	2.12	2.43	0	1 on 3	0	-	Sorted, tan, very fine sand with small feeding void in right-center. Clear, proteinaceous tube at SWI in center of frame. Minor shell debris at SWI. Some dark tan fines in upper sediment column at right.	
S4-04-04 C	14:52:56	09/07/01	16	628302.1	4488736	40° 32.3668' N	73° 29.0977' W	16.77	77.86	4.64	4.04	5.57	1.52	Ind	Ind	Ind	Ind	4-3	2	>4	0	-	-	0	1 on 3	0	-	Well-sorted, tan, very fine quartzitic sand. Ripple field. Frequently disturbed by wave action and fines winnowed. Possible sand dollar at depth on left.	
S4-04-04 D	14:54:21	09/07/01	16	628326.2	4488773.8	40° 32.3870' N	73° 29.0802' W	16.74	88.30	5.28	4.26	5.60	1.34	Ind	Ind	Ind	Ind	4-3	2	>4	0	-	-	0	Ind	0	-	Well-sorted, tan, very fine quartzitic sand. Ripple field. Frequently disturbed by wave action and fines winnowed.	
S4-04-06 A	8:27:57	09/08/01	17	631137.1	4489405.2	40° 32.7018' N	73° 27.0815' W	16.74	82.44	4.92	4.48	5.57	1.09	Ind	Ind	Ind	Ind	4-3	2	>4	1	2.12	2.52	0	1 on 3	0	-	Sorted, tan, very fine sand with dark tan flocs/detritus sporadic throughout sediment column. Small void/burrow in center. Minor shell debris. Bedform,	
S4-04-06 B	8:29:14	09/08/01	17	631158.5	4489392.2	40° 32.6945' N	73° 27.0665' W	16.74	118.73	7.09	6.04	7.65	1.62	Ind	Ind	Ind	Ind	4-3	2	>4	1	4.54	4.89	0	1 on 3	4	O	Sorted, tan, very fine sand. Bedform. Buried sand dollar (*E. parma*) lower mid-left and extends to SWI. Minor shell debris.	
S4-04-07 B	10:03:54	09/08/01	20	633744.9	4490027.2	40° 33.0128' N	73° 25.2265' W	16.74	88.18	5.27	4.51	6.58	2.05	Ind	Ind	Ind	Ind	3-2	2	>4	0	-	-	0	Ind	0	-	Well-sorted, tan, granitic fine sand. Very nice arcuate bedform. Surface is periodically mobile to a depth of 0.4 cm as evidenced by the increased porosity of the surface layer. Very little shell debris.	
S4-04-07 C	10:05:08	09/08/01	20	633760.3	4490033.3	40° 33.0160' N	73° 25.2155' W	16.74	112.41	6.72	6.25	7.47	1.21	Ind	Ind	Ind	Ind	3-2	2	>4	0	-	-	0	3	0	-	Sorted, tan, fine to very fine granitic sand. Bedform. Little to no shell debris. Some fines/flocs at SWI in center background; looks like Spisula at depth.	
S4-04-08 B	10:22:04	09/08/01	18	635480.6	4489176	40° 32.5360' N	73° 24.0079' W	16.77	56.98	3.40	2.68	4.17	1.49	Ind	Ind	Ind	Ind	4-3	2	>4	1	1.90	2.49	0	1 on 3	0	-	Slightly sorted, tan, mature very fine sand. Feeding void mid-left. Small scale biological structure at SWI. Very firm. Bedform. Minor broken shell debris.	
S4-04-08 C	10:23:22	09/08/01	18	635492.7	4489173.8	40° 32.5347' N	73° 23.9994' W	16.74	72.92	4.36	3.61	4.88	1.28	Ind	Ind	Ind	Ind	4-3	2	>4	0	-	-	0	Ind	0	-	Sorted, tan, very fine sand with minor dark tan fine and minor small shell debris. Bedform. Very firm sand.	
H2-03 A	16:16:47	09/06/01	18	590807.3	4450239.2	40° 11.8583' N	73° 55.9865' W	16.74	65.09	3.89	3.11	4.23	1.12	Ind	Ind	Ind	Ind	3-2	2	>4	0	-	-	0	1 on 3	0	-	Poorly sorted, organic, fine sand with large Diopatra tube at SWI. Abundant detritus mixed with sand and at SWI. Bedforms that appear to be presently inactive. Flaser bed of gray silt at mid-right which represents buried ripple trough.	
H2-03 B	16:18:01	09/06/01	18	590798.6	4450242.5	40° 11.8601' N	73° 55.9926' W	16.74	80.86	4.83	3.83	5.29	1.46	Ind	Ind	Ind	Ind	3-2	2	>4	0	-	-	0	1 on 3	0	-	Poor to moderately sorted organic fine to medium sand. Bedform. Minor shell debris. Sand dollar on right just under surface with edge bisected by prism.	

Ind = Indeterminate

Table D-4. Phylogenetic list of infauna collected in grab samples during the September 2001 Survey 1 and June 2002 Survey 2 in the sand borrow sites offshore New Jersey and New York.

Phylum	Class	Family	Taxon Name
Annelida	Oligochaeta	Enchytraeidae	Enchytraeidae (LPIL)
Annelida	Oligochaeta	Tubificidae	Tubificidae (LPIL)
Annelida	Polychaeta	Ampharetidae	*Ampharete acutifrons*
Annelida	Polychaeta	Ampharetidae	*Asabellides oculata*
Annelida	Polychaeta	Capitellidae	*Capitella jonesi*
Annelida	Polychaeta	Capitellidae	*Mediomastus ambiseta*
Annelida	Polychaeta	Capitellidae	*Notomastus hemipodus*
Annelida	Polychaeta	Chaetopteridae	*Spiochaetopterus oculatus*
Annelida	Polychaeta	Cirratulidae	*Caulleriella* sp. J
Annelida	Polychaeta	Cirratulidae	*Monticellina dorsobranchialis*
Annelida	Polychaeta	Cirratulidae	*Tharyx acutus*
Annelida	Polychaeta	Dorvilleidae	*Pettiboneia duofurca*
Annelida	Polychaeta	Dorvilleidae	*Protodorvillea kefersteini*
Annelida	Polychaeta	Eunicidae	*Marphysa bellii*
Annelida	Polychaeta	Flabelligeridae	*Pherusa plumosa*
Annelida	Polychaeta	Glyceridae	*Glycera americana*
Annelida	Polychaeta	Glyceridae	*Glycera capitata*
Annelida	Polychaeta	Glyceridae	*Glycera dibranchiata*
Annelida	Polychaeta	Glyceridae	*Hemipodus roseus*
Annelida	Polychaeta	Goniadidae	*Goniadella gracilis*
Annelida	Polychaeta	Hesionidae	*Microphthalmus* (LPIL)
Annelida	Polychaeta	Lumbrineridae	*Lumbrinerides dayi*
Annelida	Polychaeta	Lumbrineridae	*Lumbrinerides acuta*
Annelida	Polychaeta	Lumbrineridae	*Lumbrineris* (LPIL)
Annelida	Polychaeta	Lumbrineridae	*Scoletoma acicularum*
Annelida	Polychaeta	Lumbrineridae	*Scoletoma verrilli*
Annelida	Polychaeta	Magelonidae	*Magelona* sp. GG
Annelida	Polychaeta	Magelonidae	*Magelona riojai*
Annelida	Polychaeta	Maldanidae	*Axiothella mucosa*
Annelida	Polychaeta	Nephtyidae	*Nephtys bucera*
Annelida	Polychaeta	Nephtyidae	*Nephtys picta*
Annelida	Polychaeta	Nereidae	*Nereis acuminata*
Annelida	Polychaeta	Nereidae	*Nereis succinea*
Annelida	Polychaeta	Oenonidae	*Drilonereis longa*
Annelida	Polychaeta	Oenonidae	*Notocirrus spiniferus*
Annelida	Polychaeta	Onuphidae	*Onuphis* (LPIL)
Annelida	Polychaeta	Opheliidae	*Travisia parva*
Annelida	Polychaeta	Orbiniidae	*Leitoscoloplos robustus*

Table D-4. (Continued)

Phylum	Class	Family	Taxon Name
Annelida	Polychaeta	Orbiniidae	*Orbinia swani*
Annelida	Polychaeta	Oweniidae	*Galathowenia oculata*
Annelida	Polychaeta	Paraonidae	*Aricidea catherinae*
Annelida	Polychaeta	Paraonidae	*Aricidea cerrutii*
Annelida	Polychaeta	Paraonidae	*Aricidea wassi*
Annelida	Polychaeta	Paraonidae	*Cirrophorus ilvana*
Annelida	Polychaeta	Phyllodocidae	*Hesionura elongata*
Annelida	Polychaeta	Phyllodocidae	*Nereiphylla fragilis*
Annelida	Polychaeta	Pilargiidae	*Ancistrosyllis groenlandica*
Annelida	Polychaeta	Pilargiidae	*Litocorsa antennata*
Annelida	Polychaeta	Pilargiidae	*Synelmis albini*
Annelida	Polychaeta	Pilargiidae	*Synelmis* sp. H
Annelida	Polychaeta	Pisionidae	*Pisione remota*
Annelida	Polychaeta	Polygordiidae	*Polygordius* (LPIL)
Annelida	Polychaeta	Polynoidae	*Harmothoe imbricata*
Annelida	Polychaeta	Polynoidae	*Lepidonotus sublevis*
Annelida	Polychaeta	Sabellariidae	*Sabellaria vulgaris*
Annelida	Polychaeta	Scalibregmatidae	*Scalibregma inflatum*
Annelida	Polychaeta	Sigalionidae	*Fimbriosthenelais* sp. A
Annelida	Polychaeta	Sigalionidae	*Sigalion arenicola*
Annelida	Polychaeta	Sigalionidae	*Sthenelais limicola*
Annelida	Polychaeta	Spionidae	*Apoprionospio pygmaea*
Annelida	Polychaeta	Spionidae	*Carazziella hobsonae*
Annelida	Polychaeta	Spionidae	*Dipolydora socialis*
Annelida	Polychaeta	Spionidae	*Dispio uncinata*
Annelida	Polychaeta	Spionidae	*Prionospio* (LPIL)
Annelida	Polychaeta	Spionidae	*Scolelepis squamata*
Annelida	Polychaeta	Spionidae	*Spio filicornis*
Annelida	Polychaeta	Spionidae	*Spiophanes bombyx*
Annelida	Polychaeta	Spionidae	*Streblospio benedicti*
Annelida	Polychaeta	Spirorbidae	*Spirorbidae* (LPIL)
Annelida	Polychaeta	Syllidae	*Brania wellfleetensis*
Annelida	Polychaeta	Syllidae	*Exogone dispar*
Annelida	Polychaeta	Syllidae	*Exogone hebes*
Annelida	Polychaeta	Syllidae	*Parapionosyllis* sp. D
Annelida	Polychaeta	Syllidae	*Parapionosyllis longicirrata*
Annelida	Polychaeta	Syllidae	*Sphaerosyllis piriferopsis*
Annelida	Polychaeta	Syllidae	*Streptosyllis arenae*
Annelida	Polychaeta	Syllidae	*Streptosyllis varians*
Annelida	Polychaeta	Syllidae	*Syllides longocirrata*
Annelida	Polychaeta	Terebellidae	Terebellidae (LPIL)

Table D-4. (Continued)

Phylum	Class	Family	Taxon Name
Arthropoda	Arachnida	Halacaridae	Halacaridae (LPIL)
Arthropoda	Malacostraca	Aeginellidae	*Aeginina longicornis*
Arthropoda	Malacostraca	Ampeliscidae	*Ampelisca verrilli*
Arthropoda	Malacostraca	Anthuridae	*Cyathura polita*
Arthropoda	Malacostraca	Aoridae	*Leptocheirus pinguis*
Arthropoda	Malacostraca	Aoridae	*Pseudunciola obliquua*
Arthropoda	Malacostraca	Aoridae	*Unciola irrorata*
Arthropoda	Malacostraca	Aoridae	*Unciola serrata*
Arthropoda	Malacostraca	Bodotriidae	*Pseudoleptocuma minor*
Arthropoda	Malacostraca	Calappidae	*Calappa sulcata*
Arthropoda	Malacostraca	Cancridae	*Cancer irroratus*
Arthropoda	Malacostraca	Cirolanidae	*Politolana polita*
Arthropoda	Malacostraca	Corophiidae	*Monocorophium tuberculatum*
Arthropoda	Malacostraca	Crangonidae	*Crangon septemspinosa*
Arthropoda	Malacostraca	Diastylidae	*Oxyurostylis smithi*
Arthropoda	Malacostraca	Gammaridae	*Gammarus annulatus*
Arthropoda	Malacostraca	Gammaridae	*Gammarus tigrinus*
Arthropoda	Malacostraca	Haustoriidae	*Acanthohaustorius intermedius*
Arthropoda	Malacostraca	Haustoriidae	*Acanthohaustorius millsi*
Arthropoda	Malacostraca	Haustoriidae	*Parahaustorius attenuatus*
Arthropoda	Malacostraca	Haustoriidae	*Protohaustorius wigleyi*
Arthropoda	Malacostraca	Idoteidae	*Chiridotea tuftsi*
Arthropoda	Malacostraca	Idoteidae	*Edotea triloba*
Arthropoda	Malacostraca	Idoteidae	*Erichsonella* (LPIL)
Arthropoda	Malacostraca	Idoteidae	*Idotea metallica*
Arthropoda	Malacostraca	Isaeidae	*Photis* (LPIL)
Arthropoda	Malacostraca	Liljeborgiidae	*Liljeborgia* sp. A
Arthropoda	Malacostraca	Lysianassidae	*Hippomedon serratus*
Arthropoda	Malacostraca	Mysidae	Mysidae (LPIL)
Arthropoda	Malacostraca	Nototanaidae	*Tanaissus psammophilus*
Arthropoda	Malacostraca	Oedicerotidae	*Americhelidium americanum*
Arthropoda	Malacostraca	Oedicerotidae	*Monoculodes* sp. D
Arthropoda	Malacostraca	Paguridae	*Pagurus longicarpus*
Arthropoda	Malacostraca	Phoxocephalidae	*Phoxocephalus holbolli*
Arthropoda	Malacostraca	Phoxocephalidae	*Rhepoxynius hudsoni*
Arthropoda	Malacostraca	Pinnotheridae	*Dissodactylus mellitae*
Arthropoda	Malacostraca	Stenothoidae	*Parametopella cypris*
Arthropoda	Malacostraca	Xanthidae	Xanthidae (LPIL)
Arthropoda	Ostracoda	Paradoxostomatidae	*Pellucistoma* (LPIL)

Table D-4. (Continued)

Phylum	Class	Family	Taxon Name
Arthropoda	Ostracoda	Sarsiellidae	*Eusarsiella texana*
Arthropoda	Ostracoda		*Podocopida* (LPIL)
Chordata	Leptocardia	Branchiostomidae	*Branchiostoma* (LPIL)
Cnidaria	Anthozoa		*Actiniaria* (LPIL)
Echinodermata	Asteroidea	Asteriidae	*Asterias forbesi*
Echinodermata	Echinoidea	Echinarachnidae	*Echinarachnius parma*
Mollusca	Bivalvia	Astartidae	*Astarte castanea*
Mollusca	Bivalvia	Cardiidae	*Cerastoderma pinnulatum*
Mollusca	Bivalvia	Lyonsiidae	*Lyonsia hyalina*
Mollusca	Bivalvia	Mactridae	*Mulinia lateralis*
Mollusca	Bivalvia	Mactridae	*Spisula solidissima*
Mollusca	Bivalvia	Montacutidae	Montacutidae (LPIL)
Mollusca	Bivalvia	Mytilidae	*Crenella glandula*
Mollusca	Bivalvia	Nuculidae	*Nucula proxima*
Mollusca	Bivalvia	Pandoridae	*Pandora gouldiana*
Mollusca	Bivalvia	Periplomatidae	*Periploma leanum*
Mollusca	Bivalvia	Solenidae	*Ensis directus*
Mollusca	Bivalvia	Solenidae	*Siliqua costata*
Mollusca	Bivalvia	Tellinidae	*Tellina agilis*
Mollusca	Bivalvia	Veneridae	*Pitar morrhuanus*
Mollusca	Gastropoda	Calyptraeidae	*Crepidula plana*
Mollusca	Gastropoda	Elysiidae	*Elysia* (LPIL)
Mollusca	Gastropoda	Epitoniidae	*Epitonium* (LPIL)
Mollusca	Gastropoda	Nassariidae	*Ilyanassa trivittata*
Mollusca	Gastropoda	Naticidae	*Neverita duplicata*
Mollusca	Gastropoda	Naticidae	*Tectonatica pusilla*
Mollusca	Gastropoda	Pyramidellidae	*Turbonilla interrupta*
Mollusca	Gastropoda	Vitrinellidae	*Circulus multistriatus*
Platyhelminthes	Turbellaria		*Turbellaria* (LPIL)
Rhynchocoela	Anopla	Lineidae	Lineidae (LPIL)
Rhynchocoela	Anopla	Tubulanidae	*Tubulanus* (LPIL)
Sipuncula			*Sipuncula* (LPIL)

LPIL = Lowest practical identification level.

APPENDIX E. SPATIAL DATA FILES, EXCLUSIONARY MAPPING, AND SAMPLING DESIGN FOR BIOLOGICAL FIELD SURVEYS

E1. INTRODUCTION

Continental Shelf Associates, Inc. (CSA) used spatial data files and exclusionary mapping to design the biological field surveys (see Section 6.2.1.1). This appendix provides the details concerning the spatial data files, exclusionary mapping, and design of the field surveys.

Spatial data provide information on the geographic location and characteristics of environmental features. Typically, spatial data for environmental features include coordinates (e.g., latitude and longitude) and attributes (e.g., depth, size, number, etc.).

Spatial data are best managed and analyzed using specialized or dedicated software called Geographic Information Systems (GIS). GIS software facilitates the representation of environmental features in the real world in a two-dimensional model of the world such as a map. GIS also allows efficient handling of various types of spatial data representing environmental features in the real world. Once information on environmental features is captured within a GIS environment, users are provided with a highly dynamic and efficient mechanism or tool for conducting environmental assessments with a geographic focus.

The Minerals Management Service (MMS) adopted ArcView GIS (Environmental Systems Research Institute, Redlands, California), the leading industry product for desktop environmental GIS, as an agency standard and therefore required submission of spatial data files in ArcView format. The requirement for submission of spatial data files also is an outgrowth of the increasing recognition that environmental information acquired or used in Federal projects be stored in a manner that allows access and efficient use for other relevant applications of the data.

The following discussion describes the ArcView GIS (Version 3.2) procedures used in preparing the required spatial data files and conducting the exclusionary mapping that assisted in designing the field survey program. An ArcView project was created for the spatial data files and exclusionary mapping process as described below.

E2. SPATIAL DATA FILES

The following spatial data files in ArcView format (shapefiles) were requested by the MMS as project deliverables:

Sand Borrow Sites
Identified Shoal Fields
Bathymetry (Depth Contours or Isobaths)
Natural Reefs (Hard Bottom, Potential Hard Bottom)
Artificial Reefs
Disposal Sites (Ocean Dredged Material Disposal Sites)
Shipwrecks
Submarine Cables
Shipping Traffic Separation Schemes (Shipping Lanes)
Military Firing Fans (Military Warning Areas)
Distribution of Sediment Types
Distribution and Location of Infauna and Epifauna
Fishing Areas
Essential Fish Habitat
Endangered and Threatened Species

In addition to these spatial data, other files were included as follows:

3-nmi Federal/State Boundary
Aids to Navigation
State Boundaries
Shoreline

Base map features (e.g., shoreline and state boundaries) and spatial data files were obtained in ArcView format (shapefiles) from various sources. Table E-1 lists the primary spatial data files according to environmental feature, data source, and data format. Because the files come from many sources that compiled the spatial data based on a wide range of historical and recent information, accuracy and precision of the data are variable.

Applicable spatial data files for essential fish habitat and most endangered and threatened species were not available for the study area. The National Marine Fisheries Service currently is developing some of these geographic data. For most species with extensive spatial distributions, mapping their areas of occurrence is of limited value to the exclusionary mapping effort. For example, endangered or threatened marine mammal species of the region may be found throughout the entire study area.

E3. EXCLUSIONARY MAPPING

Available spatial data were used in an exclusionary mapping process to guide the field sampling design. The purpose of exclusionary mapping was to ensure that sampling would include the areas of concern to the MMS (e.g., areas in Federal waters shallower than 21 m) and exclude areas that would not be dredged due to the presence of environmental features (e.g., artificial reefs, shipwrecks, submarine cables, etc.). Buffer zones were added to appropriate environmental features with the goal of protecting resources or avoiding conflicts.

To facilitate the utility of the results of the exclusionary mapping effort in designing and conducting the field survey program, a standard geodesy was adopted (i.e., Universal Transverse Mercator [UTM] Zone 18 North, North American Datum 1983 [NAD 1983] in meters). This allowed use of a standard grid for positioning sampling stations and determining relative distances between stations and environmental features.

After developing a base map using ArcView GIS software, the exclusionary mapping process began with incorporating the sand borrow sites within the base map (Figure E-1). Applied Coastal Research and Engineering, Inc. identified four sand borrow sites in Federal waters along the northern coast of New Jersey and the southern coast of Long Island, New York. Four primary criteria were used to isolate potential borrow sites. First, all of the sand borrow sites had to be offshore of the 3-nmi Federal/State boundary. Second, water depths greater than 21 m were excluded as a practical limitation for sand extraction. This eliminated any potential site east of Fire Island Inlet because the 21-m depth contour exists at or landward of the Federal/State boundary. Third, sand ridges were of most interest as potential borrow sites to minimize the extent of excavation below the ambient continental shelf surface adjacent to these sites. It was expected that this procedure would limit potential physical environmental impacts to waves and currents resulting from dredging. Fourth, the geologic characteristics of offshore sand deposits (as described by the U.S. Geological Survey [USGS] and New Jersey Department of Environmental Protection, New Jersey Geological Survey [NJGS]) had to be compatible with beach environments where fill is to be placed.

Based on these criteria, four sand borrow sites were identified. Two sand borrow sites (H1 and H2) off northern New Jersey were identified within the NJGS designated Resource Area H seaward of the Federal/State boundary and between Manasquan and Shark River Inlets. Two sand borrow sites also were located off southern New York. Sand Borrow Site 3 encompasses a shoal south of Long Beach Island. Sand Borrow Site 4 includes two shoreface-attached shoals seaward of the Federal/State boundary and south of Jones Beach. Both sand borrow sites off southern New York were characterized as Holocene sand and gravel ridges by the USGS.

Spatial data files then were added to the ArcView project to display the environmental features of concern relative to each sand borrow site. Buffer distances for the environmental features were developed (Table E-2). Environmental features that were present within the borrow sites were noted and buffer distances were applied to each feature (Figures E-2 to E-5). Environmental features present in the area are shown in Figures E-6 and E-7.

Limited buffer zones were added to appropriate environmental features with the goal of assisting the design of the biological field surveys (Table E-2). The objective of adding buffer zones and conducting the exclusionary mapping was to eliminate areas from biological sampling that would not be dredged, rather than to assist in resource protection. For artificial reefs, shipwrecks, and submarine cables, with positions that were uncertain or possibly can shift, a buffer distance of 300 m was used based on industry practice. Because confidence levels of environmental feature positions are variable and change with time, regulatory agencies should re-examine spatial data files and evaluate buffer zones in the future for specific dredging projects in the study area with the goal of protecting resources and avoiding conflicts.

Buffer areas for the environmental features were combined, then consolidated buffer areas were removed from each of the remaining sand borrow sites. Four final exclusionary maps depicting the original sand borrow sites along with the area remaining after the exclusionary mapping process were prepared (Figures E-2 to E-5) for the station selection process described in Section IV of this appendix and Section 6.0 of the main report. Table E-3 summarizes the results of the exclusionary mapping process including the reasons for the areas excluded (exclusionary features). After completing the exclusionary mapping process, the area remaining in each of the sand borrow sites was compared to the total area remaining to proportionately determine the number of available samples (sampling stations) to allocate to each sand borrow site. Station allocations for each sand borrow site resulting from the exclusionary mapping process are shown in Table E-4.

E4. FIELD SURVEY DESIGN

The primary objective of the field surveys (Survey 1, conducted in September 2001; Survey 2, conducted in June 2002) was to characterize benthic ecological conditions (i.e., sediment grain size, infauna, epifauna, and demersal fishes) in the four sand borrow sites off New Jersey and New York. Water column profile measurements also were collected. A secondary objective was to obtain descriptive data on sediment grain size and infauna in adjacent areas.

Spatial data and exclusionary mapping files were analyzed in ArcView to determine locations for sampling. The field survey design included Smith-McIntyre grab stations for collecting sediment and infauna; sediment profile imaging (SPI) camera stations for collecting images; mongoose trawl transects for collecting epifauna and demersal fishes; and Sea-Bird

water column profile stations for collecting measurements of conductivity, temperature, and dissolved oxygen.

For each survey, 30 stations originally were proposed for samples that would be analyzed for both sediment grain size and infauna. The following rationale was used to determine the number of sediment/infaunal samples that would be collected in the sand borrow sites and at adjacent stations (Table E-4). The results of applying this rationale are illustrated in Figures E-2 to E-5. The geographic and grid locations for the sediment/infaunal samples also are listed in Table E-5.

Of the 30 stations originally proposed for samples that would be analyzed for both sediment grain size and infauna, 6 stations were positioned adjacent to but outside of the sand borrow sites, leaving 24 stations to be located within the four borrow sites. Four of the 24 stations to be sampled within the four borrow sites were allocated for discretionary sample locations, so that areas of interest such as topographic highs that were not included in the random sampling would be sampled.

The six adjacent stations were randomly located near the sand borrow sites as illustrated in Figures E-2 to E-5. For Sites H1 and H2 off northern New Jersey (NJ), a rectangular area encompassing the two borrow sites was created as a polygon within ArcView, and the borrow sites within were excluded from selection. The remaining area was divided into three approximately equal cells, and a station then was randomly selected within each cell. These three adjacent (A) stations were labeled NJ-1, NJ-2, and NJ-3. This same process was repeated for Sites 3 and 4 off southern New York (NY), and the adjacent (A) stations were labeled NY-1, NY-2, and NY-3.

To determine the number of samples to collect in each sand borrow site during each survey for sediment grain size and infaunal analysis, the surface area and percent of the total surface area for each of the sand borrow sites were calculated after exclusionary mapping was completed (Table E-3). The percent of the total surface area remaining after exclusionary mapping for each of the sand borrow sites then was multiplied by 20 stations. This yielded 5 stations for Site H1, 2 stations for Site H2, 3 stations for Site 3, and 10 stations for Site 4 (Table E-4). To allow for a minimum of three samples per borrow site, one sample was deducted from Site 4 and added to Site H2 so that there would be nine and three stations in each of these sand borrow sites, respectively.

Attention then was directed to selecting locations for the sediment grain size and infaunal samples. The goal in placement of the stations was to provide broad spatial and depth coverage within the sand borrow sites and, at the same time, ensure that the samples would be independent of one another to satisfy statistical assumptions. To accomplish this goal, a sampling approach was used to provide broad spatial and depth coverage of the target populations. Each sand borrow site was divided into smaller cells of approximately equal areas. The number of cells depended on the number of samples allocated for the sand borrow site. One sampling station then was randomly placed within each cell of each sand borrow site. Randomizing within grid cells eliminated biases that could be introduced by unknown spatial periodicities in a sampling area. This sampling approach resulted in designation of 20 sediment grain size and infaunal sample locations within the four borrow sites.

The 20 locations for collecting samples that would be analyzed for sediment grain size and infauna then were examined to determine where best to place the 4 discretionary stations. Because the 20 locations were randomly located, there were cases where isobaths indicated

that high points of shoals would not be sampled. Therefore, the remaining four discretionary stations were located on the tops of shoals in Sand Borrow Sites H1, H2, 3, and 4 (Figures E-2 to E-5).

Twelve SPI camera stations were available to collect images during Survey 1. Two photographs were planned for each station. Based on percent of the total surface area of each sand borrow site remaining after exclusionary mapping, the SPI camera stations were assigned to the sand borrow sites as follows: three stations in Site H1, one station in Site H2, two stations in Site 3, and six stations in Site 4. For comparative purposes, the SPI camera stations were located at the same positions as some of the sediment/infaunal stations (there were no SPI camera stations that were not associated with sediment/infaunal stations). The allocated SPI camera stations were selected randomly from the previously located sediment/infaunal stations using a random number generator within a spreadsheet (Figures E-2 to E-5; Table E-5).

Six trawl transects for epifauna and demersal fishes originally were proposed for each survey. Two trawl transects were assigned to both Sand Borrow Sites H1 and 4, and one trawl transect was allotted to both Sand Borrow Sites H2 and 3, for a total of six trawls per survey. Transect locations were assigned manually to attempt to cross isobaths and maximize characterization of existing assemblages with respect to water depth (Figures E-2 to E-5).

Six water column profiles originally were proposed for each survey. A water column profile was made at the beginning point of each trawl transect prior to actual trawling (Figures E-2 to E-5).

After completing the field survey design, the geographic and UTM grid locations of the sampling locations were exported from ArcView, assembled in an Excel file, and provided to the survey team for use with the field survey navigation and positioning software Hypack. Upon completion of the ArcView project, the project files and shapefiles were placed on CD-ROM and submitted to the MMS as a deliverable.

Table E4-1. Primary spatial data files according to environmental feature, data source, and data format.

Environmental Feature	Data Source	Source Data Format
Sand Borrow Sites	ACRE	Shapefile
Identified Shoal Fields		Not Available
Bathymetry (Depth Contours or Isobaths)	ACRE	Shapefile/DXF File
Natural Reefs (Hard Bottom, Potential Hard Bottom)		Not Available
Artificial Reefs	NJDEP, NYDEC	Shapefile; WP table
Disposal Sites (Ocean Dredged Material Disposal Sites)	EPA	Shapefile
Shipwrecks	NOS	dBase File
Submarine Cables	NOAA Chart	Manually Digitized
Shipping Traffic Separation Schemes (Shipping Lanes)	NOAA Chart	Shapefile
Military Firing Fans (Military/NASA Warning Areas)	U.S. Navy Fleet Area/Training Directory	Manually digitized
Distribution of Sediment Types		Not Available
Distribution and Location of Infauna and Epifauna		Not Available
Fishing Areas	NJDEP	Manually Digitized
Essential Fish Habitat		Not Available
Endangered and Threatened Species		Not Available
3-nmi Federal/State Boundary	NOS	Shapefile
Aids to Navigation	USCG	dBase File
State Boundaries	ESRI	Shapefile
Shoreline	NOS	Shapefile

ACRE = Applied Coastal Research and Engineering, Inc.
EPA = Environmental Protection Agency.
ESRI = Environmental Systems Research Institute, Inc.
NASA = National Aeronautics and Space Administration.
NJDEP = New Jersey Department of Environmental Protection.
NOAA = National Oceanic and Atmospheric Administration.
NOS = National Ocean Survey.
NYDEC = New York Department of Environmental Conservation.
USCG = U.S. Coast Guard.
WP = WordPerfect.

Table E4-2. Environmental features and buffer zones for exclusionary mapping*.

Environmental Feature	Buffer Zone	Rationale For Exclusion
Seaward of 30-m Contour	None/Complete Exclusion	Sand extraction would not be done in areas deeper than 30 m (industry practice)
Artificial Reefs and Designated Artificial Reef Areas	300 m	Need to avoid during sand extraction because of safety concerns and to protect fish habitat from anchor damage
Ocean Dredged Material Disposal Sites	None/Complete Exclusion	Sand extraction would not be done in disposal sites because of sediment quality concerns
Shipwrecks	300 m	Need to avoid during sand extraction because of safety concerns and to protect cultural resources from anchor damage
Submarine Cables	300 m	Need to avoid during sand extraction because of safety concerns and to protect cables from anchor damage
Shipping Lanes	None	Mapped but not excluded
Military/NASA Warning Areas	None	Mapped but not excluded
State Waters Within 3-nmi Federal/State Boundary	None/Complete Exclusion	MMS determined that no sampling was to occur within State waters
Aids to Navigation	300 m	Need to avoid during sand extraction because of safety concerns and to protect navigation aids from anchor damage
Protected Areas	300 m	Absent in area, not mapped

* The objective of adding limited buffer zones and conducting the exclusionary mapping was to assist in designing the biological field surveys by eliminating areas from sampling that would not be dredged, rather than to assist in the goal of resource protection. Because confidence levels of environmental feature positions are variable and change with time, regulatory agencies should re-examine spatial data files and evaluate buffer zones in the future for specific dredging projects in the study area with the goal of protecting resources and avoiding conflicts.

Table E4-3. Summary of results of exclusionary mapping and reasons for exclusion.

Sand Borrow Site	Original Area (m^2)	Area Excluded (m^2)	Percent Area Excluded	Remaining Area (m^2)	Percent Area Remaining	Percent of Total Area	Reason(s) for Exclusion
H1	14,396,106	5,767,095	40	8,629,011	60	25	Artificial Reef, Shipwrecks
H2	3,260,292	0	0	3,260,293	100	9	None
3	9,396,362	4,336,973	46	5,059,390	54	15	Artificial Reef, Submarine Cable
4	22,429,884	4,494,857	20	17,935,028	80	51	Submarine Cable
TOTAL	49,482,646	14,598,924	30	34,883,722	70	100	

Table E4-4. Summary of rationale for allocating sediment grain size and infaunal samples for each survey.

Sand Borrow Site	Percent of Total Area Remaining After Exclusionary Mapping	Sediment Grain Size/Infaunal Samples			
		Based on 20 Total Samples	Discretionary Samples*		Adjacent Samples
			Adjustment for 3 Sample Minimum	Adjustment to Sample Shoals	
H1	25	5	5	1	3
H2	9	2	3	1	
3	15	3	3	1	3
4	51	10	9	1	
TOTAL	100	20	20	4	6

* Out of 30 samples in the budget, three samples each were allocated to sampling areas adjacent to the New Jersey and New York sand borrow sites. A discretionary sample was allocated for each sand borrow site. This left 20 samples to be allocated to sand borrow sites based on the proportion of the size of each borrow site to the total area of all sites.

Table E4-5. Geographic and Universal Transverse Mercator grid coordinates of sediment/infaunal stations and sediment profile imaging (SPI) stations.

Station Type	Site	Station* Code	SPI Collected	Latitude	Longitude	Northing**	Easting
Random	H1	S1-H1-1	X	40.11841	-73.93110	4,441,447	591,084
Random	H1	S1-H1-2	X	40.12022	-73.92515	4,441,654	591,589
Random	H1	S1-H1-3		40.13567	-73.90914	4,443,386	592,932
Random	H1	S1-H1-4	X	40.15118	-73.90697	4,445,110	593,096
Random	H1	S1-H1-5		40.15579	-73.89016	4,445,639	594,521
Discretion	H1	S1-H1-6		40.11521	-73.93272	4,441,090	590,950
Random	H2	S1-H2-1		40.18547	-73.92540	4,448,896	591,480
Random	H2	S1-H2-2		40.18705	-73.93060	4,449,067	591,035
Random	H2	S1-H2-3	X	40.19787	-73.93345	4,450,265	590,778
Discretion	H2	S1-H2-4		40.19134	-73.93815	4,449,535	590,387
Adjacent	NJ	S1-NJ-A1		40.13071	-73.94590	4,442,797	589,807
Adjacent	NJ	S1-NJ-A2		40.15602	-73.93426	4,445,619	590,765
Adjacent	NJ	S1-NJ-A3		40.17380	-73.89342	4,447,635	594,218
Random	3	S1-03-1	X	40.53033	-73.65681	4,487,488	613,764
Random	3	S1-03-2		40.51892	-73.63172	4,486,254	615,909
Random	3	S1-03-3	X	40.51168	-73.61693	4,485,470	617,174
Discretion	3	S1-03-4		40.51151	-73.62584	4,485,439	616,420
Random	4	S1-04-1	X	40.53805	-73.49534	4,488,566	627,426
Random	4	S1-04-2		40.53041	-73.47366	4,487,749	629,277
Random	4	S1-04-3	X	40.52716	-73.42969	4,487,454	633,007
Random	4	S1-04-4	X	40.53908	-73.48536	4,488,695	628,269
Random	4	S1-04-5		40.52986	-73.45161	4,487,721	631,145
Random	4	S1-04-6	X	40.54522	-73.45159	4,489,426	631,117
Random	4	S1-04-7	X	40.54997	-73.41977	4,490,001	633,802
Random	4	S1-04-8	X	40.54265	-73.39982	4,489,219	635,506
Random	4	S1-04-9		40.54129	-73.38882	4,489,085	636,441
Discretion	4	S1-04-10		40.54598	-73.43551	4,489,534	632,477
Adjacent	NY	S1-NY-A1		40.52976	-73.60210	4,487,497	618,399
Adjacent	NY	S1-NY-A2		40.54321	-73.55397	4,489,056	622,451
Adjacent	NY	S1-NY-A3		40.50956	-73.44893	4,485,471	631,412

* S1 = Survey 1; S2 = Survey 2.
** In meters, Universal Transverse Mercator, Zone 18, North American Datum 1983.
NJ New Jersey.
NY New York.

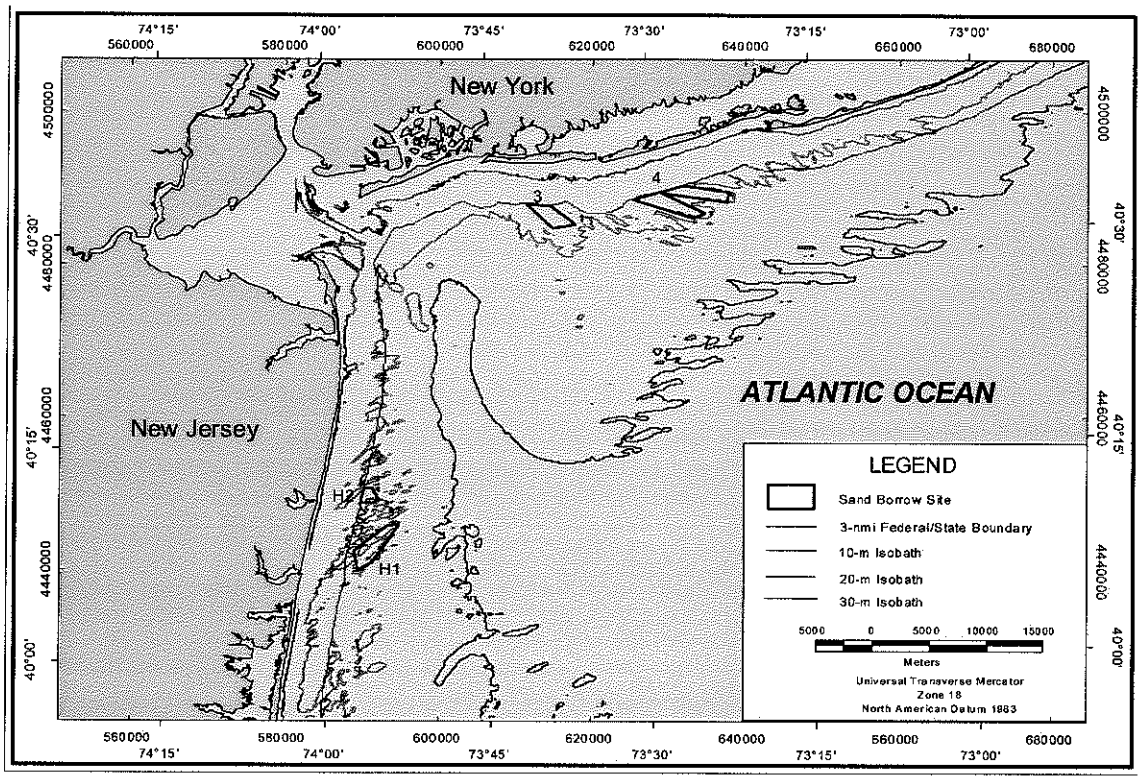

Figure E4-1. Sand Borrow Sites H1, H2, 3 and 4 offshore New Jersey and New York.

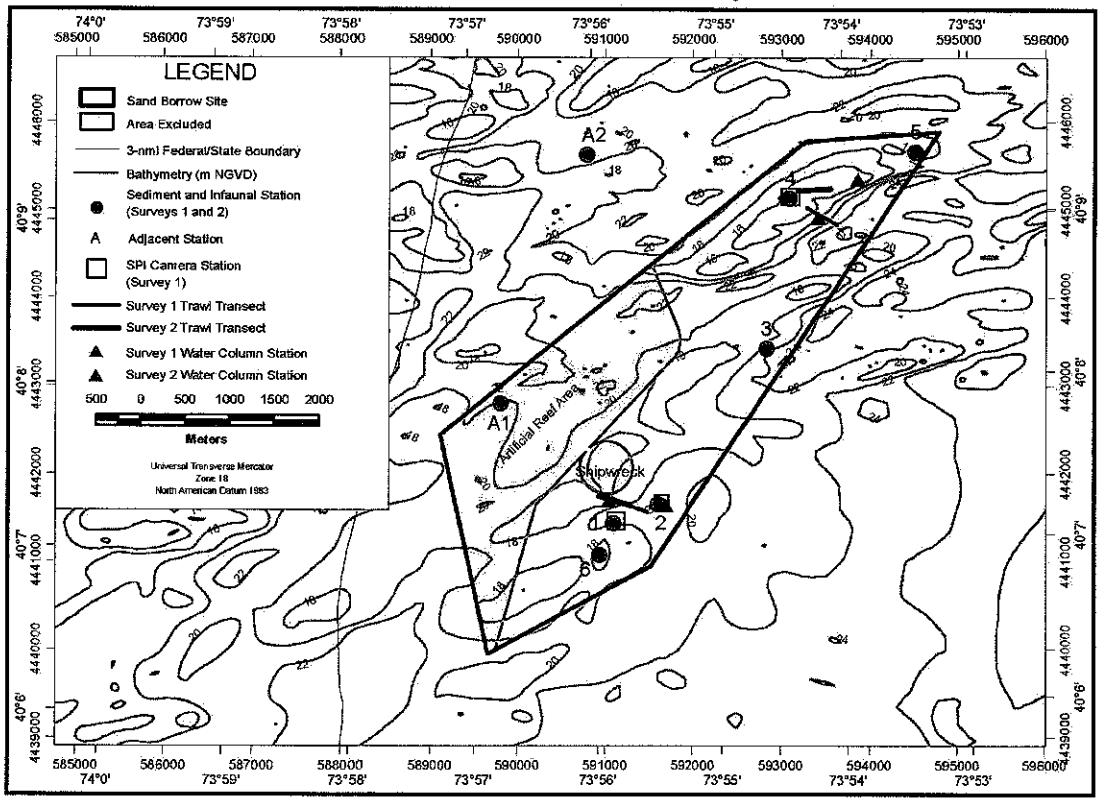

Figure E4-2. Environmental features, area excluded, and sampling stations relative to Sand Borrow Site H1 offshore New Jersey.

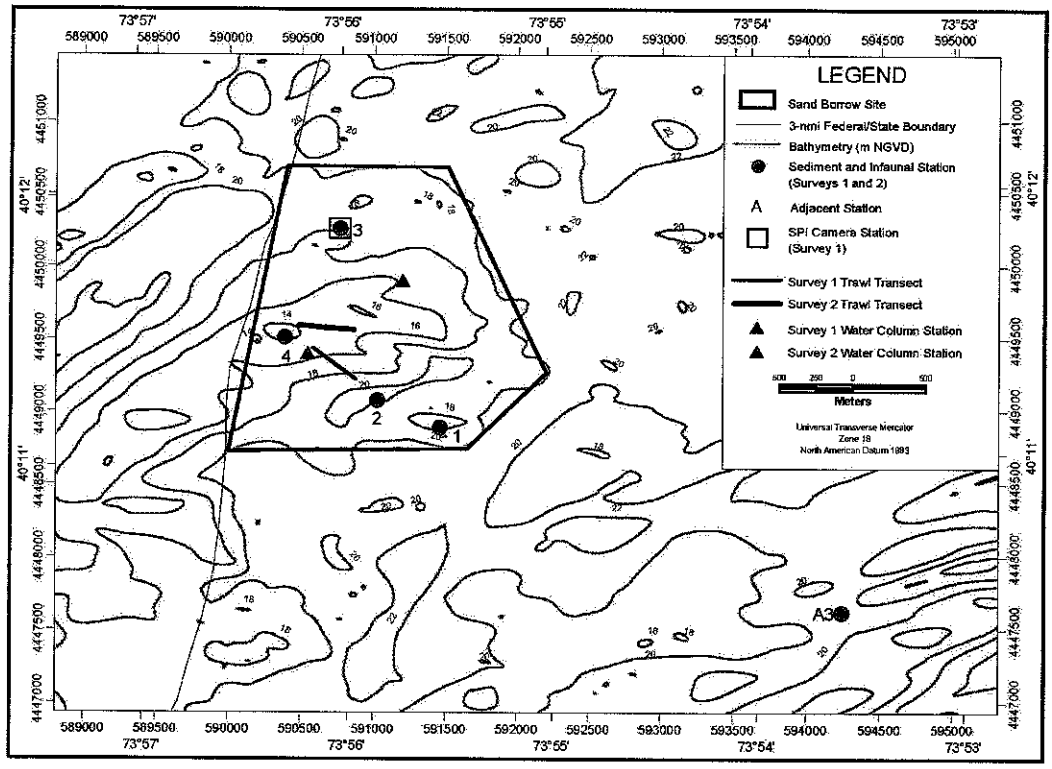

Figure E4-3. Environmental features and sampling stations relative to Sand Borrow Site H2 offshore New Jersey.

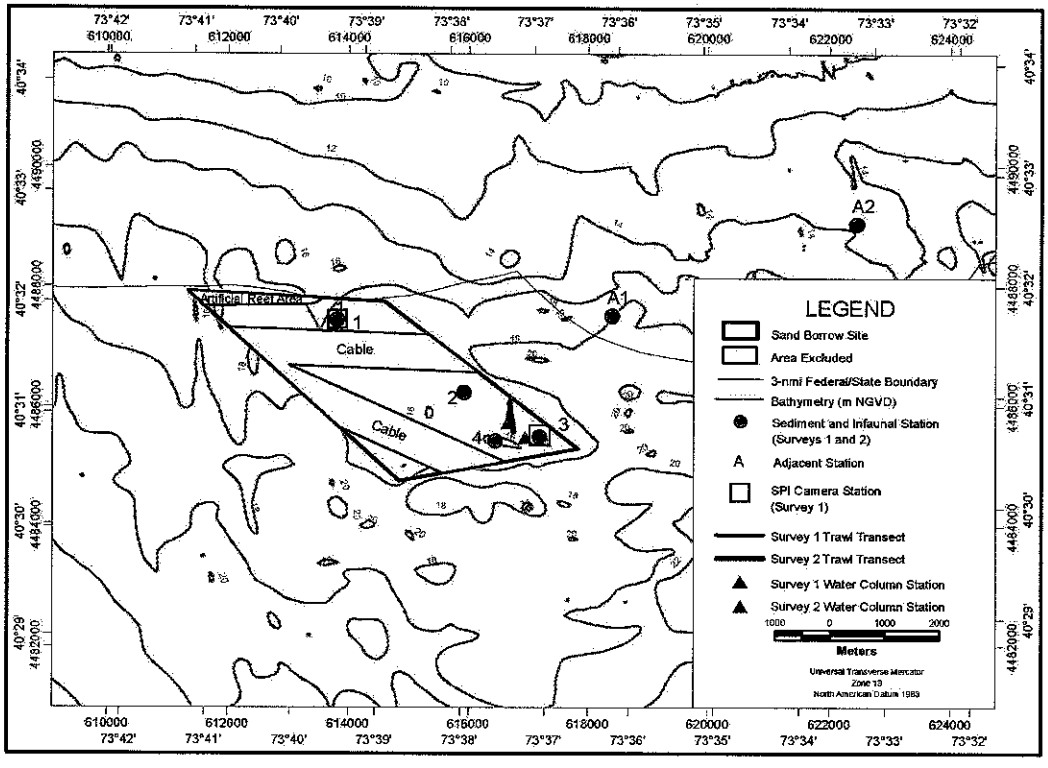

Figure E4-4. Environmental features, area excluded, and sampling stations relative to Sand Borrow Site 3 offshore New York.

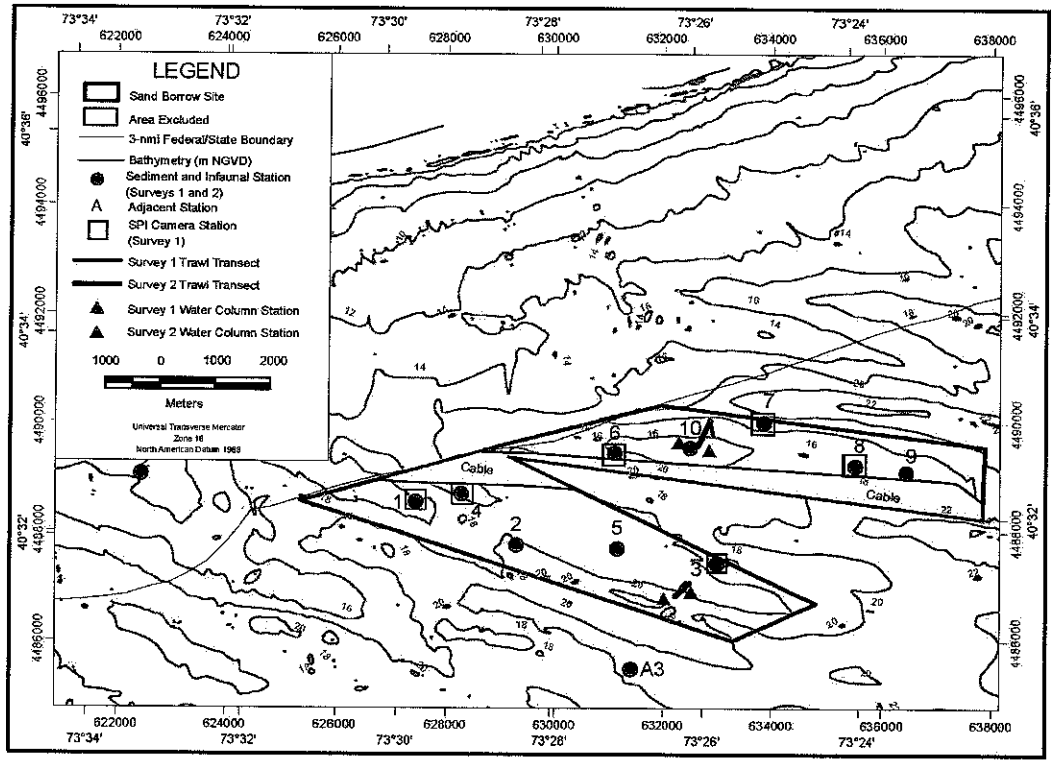

Figure E4-5. Environmental features, area excluded and sampling stations relative to Sand Borrow Site 4 offshore New York.

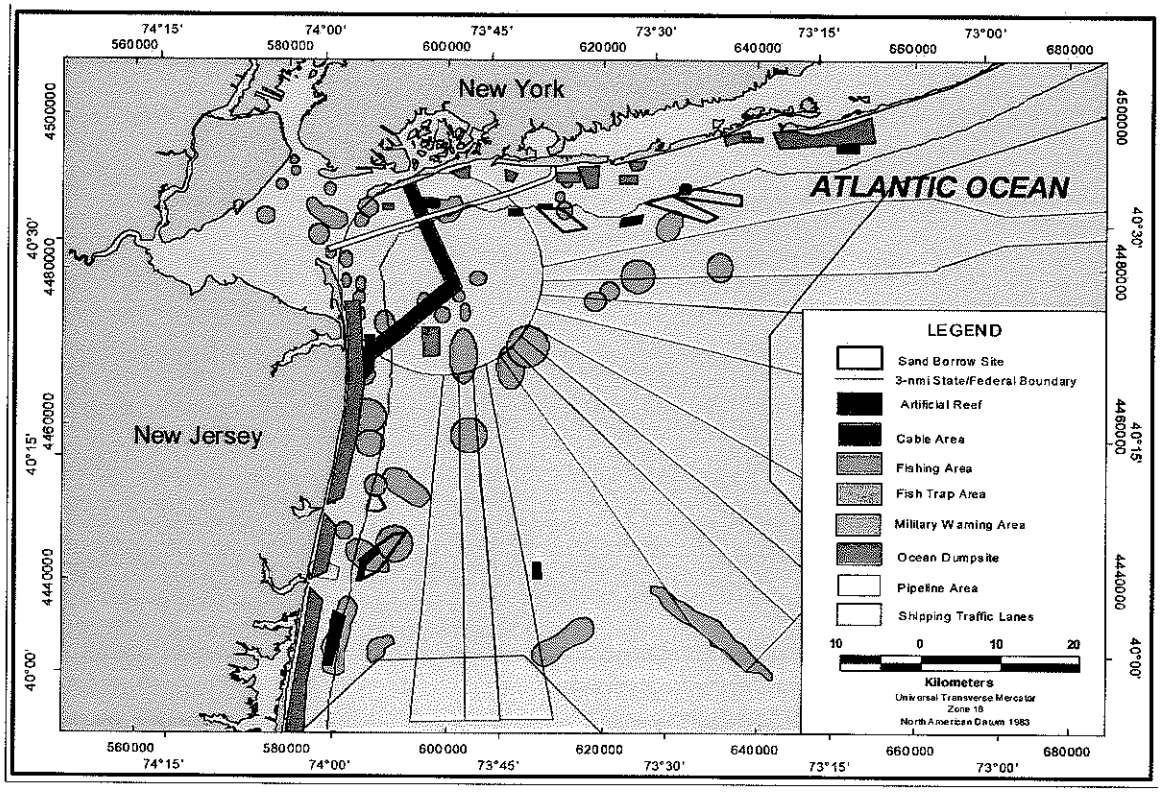

Figure E4-6. Selected environmental features present in the study area.

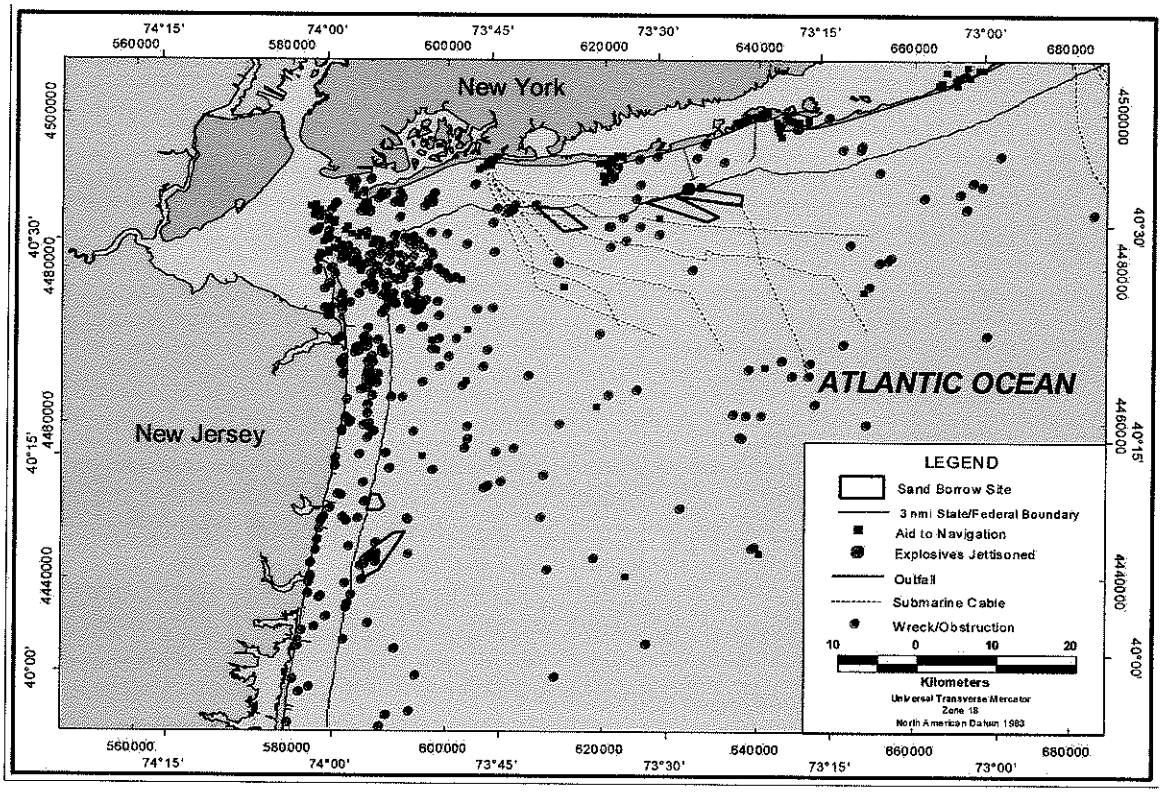

Figure E4-7. Additional environmental features present in the study area.