

Figure 6-11: +0.625 meter LIDAR elevation contour comparison for 1997 and 1998 at White Point Swash.

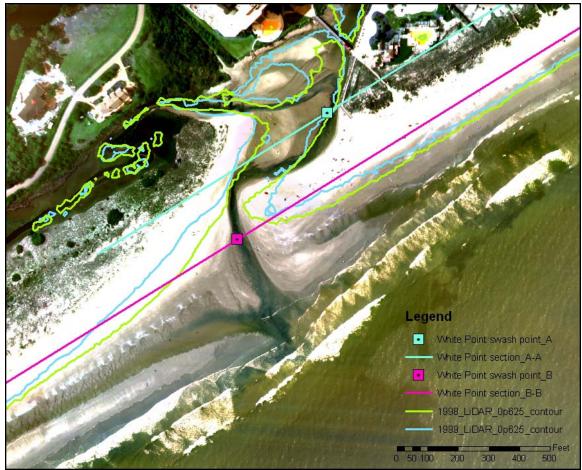


Figure 6-12: +0.625 meter LIDAR elevation contour comparison for 1998 and 1999 at White Point Swash.

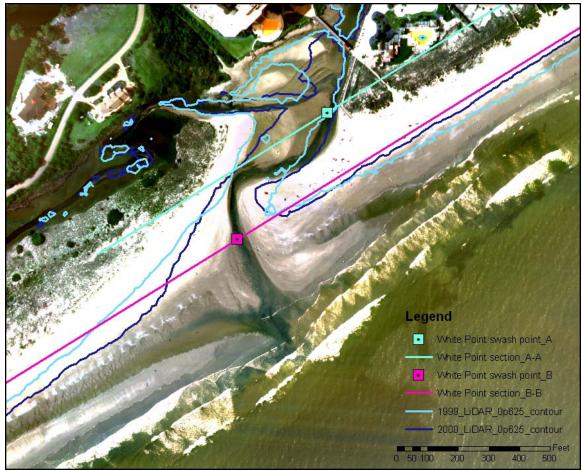


Figure 6-13: +0.625 meter LIDAR elevation contour comparison for 1999 and 2000 at White Point Swash.

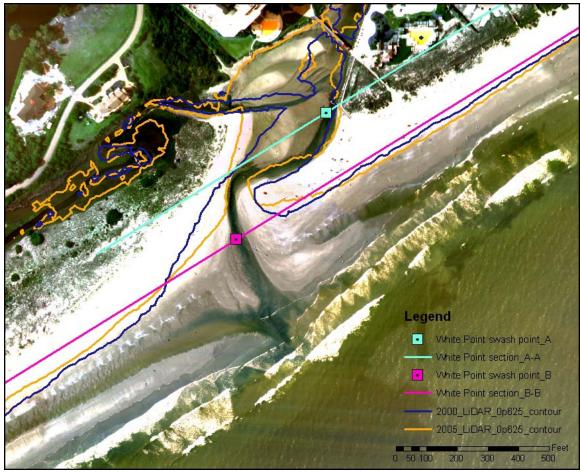


Figure 6-14: +0.625 meter LIDAR elevation contour comparison for 2000 and 2005 at White Point Swash.

0.625 meter	Section A-A		Section B-B	
contour	Distance to	Distance to	Distance to	Distance to
	Right bank	Left Bank	Right bank	Left Bank
LIDAR Date	(meters)	(meters)	(meters)	(meters)
1996	n/a	n/a	-253.8	26.1
1997	-1.7	110.9	-55.2	124.8
1998	-7.5	90.7	-34.3	70.5
1999	-10.5	110.6	-61.6	164.5
2000	-10.8	105.0	-47.3	83.0
2005	-12.8	114.2	-78.0	86.1

 Table 6-3: Summary of measured changes to +0.625 meter LIDAR elevation contour at White Point Swash.

0.625 meter	Section A-A		Section B-B	
contour	Difference in	Difference in	Difference in	Difference in
	Right bank	Left Bank	Right bank	Left Bank
LIDAR Date	(meters)	(meters)	(meters)	(meters)
1996				
1997			198.6	98.7
1998	-5.8	-20.2	20.9	-54.3
1999	-3	19.9	-27.3	94
2000	-0.3	-5.6	14.3	-81.5
2005	-2	9.2	-30.7	3.1

0.625 meter	Section A-A		Section B-B	
contour	Cumulative	Cumulative	Cumulative	Cumulative
	Difference in	Difference in	Difference in	Difference in
LIDAR Date	Right bank (m)	Left bank (m)	Right bank (m)	Left bank (m)
1996				
1997			198.6	98.7
1998	-5.8	-20.2	219.5	44.4
1999	-8.8	-0.3	192.2	138.4
2000	-9.1	-5.9	206.5	56.9
2005	-11.1	3.3	175.8	60

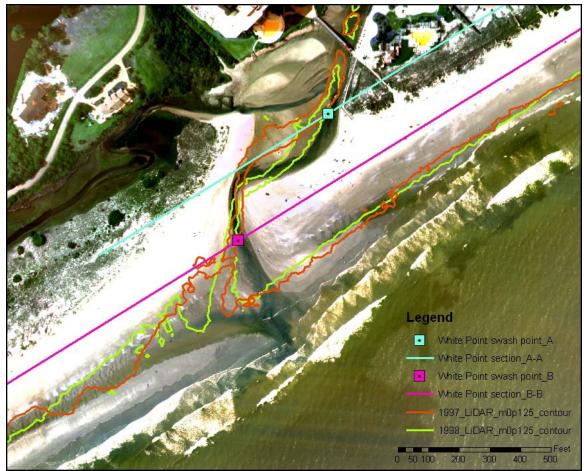


Figure 6-15: -0.125 meter LIDAR elevation contour comparison for 1997 and 1998 at White Point Swash.

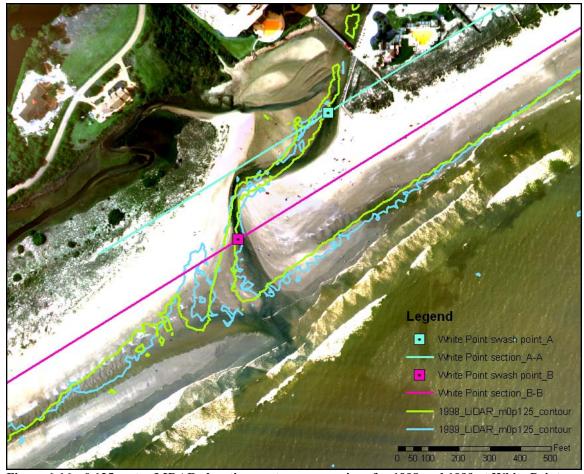


Figure 6-16: -0.125 meter LIDAR elevation contour comparison for 1998 and 1999 at White Point Swash.

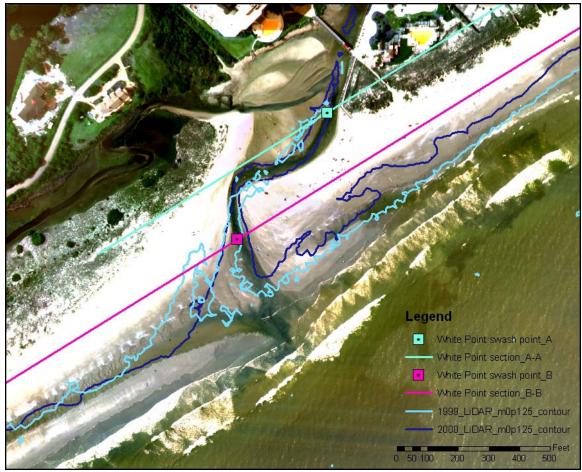


Figure 6-17: -0.125 meter LIDAR elevation contour comparison for 1999 and 2000 at White Point Swash.

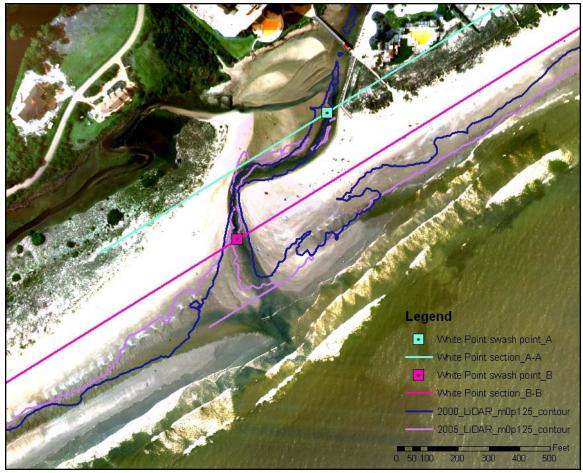


Figure 6-18: -0.125 meter LIDAR elevation contour comparison for 2000 and 2005 at White Point Swash.

-0.125 meter	Section A-A		Section B-B	
contour	Distance to	Distance to	Distance to	Distance to
	Right bank	Left Bank	Right bank	Left Bank
LIDAR Date	(meters)	(meters)	(meters)	(meters)
1996	n/a	n/a	n/a	n/a
1997	11.5	106.8	0	16.0
1998	0	36.7	4.0	18.2
1999	n/a	n/a	-1.2	19.8
2000	-2.1	17.9	-12.1	17.4
2005	n/a	n/a	7.5	13.8

 Table 6-4: Summary of measured changes to -0.125 meter LIDAR elevation contur at White Point Swash.

-0.125 meter	Section A-A		Section B-B	
contour	Difference in	Difference in	Difference in	Difference in
	Right bank	Left Bank	Right bank	Left Bank
LIDAR Date	(meters)	(meters)	(meters)	(meters)
1996				
1997				
1998	-11.5	-70.1	4	2.2
1999			-5.2	1.6
2000	-2.1	-18.8	-10.9	-2.4
2005			19.6	-3.6

-0.125 meter	Section A-A		Section B-B	
contour	Cumulative	Cumulative	Cumulative	Cumulative
	Difference in	Difference in	Difference in	Difference in
LIDAR Date	Right bank (m)	Left bank (m)	Right bank (m)	Left bank (m)
1996				
1997				
1998	-11.5	-70.1	4	2.2
1999			-1.2	3.8
2000			-12.1	1.4
2005			7.5	-2.2

# 7. APPENDIX B: Aerial Photographs

### Singleton Swash Aerial Photos



Figure 7-1: 1983 Aerial Photograph at Singleton Swash with approximated MHW line.

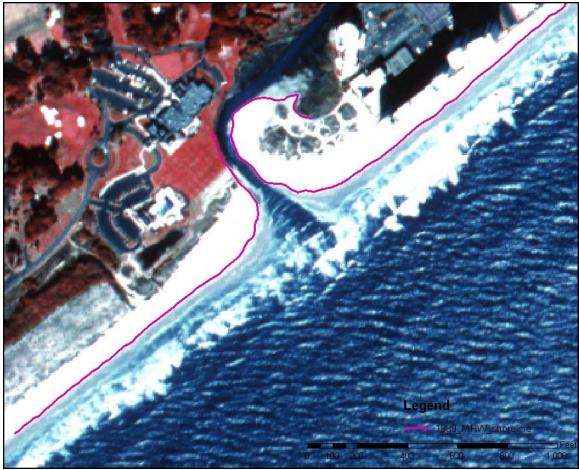


Figure 7-2: 1989 Aerial Photograph at Singleton Swash with approximated MHW line.

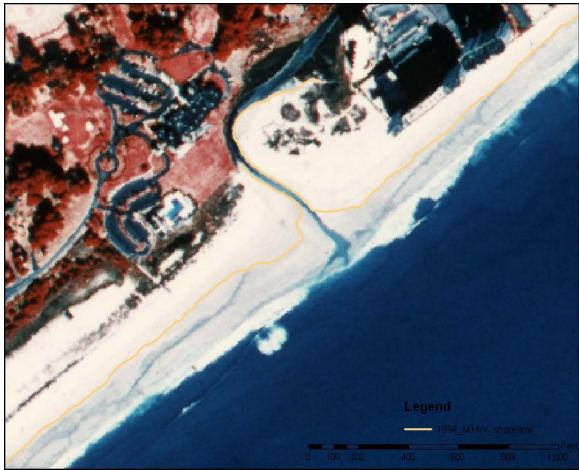


Figure 7-3: 1994 Aerial Photograph at Singleton Swash with approximated MHW line.

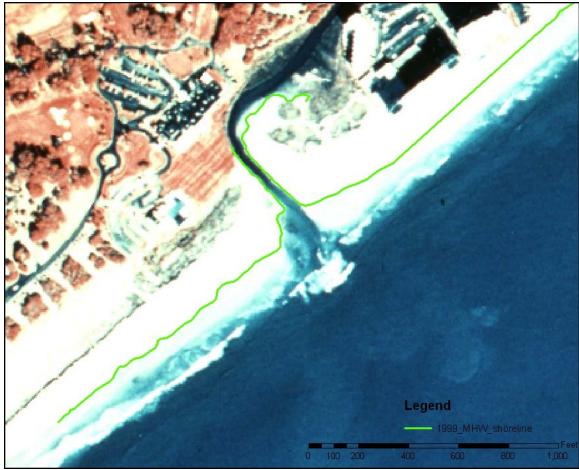


Figure 7-4: 1999 Aerial Photograph at Singleton Swash with approximated MHW line.



Figure 7-5: 2006 Aerial Photograph at Singleton Swash with approximated MHW line.



Figure 7-6: Approximated MHW lines at Singleton Swash for 1983-2006 on 2006 Aerial Photograph.

### White Point Swash Aerial Photos

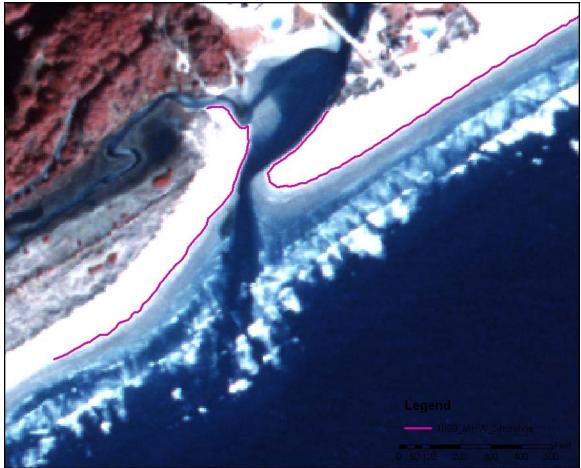


Figure 7-7: 1989 Aerial Photograph at White Point Swash with approximated MHW line.

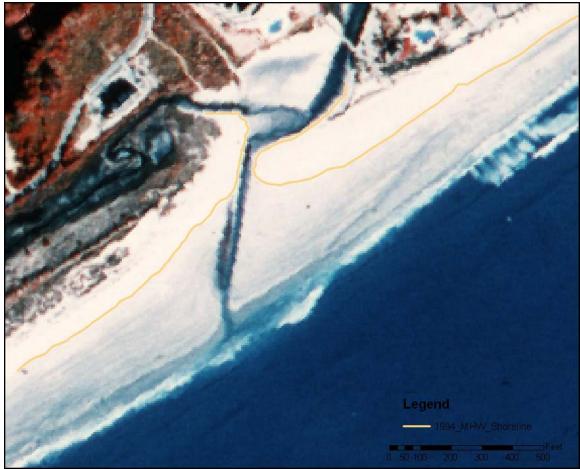


Figure 7-8: 1994 Aerial Photograph at White Point Swash with approximated MHW line.



Figure 7-9: 1999 Aerial Photograph at White Point Swash with approximated MHW line.



Figure 7-10: 2006 Aerial Photograph at White Point Swash with approximated MHW line.

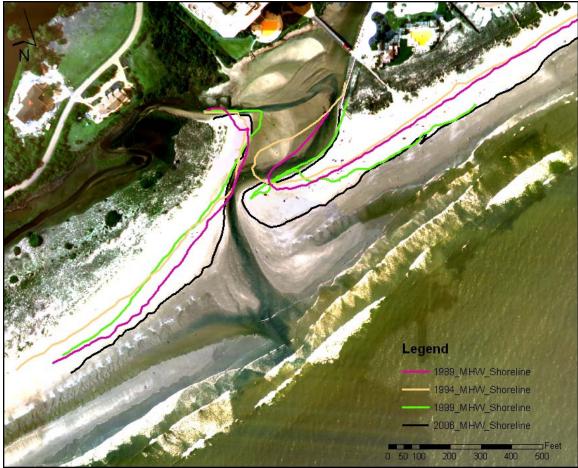


Figure 7-11: Approximated MHW lines at White Point Swash for 1989-2006 on 2006 aerial photograph.

## 8. APPENDIX C: Profile Figures

#### **Singleton Swash Profile Comparison Figures**

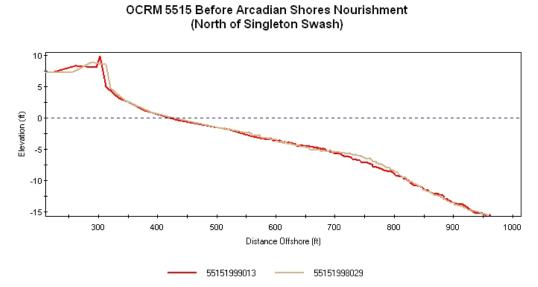


Figure 8-1: Beach profiles north of Singleton Swash at OCRM 5515 prior to Arcadian Shores nourishment project.

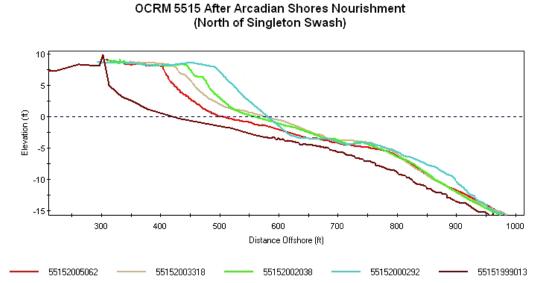
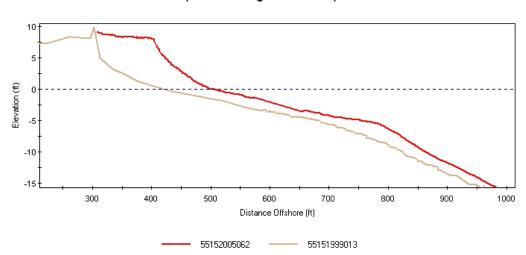


Figure 8-2: Beach profiles north of Singleton Swash at OCRM 5515 after Arcadian Shores nourishment project.



OCRM 5515 Before and After Arcadian Shores Nourishment (North of Singleton Swash)

Figure 8-3: Beach profiles north of Singleton Swash at OCRM 5515 prior to and after Arcadian Shore nourishment project.

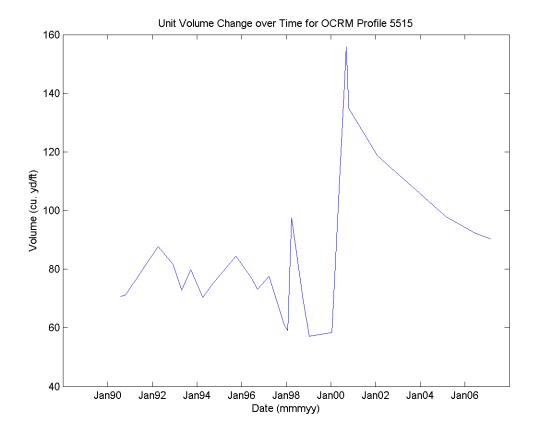


Figure 8-4: Unit Volume Change (cu.yd/ft) over time for OCRM Profile 5515 (North of Singleton Swash).

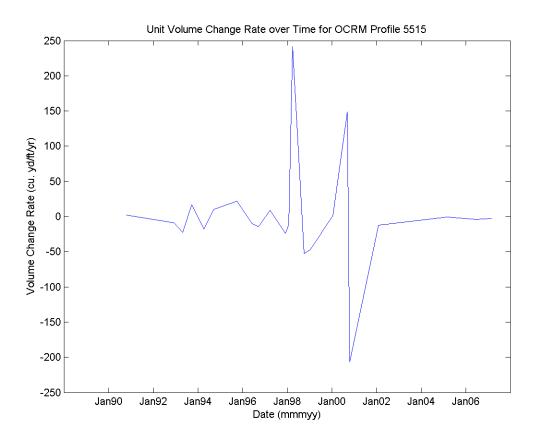


Figure 8-5: Unit Volume Change Rate (cu.yd/ft/yr) over time for OCRM Profile 5515 (North of Singleton Swash).

OCRM 5513 Before Arcadian Shores Nourishment

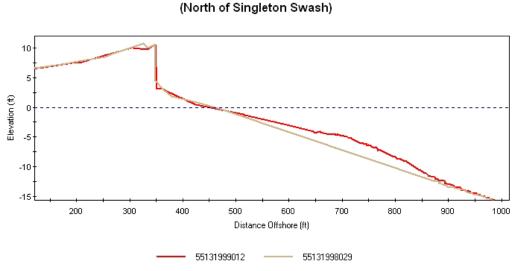
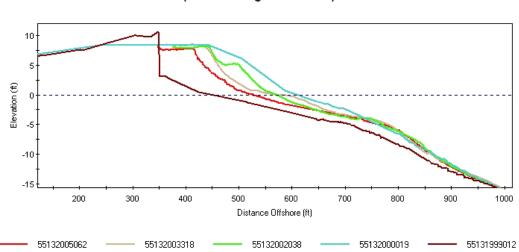
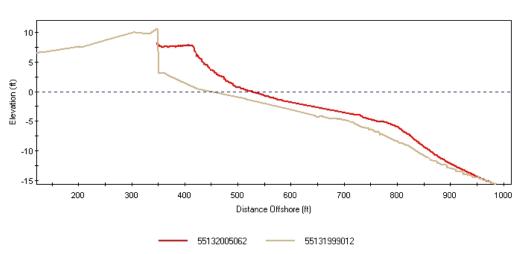


Figure 8-6: Beach profiles north of Singleton Swash at OCRM 5513 prior to Arcadian Shore nourishment project.



OCRM 5513 After Arcadian Shores Nourishment (North of Singleton Swash)

Figure 8-7: Beach profiles north of Singleton Swash at OCRM 5513 after Arcadian Shores nourishment project.



OCRM 5513 Before and After Arcadian Shores Nourishment (North of Singleton Swash)

Figure 8-8: Beach profiles north of Singleton Swash at OCRM 5513 prior to and after Arcadian Shore nourishment project.

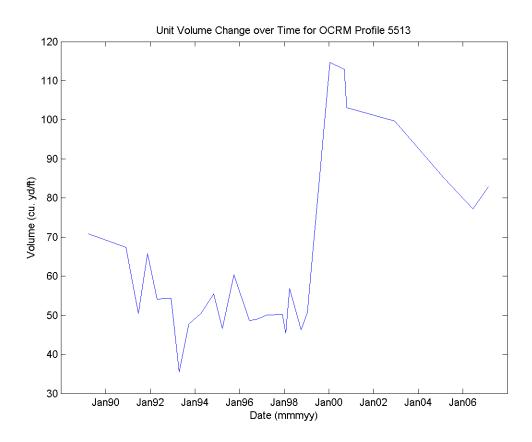


Figure 8-9: Unit Volume Change (cu.yd/ft) over time for OCRM Profile 5513 (North of Singleton Swash).

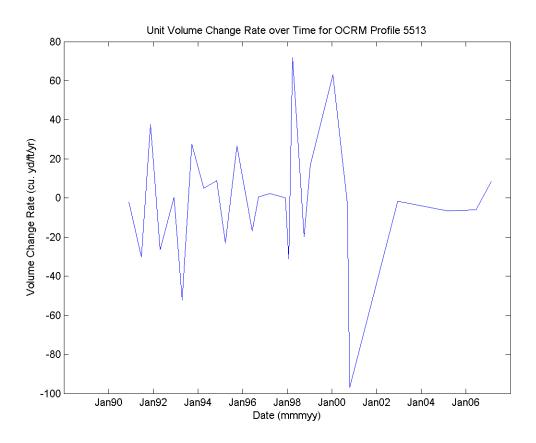


Figure 8-10: Unit Volume Change Rate (cu.yd/ft/yr) for OCRM Profile 5513 (North of Singleton Swash).

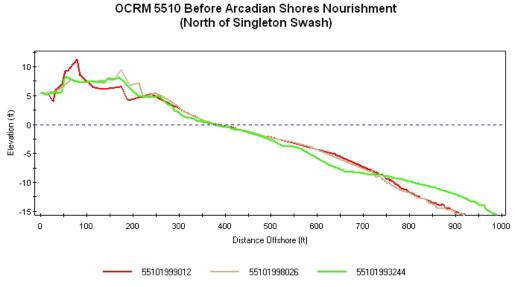


Figure 8-11: Beach profiles north of Singleton Swash at OCRM 5510 prior to Arcadian Shores nourishment project.

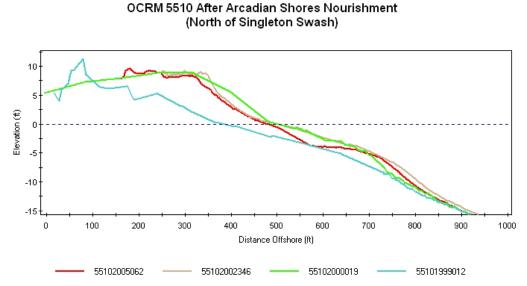
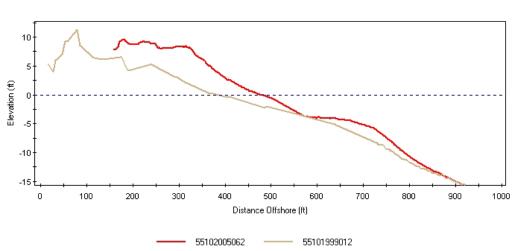


Figure 8-12: Beach profiles north of Singleton Swash at OCRM 5510 after Arcadian Shores nourishment project.



OCRM 5510 Before and After Arcadian Shores Nourishment (North of Singleton Swash)

Figure 8-13: Beach profiles north of Singleton Swash at OCRM 5510 prior to and after Arcadian Shores nourishment project.

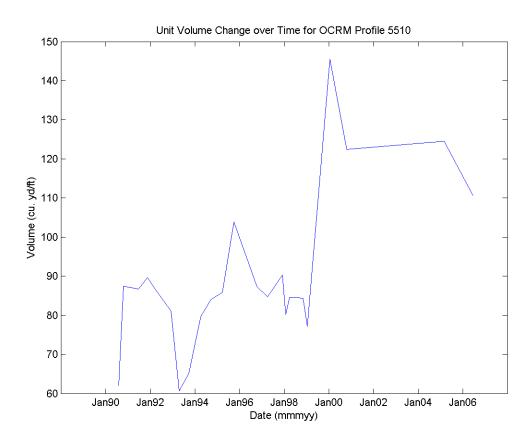


Figure 8-14: Unit Volume Change (cu.yd/ft) over time for OCRM Profile 5510 (North of Singleton Swash).

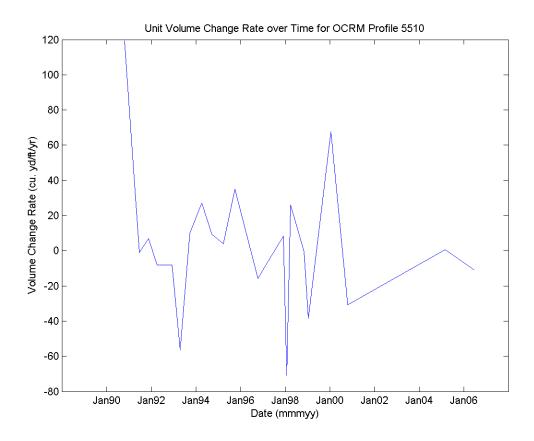


Figure 8-15: Unit Volume Change Rate (cu.yd/ft/yr) over time for OCRM Profile 5510 (North of Singleton Swash).

OCRM 5505 Before Arcadian Shores Nourishment

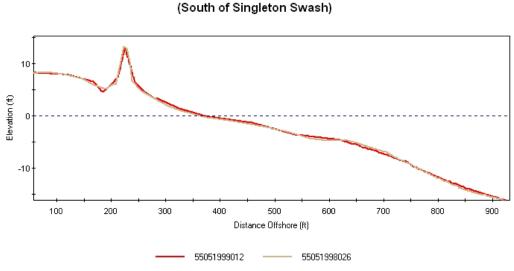


Figure 8-16: Beach profiles south of Singleton Swash at OCRM 5505 prior to Arcadian Shores nourishment project.

#### OCRM 5505 After Arcadian Shores Nourishment (South of Singleton Swash)

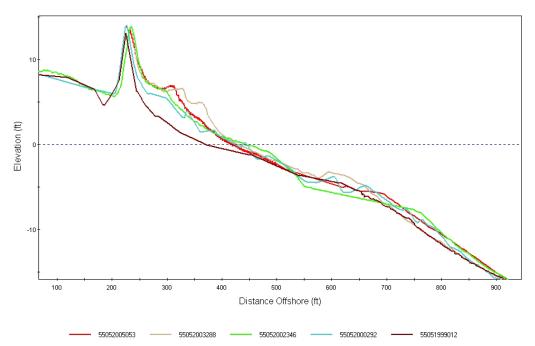


Figure 8-17: Beach profiles south of Singleton Swash at OCRM 5505 after Arcadian Shores nourishment project.

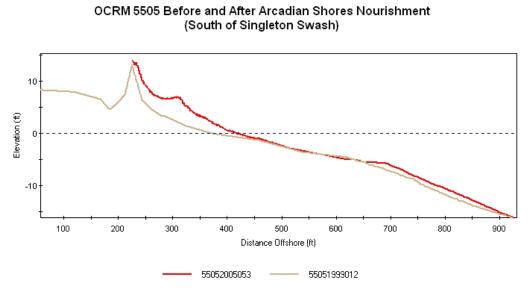


Figure 8-18: Beach profiles south of Singleton Swash at OCRM 5505 prior to and after Arcadian Shores nourishment project.

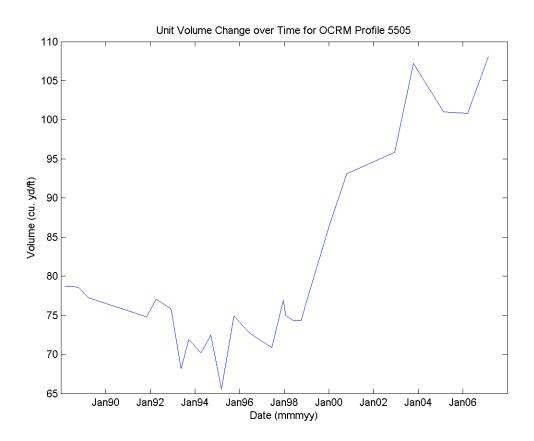


Figure 8-19: Unit Volume Change (cu.yd/ft) over time for OCRM Profile 5505 (South of Singleton Swash).

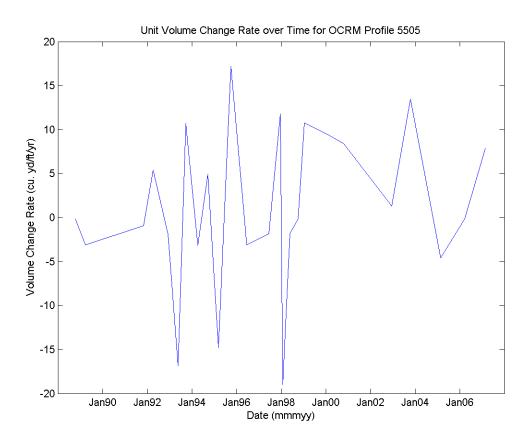


Figure 8-20: Unit Volume Change Rate (cu.yd/ft/yr) over time for OCRM Profile 5505 (South of Singleton Swash).

#### OCRM 5500 Before Arcadian Shores Nourishment (South of Singleton Swash)

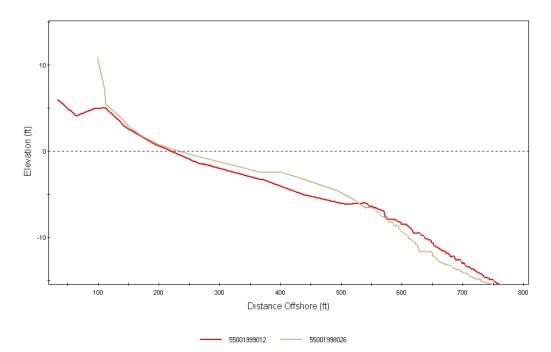


Figure 8-21: Beach profiles south of Singleton Swash at OCRM 5500 prior to Arcadian Shores nourishment project.

OCRM 5500 After Arcadian Shores Nourishment

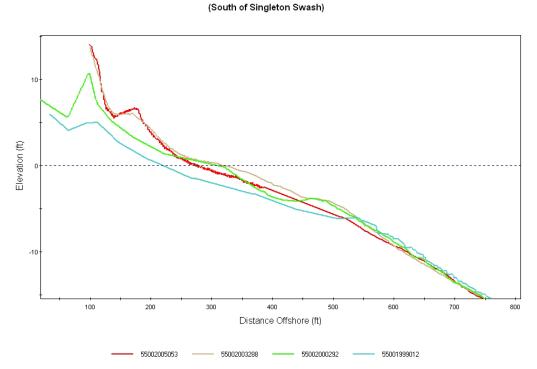


Figure 8-22: Beach profiles south of Singleton Swash at OCRM 5500 after Arcadian Shores nourishment project.

OCRM 5500 Before and After Arcadian Shores Nourishment (South of Singleton Swash)

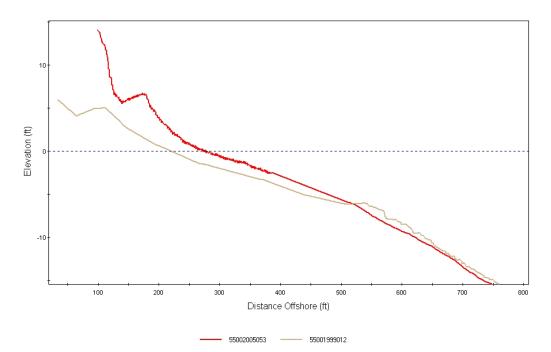


Figure 8-23: Beach profiles south of Singleton Swash at OCRM 5500 prior to and after Arcadian Shores nourishment project.

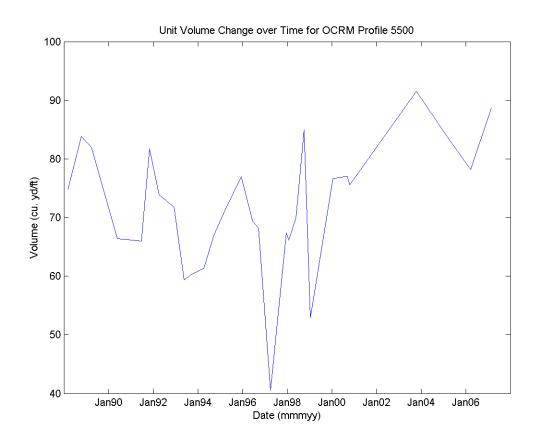


Figure 8-24: Unit Volume Change (cu.yd/ft) over time at OCRM Profile 5500 (South of Singleton Swash).

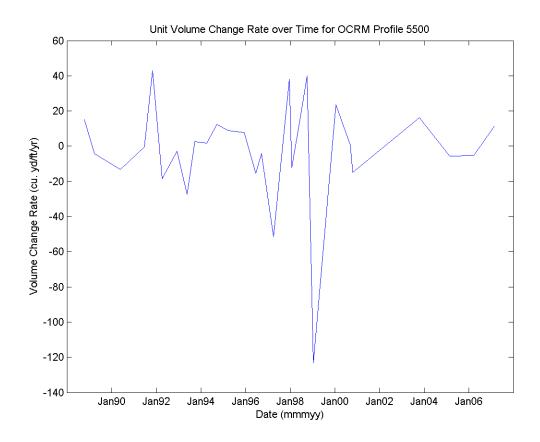


Figure 8-25: Unit Volume Change Rate (cu.yd/ft/yr) over time at OCRM Profile 5500 (South of Singleton Swash).



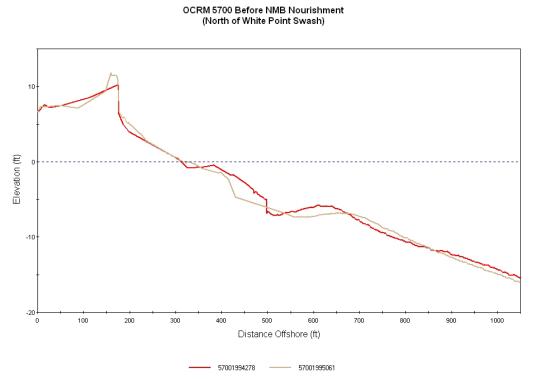
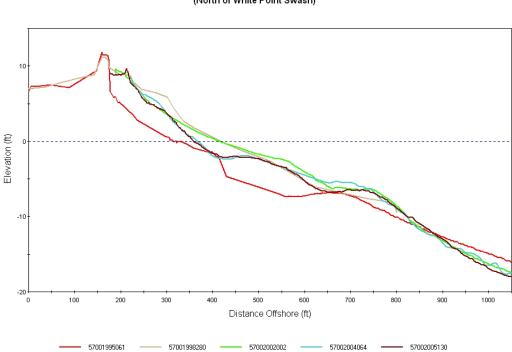


Figure 8-26: Beach profiles north of White Point Swash at OCRM 5700 prior to NMB nourishment project.



OCRM 5700 After NMB Nourishment (North of White Point Swash)

Figure 8-27: Beach profiles north of White Point Swash at OCRM 5700 after NMB nourishment project.

## OCRM 5700 Before and After NMB Nourishment (North of White Point Swash)

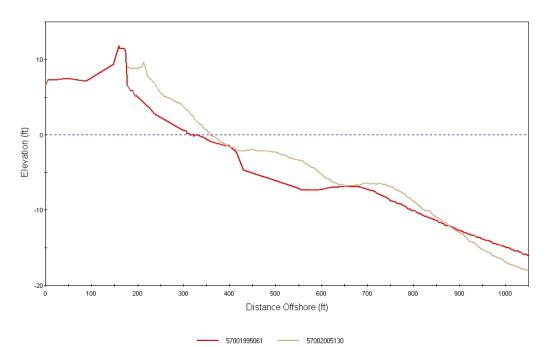


Figure 8-28: Beach profiles north of White Point Swash at OCRM 5700 prior to and after NMB nourishment project.

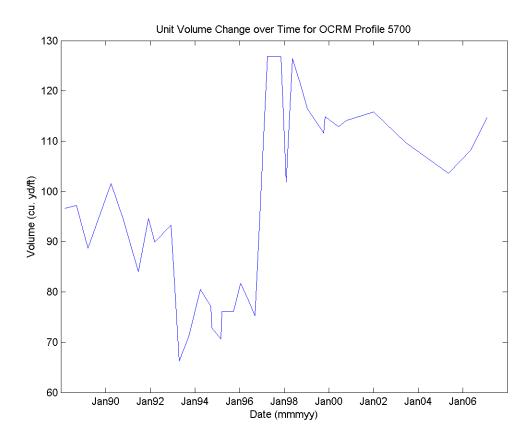


Figure 8-29: Unit Volume Change (cu.yd/ft) over time at OCRM Profile 5700 (North of White Point Swash).

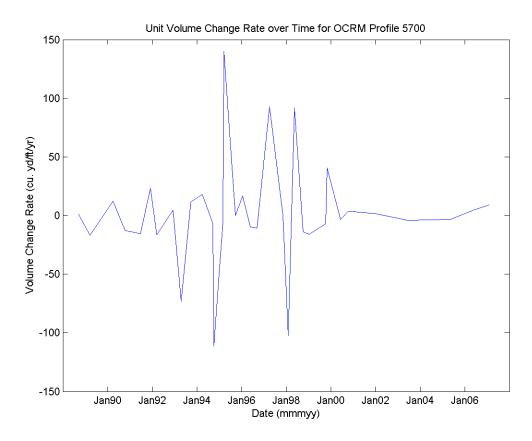


Figure 8-30: Unit Volume Change Rate (cu.yd/ft/yr) over time at OCRM Profile 5700 (North of White Point Swash).

OCRM 5650 Before NMB Nourishment (North of White Point Swash)

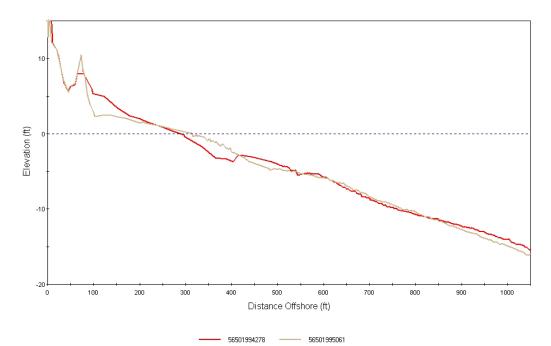


Figure 8-31: Beach profiles north of White Point Swash at OCRM 5650 prior to NMB nourishment project.

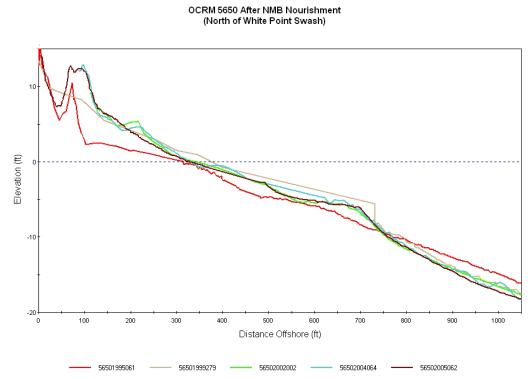


Figure 8-32: Beach profiles north of White Point Swash at OCRM 5650 after NMB nourishment project.

## OCRM 5650 Before and After NMB Nourishment (North of White Point Swash)

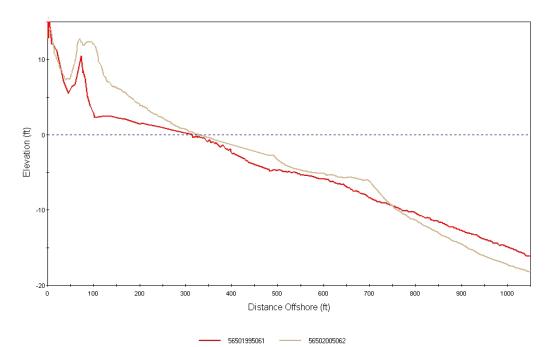


Figure 8-33: Beach profiles north of White Point Swash at OCRM 5650 prior to and after NMB nourishment project.

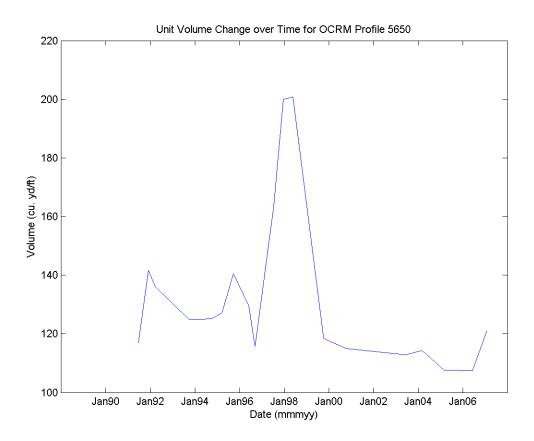


Figure 8-34: Unit Volume Change (cu.yd/ft) over time at OCRM Profile 5650 (North of White Point Swash).

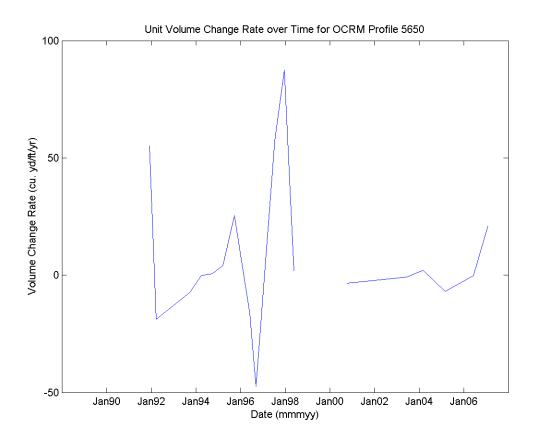


Figure 8-35: Unit Volume Change Rate (cu.yd/ft/yr) over time at OCRM Profile 5650 (North of White Point Swash).

#### OCRM 5590 Before NMB Nourishment (South of White Point Swash)

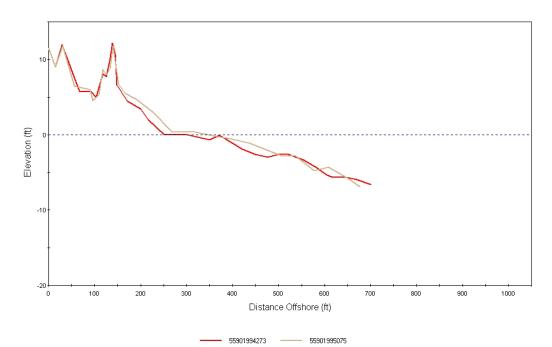


Figure 8-36: Beach profiles south of White Point Swash at OCRM 5590 prior to NMB nourishment project.

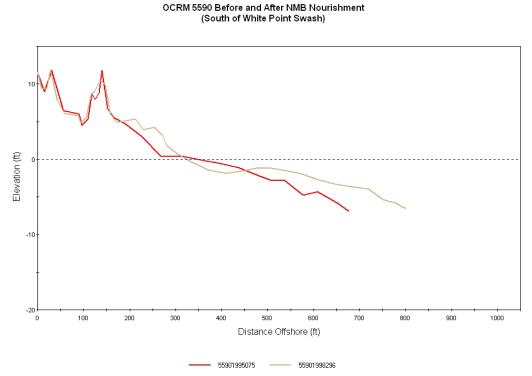


Figure 8-37: Beahc profiles south of White Point Swash at OCRM 5590 prior to and after NMB nourishment project.

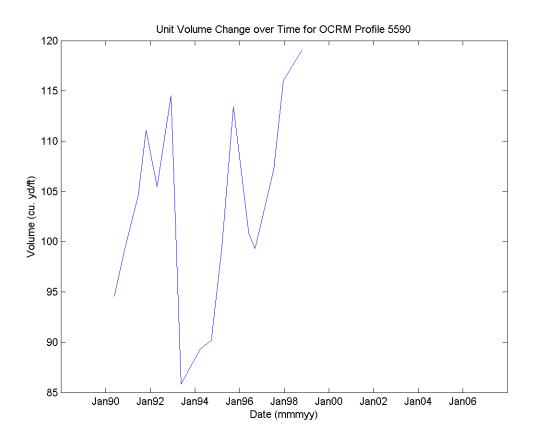


Figure 8-38: Unit Volume Change (cu.yd/ft) over time at OCRM Profile 5590 (South of White Point Swash).

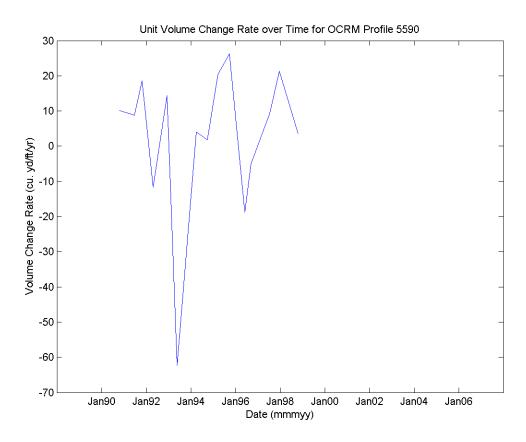


Figure 8-39: Unit Volume Change Rate (cu.yd/ft/yr) over time at OCRM Profile 5590 (South of White Point Swash).

### OCRM 5580 Before NMB Nourishment (South of White Point Swash)

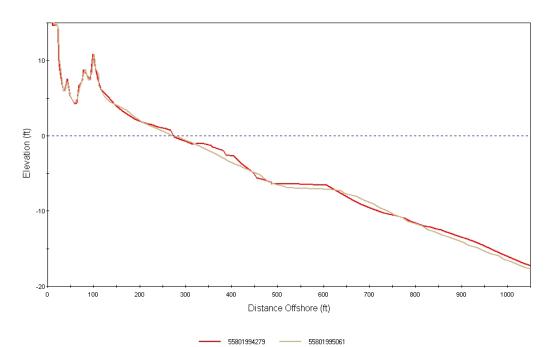


Figure 8-40: Beach profiles south of White Point Swash at OCRM 5580 prior to NMB nourishment project.

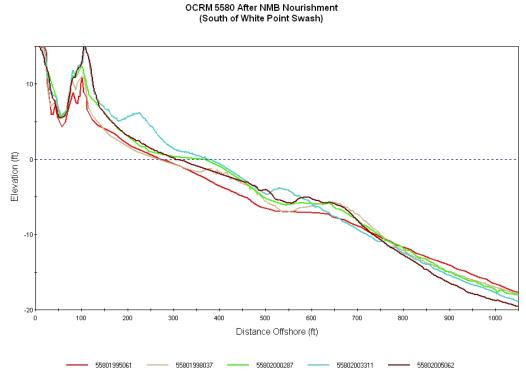


Figure 8-41: Beach profiles south of White Point Swash at OCRM 5580 after NMB nourishment project.

# OCRM 5580 Before and After NMB Nourishment (South of White Point Swash)

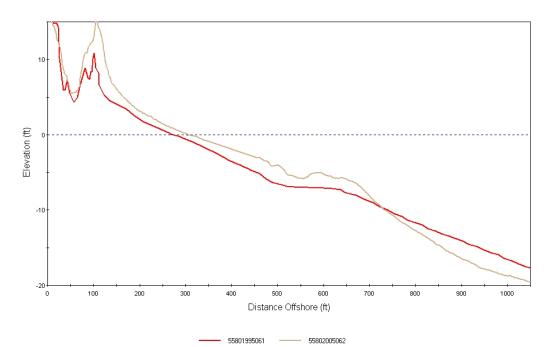


Figure 8-42: Beach profiles south of White Point Swash at OCRM 5580 prior to and after NMB nourishment project.

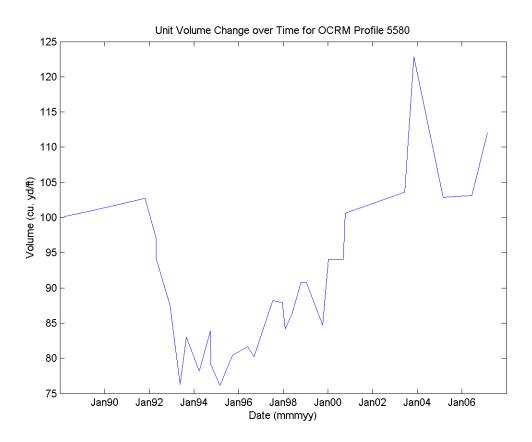


Figure 8-43: Unit Volume Change (cu.yd/ft) over time at OCRM Profile 5580 (South of White Point Swash).

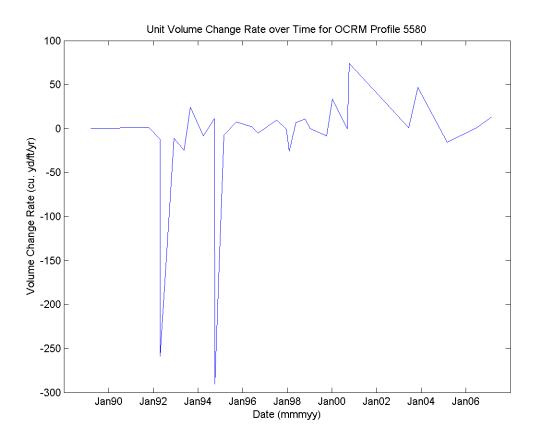
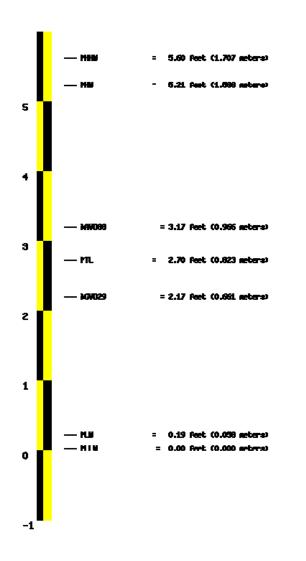


Figure 8-44: Unit Volume Change Rate (cu.yd/ft/yr) over time at OCRM Profile 5580 (South of White Point Swash).



Elevation Information for PIO = 001542, VM = 571 Station\_IO --- 0661070

The NHVD 00 and the NGVD 29 elevations related to NLLM were computed from 0ench Mark, 066 1070 J TIDAL, at the station.

Olsplayed tidal datums are Mean Higher High Water(MHHM), Mean High Water (MHM), Mean Tide Level(MTL), Mean Low Water(MLW), and Mean Lower Low Water(MLLW) referenced on 1983-2001 Epoch

Figure 8-45: Benchmark information (vertical datum relationships) for Springmaid Pier.