



New Jersey Beach Profile Network

Cape May County

Great Egg Harbor Inlet
to Stow Creek

NJBPN Profile #'s
225 - 100

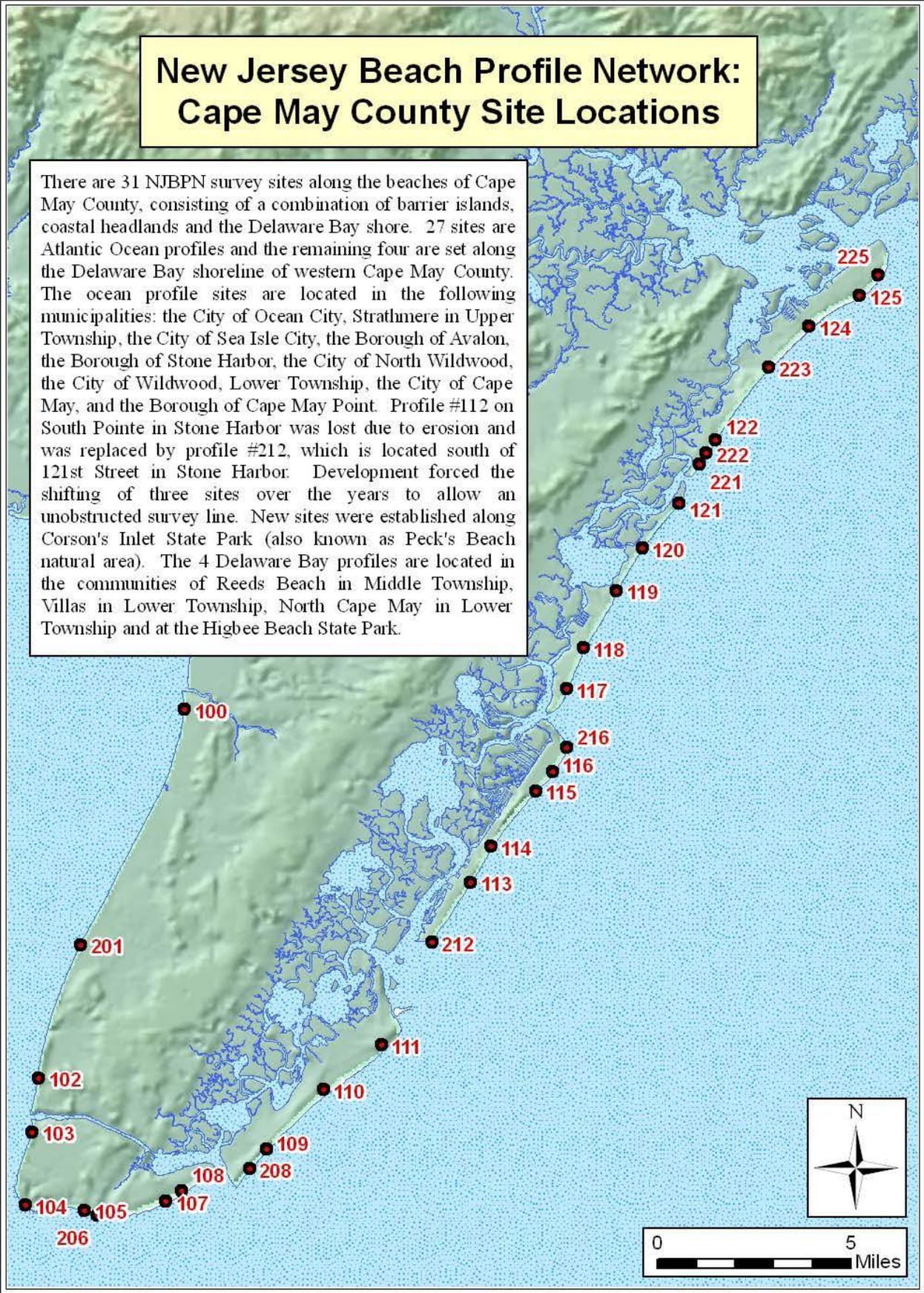


Figure 78. Map of Cape May County showing the locations of the 31 profile sites in the county.

Cape May County in 2014:

Cape May County has 31 survey stations between Reeds Beach on the Western Cape May County shoreline, around Cape May Point and up the ocean coastline to Great Egg Inlet in Ocean City. This county has five tidal inlets separating four barrier islands and a complex coastal geomorphic compartment that is the site of Cape May City, a US Coast Guard base and Cape May Point. Each inlet has near identical geomorphic conditions with a narrow, rapidly changing southern spit that curves deep into the inlet, a large ebb-tidal delta offshore and a distinct offset in the seaward position of the southern inlet shoreline due to wave refraction around the ebb-tidal delta. This makes the northeast corner of each island vulnerable to northeast wave conditions especially when the main tidal channel lies close to the southern shoreline of the inlet.

This has frequently expressed itself in Ocean City (the Gardens area), Strathmere in Upper Township, Avalon between 10th and 15th Streets, and North Wildwood between 2nd and 5th Avenues. These four “hot spots” all owe their high rates of beach erosion to inlet tidal current processes combined with incident waves impacting the adjacent shoreline. These four locations have consumed 50% of all sand placed in Cape May County since 1983. Three of the four sites are currently in the process of receiving maintenance sand placement with work to start in Strathmere, Avalon soon and currently going forward in North Wildwood.

Western Delaware Bay Shoreline of Cape May County;

Between Reeds Beach and Cape May Point, the western shoreline of Cape May County suffered from the back-side of Hurricane Sandy after the storm made landfall on the New Jersey shoreline. The wind direction reversed and came across the storm-surge flooded Delaware Bay with 4-foot waves with very short periods. Due to the high water levels these waves pounded dunes and made low-lying areas subject to inundation, wave damage and loss of some structures. During 2014 habitat restoration work commenced under an umbrella of wildlife oriented groups funded with National Fish & Wildlife Sandy recovery money. The goal of the projects is to replace sand beaches washed onto the salt marsh surface in Delaware Bay so that horseshoe crabs would have places to lay eggs and their commensal bird species (red knots) would have those eggs for their refueling on route to the arctic nesting grounds. Sand was supplied from Cape May County quarries and engineered to have a sloping berm and an elevation just above normal mean higher high water.

Additionally, the NJDEP presented an opportunity to submit applications for Sandy Resilience funding, so Middle Township submitted a 3.1 million dollar application to provide a dune and beach seaward in the bay fronting Pierce’s Point and Reeds Beach developments and tie in with the NF&WS project in the natural marsh zones on the shoreline. If successful, the project would add an elevation of a 10.0-foot dune and a 40-foot wide berm and beach seaward of the development across 6,000 feet of bayfront shoreline.

Cape May City;

Cape May City beaches all added sand to the berm as a wedge during the summer of 2014. This followed erosion the prior winter. The recovery was sufficient to make the fall 2014 survey the most seaward extent of the berm and the highest sand volume at the three locations. The huge slug of sand deposited in the Nature Conservancy eroded badly, then stabilized for the next two surveys.

The Wildwoods;

The North Wildwood profile appears to have stabilized, but sand continued to accumulate at the southern three sites. Cresse Avenue advanced seaward another 50 feet as the berm grew ever wider. The other two advanced between 24 and 35 feet further seaward.

Work by the Philadelphia District ACOE continues toward an approved design document for the Wildwoods that includes sand harvesting from Wildwood and Wildwood Crest and passing it back north to the erosion zone in North Wildwood as opposed to pumping in new sand from offshore or Hereford Inlet tidal shoals.

Avalon & Stone Harbor;

These two communities have been leaders in shore protection by having successfully managed to have Federal shore protection projects constructed and have for years, promoted wider, higher dunes with coordinated development of pedestrian access pathways that do not make a breach easier at street end access points. The US Army Corps of Engineers completed a project restoration from the 8th Street jetty to 31st Street in Avalon and from 70th Street in Avalon south to the terminal groin south of 123rd Street in Stone Harbor. This work was completed under PL 113-2 Emergency Restoration funds for Hurricane Sandy damage to ACOE project. Since that was completed in early 2013, erosion has claimed the sand to the revetment rocks at 12th Street in Avalon. The Borough is putting together a project on its own to restore the beaches for the coming summer.

Sea Isle City & Strathmere;

A 2009 NJ State and locally sponsored shore protection project saved these two communities substantial damage from Hurricane Sandy with about 230,000 cubic yards of sand lost that is proposed to be replaced starting April 17, 2015 in Ocean City under ACOE responsibility for Ludlam Island. This project cover from 42nd Street to 59th Street in Ocean City then will extend from Seaspray Avenue south to 93rd Street in Stone Harbor and will be accomplished using sand from offshore borrow sites previously defined. The sand moved south from Ocean City will accrue to the benefit of the Corson's Inlet State Park within 6 months.

The Corson's Inlet State Park shoreline south of development in Ocean City suffered dune loss of considerable magnitude during Hurricane Sandy. Since sand moves south naturally under wave dominance from the northeast, this shoreline should benefit from any sand losses in Ocean City's part of the new project. The dune will need fencing to encourage reconstruction as the beach widens. The position of the main tidal channel in Corson's Inlet needs to be monitored because it's position vis-à-vis the Strathmere inlet shoreline is critical to the rates of erosion seen on the southern shoreline.

Ocean City;

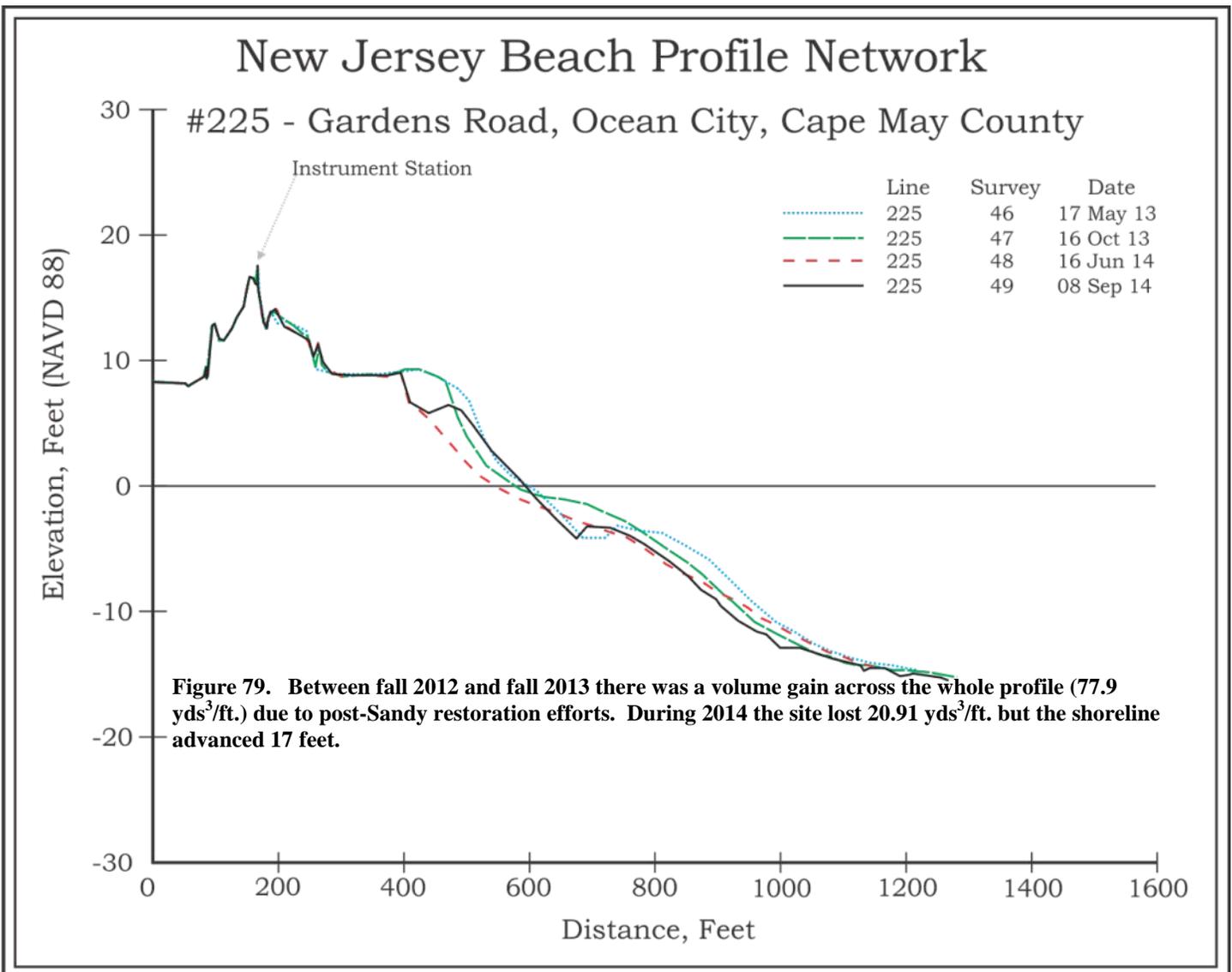
The Ludlam island project also includes 1.5 million cubic yards of sand for the southern shoreline of Ocean City that was damaged by Hurricane Sandy due to low, narrow dunes. This places the shoreline between Great Egg Inlet in Ocean City and Hereford Inlet in Stone Harbor under ACOE project jurisdiction with a 3 to 5 year expectancy of maintenance work on restoring these beaches to the design specifications.

Attention is beginning to focus on the western shoreline of Cape May County largely due to the loss of horseshoe crab egg laying habitat at the marsh edge beaches. These thin veneers of coarse sand have been the choice area for millions of the crabs to lay eggs each May. The result was their separate use by the Red Knot shorebird as fuel for their long breeding flight from south to north each spring. Sandy ripped up the sand veneer and washed it inland among the marsh grasses leaving bare sod and mud in place of sand. Damage to human structures enhanced the interest in this environment to the point where the Township of Middle has applied for \$3.1 million dollars to provide a dune with a geo-textile core filled with suitable dredge material and covered with sand to become a 10.0-foot elevation feature to defend the shoreline against future wave attack. The dune would have a 40-foot wide dry beach seaward of it and defend 6,000 feet of the Middle Township shoreline. In addition, a federal project long on the sidelines, is being re-examined for implementation in the region using Delaware Bay dredge sand that has been discharged at what is called "buoy 10" at the mouth of the bay.

NJBPN 225 - Gardens Road, Ocean City



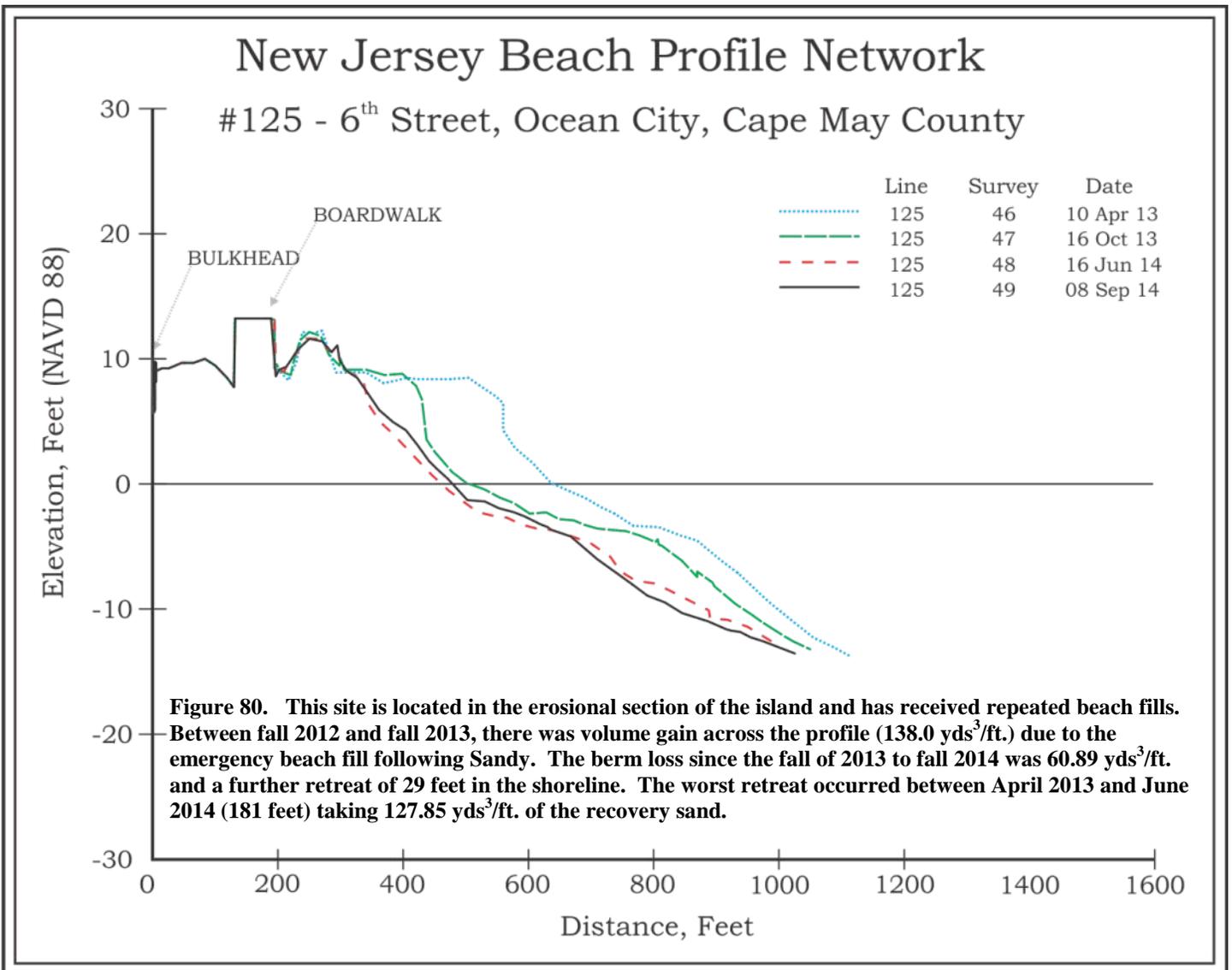
The Gardens Road site is located near Great Egg Inlet. The left photo (taken October 16, 2013), shows the Federal emergency fill (completed prior to the spring 2013 survey) restored the beach and foredune elevations to project design conditions. Grass planted by September 8, 2014 restored the dune's ability to capture wind-blown sand. The beach width retreated over the winter, but partially recovered with berm growth over the 2014 summer.



NJBPN 125 - 6th Street, Ocean City



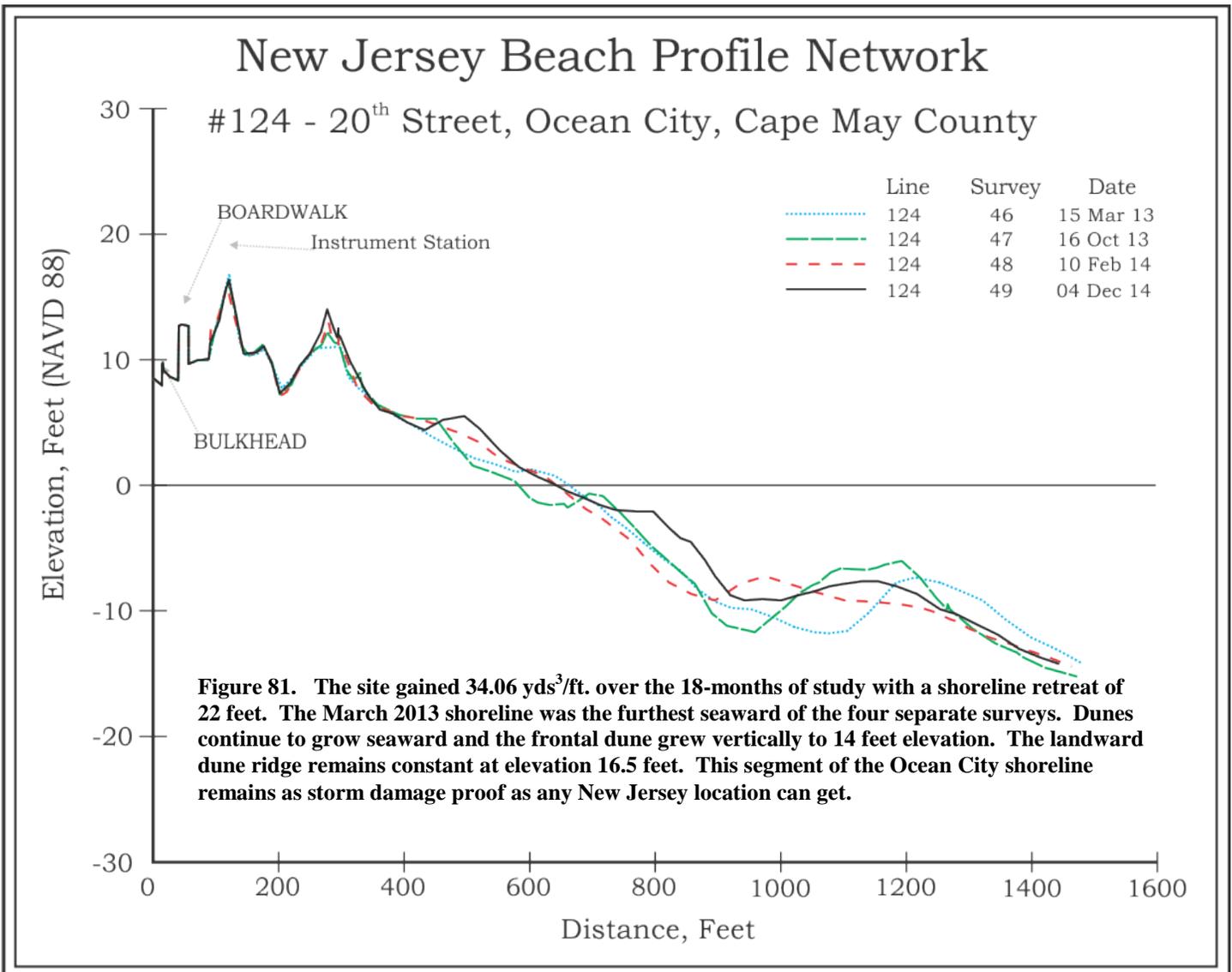
The October 16, 2013 view shows (left), the berm and dunes restored to design elevation by the ACOE. Beach volume loss has reduced the beach width, but the dunes and the new grass plants are doing well as of September 8, 2014.



NJBPN 124 - 20th Street, Ocean City



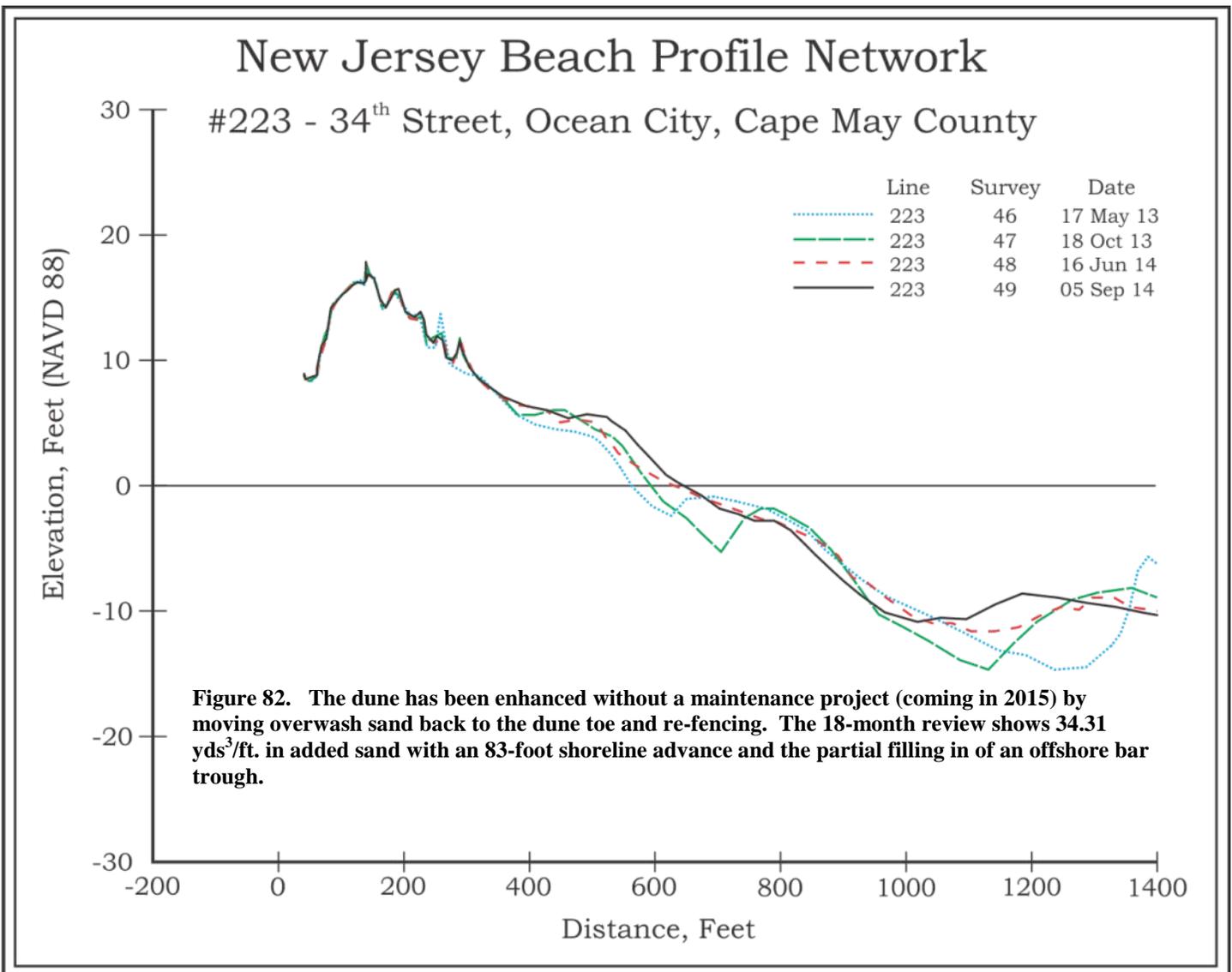
14 city blocks south, 20th Street presents the antithesis of beach conditions chronic at 6th St. Here the beach is over 250 feet wide and the dunes extend almost 400 feet east of the boardwalk. Prior to the initial beach restoration in 1992 the zero elevation position was practically under the boardwalk, now 650 feet distant. The dunes continue to slowly advance onto the dry beach and conditions are ultra-stable.



NJBPN 223 - 34th Street, Ocean City



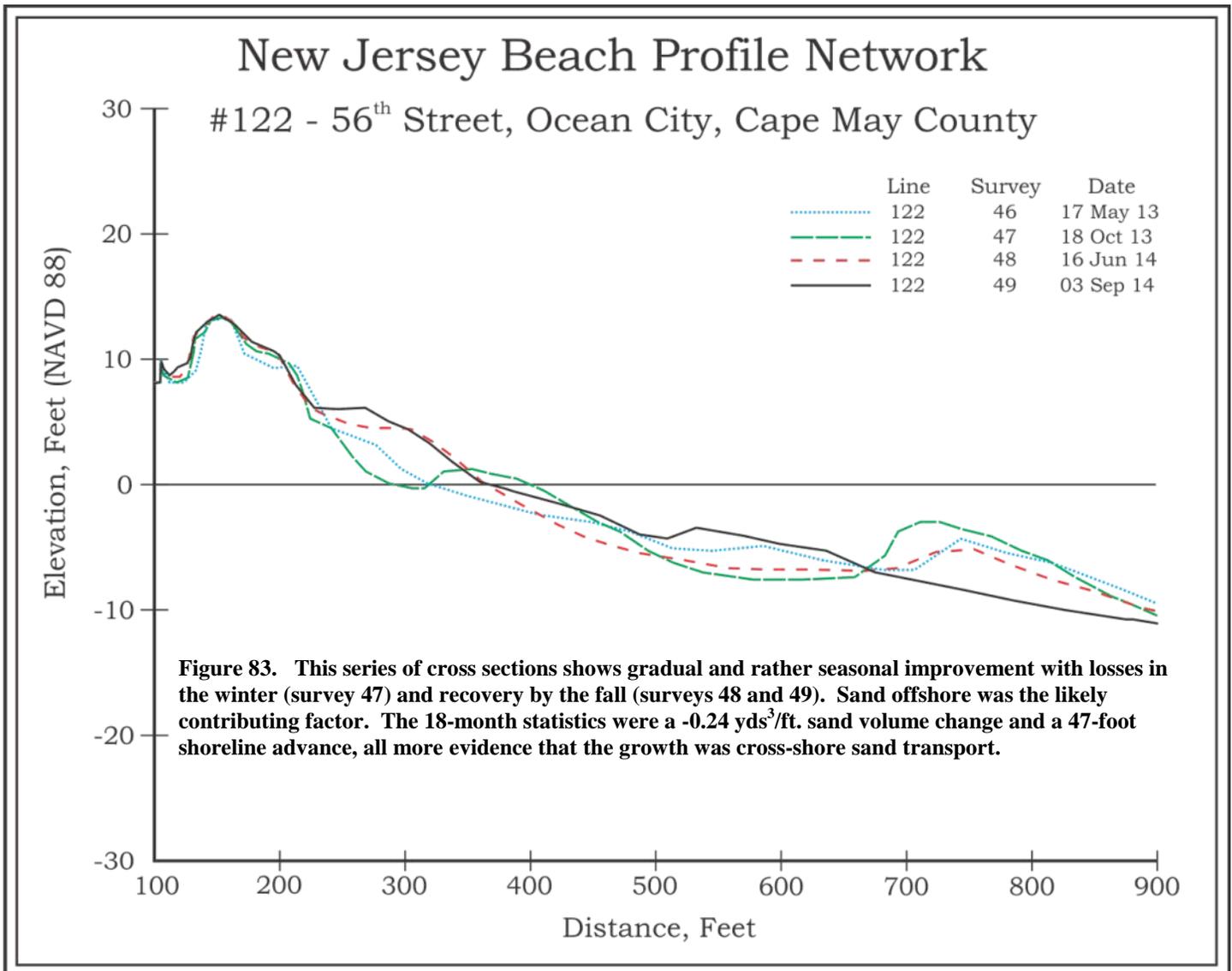
In the October 18, 2013 photo (left), sand piles returned to the beach from inland following Sandy were spread to support incipient dune growth. The right hand view on September 5, 2014 shows significant wind accumulation landward of the sand fencing and a beach with a moderate addition of sand at the berm.



NJBPN 122 - 56th Street, Ocean City



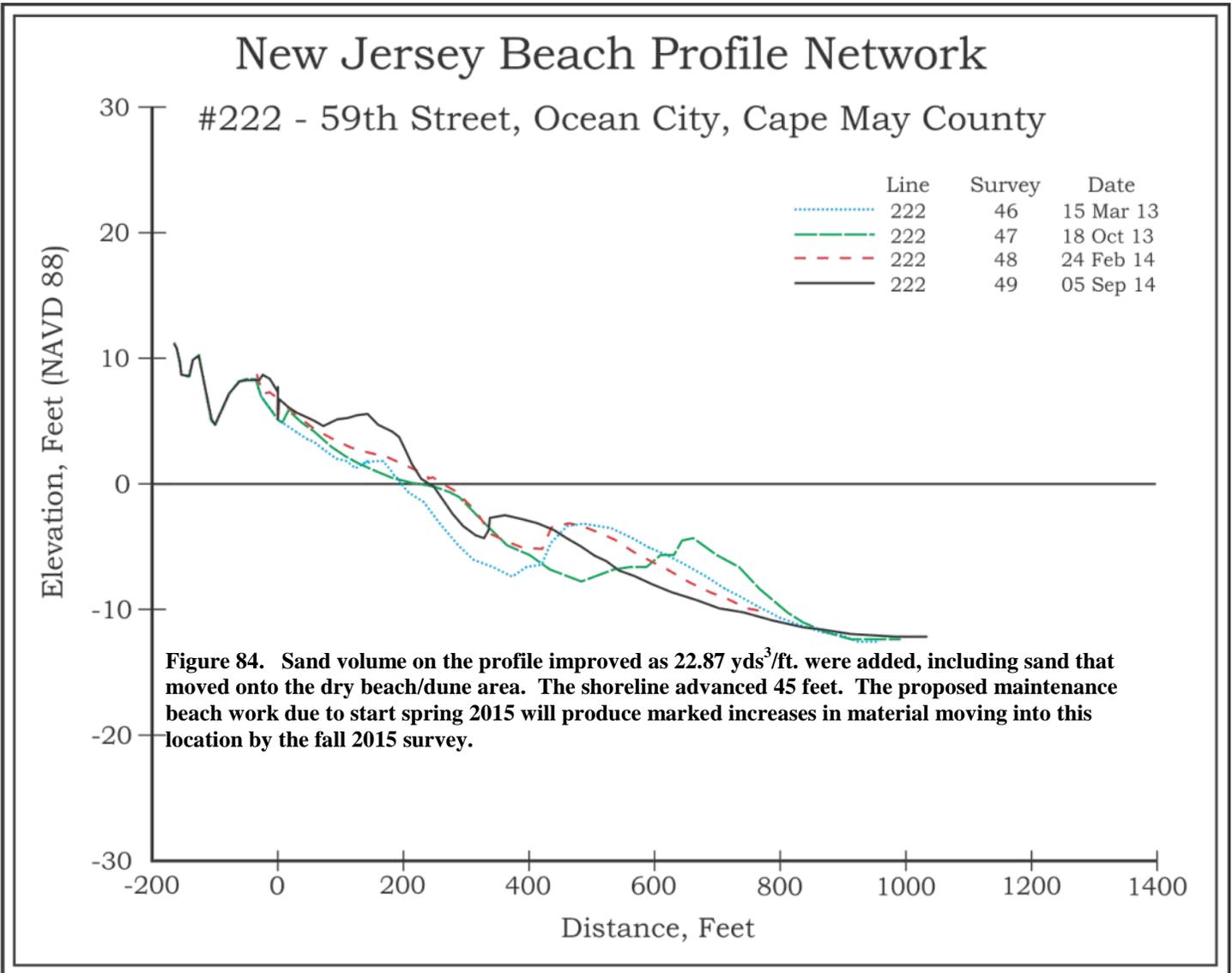
On the on left (October 18, 2013), dune fence poles appear to have not been the final array of fence installation (see right). The beach has not been maintained since 1995 and is soon to be absorbed into the ACOE project that ended originally at 34th Street. The September 3, 2014 situation was better due to natural berm accretion and some dune growth, but no real structure is currently present.



NJBPN 222 - 59th Street, Ocean City



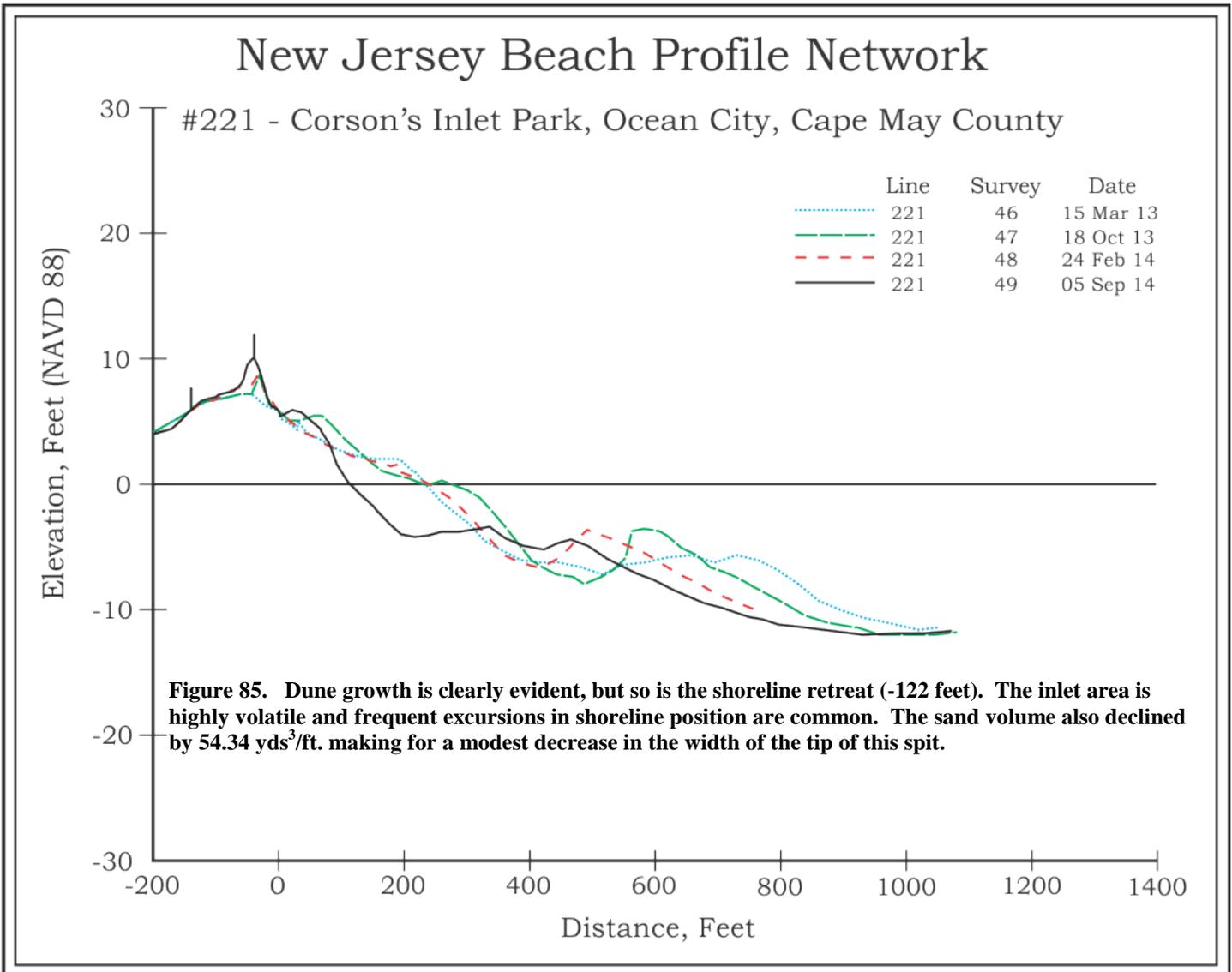
The 59th Street site is located at the southern end of the developed section of Ocean City. The site is within the Corson's Inlet State Park, but presents a clear image of conditions at the very southern end of development in Ocean City. The dunes naturally recovered after being over-run during Sandy with definite growth both vertically and in width. The beach accumulated a relatively large berm as sand migrated onto the shoreline.



NJBPN 221 - Corson's Inlet State Park, Ocean City



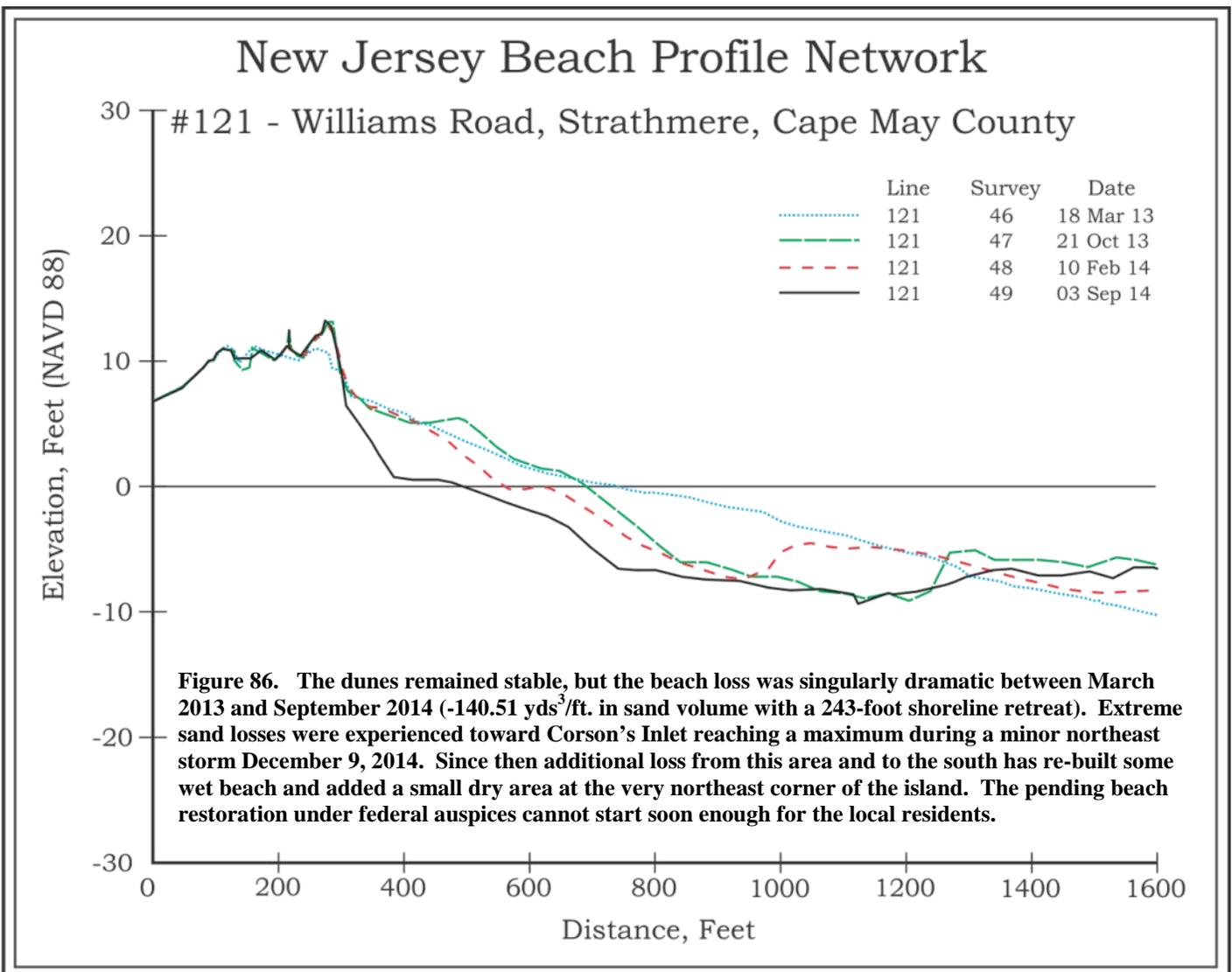
The photograph on the left shows the beach looking south near Corson's Inlet in the State Park. Sandy wiped the foredune out and moved sand inland that remains as an overwash deposit. Wind deposition added substantially to the dune elevation, but the beach width decreased producing a shoreline retreat.



NJBPN 121 - Williams Road, Strathmere



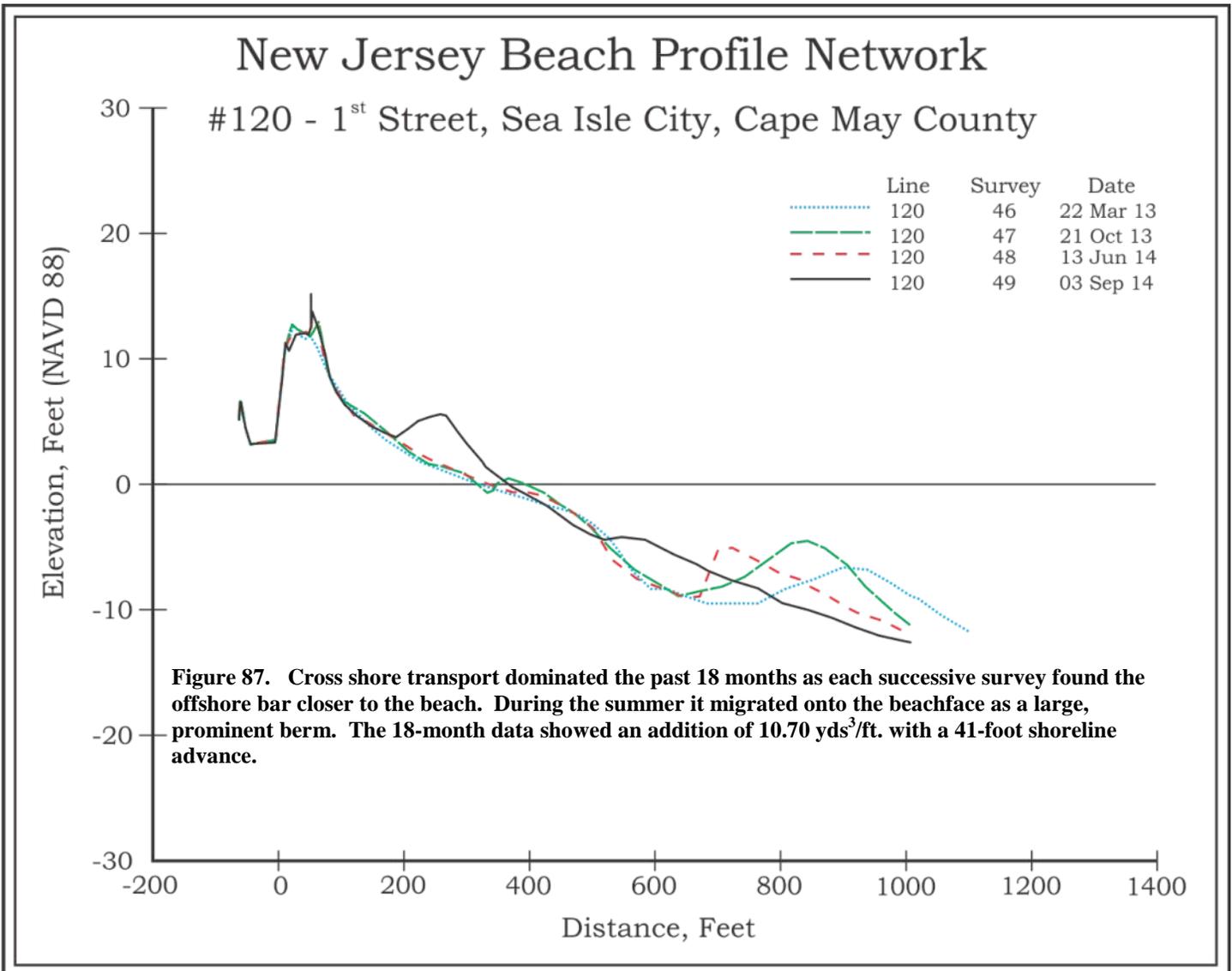
The Williams Road site is strongly influenced by the ebb-tidal delta at Corson's Inlet. The left photo (taken October 21, 2013) shows the wide dune zone that separates the homes from the ocean. On the right (taken September 3, 2014), demonstrates the dramatic decrease in beach width also documented in aerial photographs taken quarterly. The vegetation is sparse, but the foredune was re-established seaward of its pre-Sandy position and the elevation exceeded the pre-Sandy elevation as a result of natural accumulation and re-planting.



NJBPN 120 - 1st Street, Sea Isle City



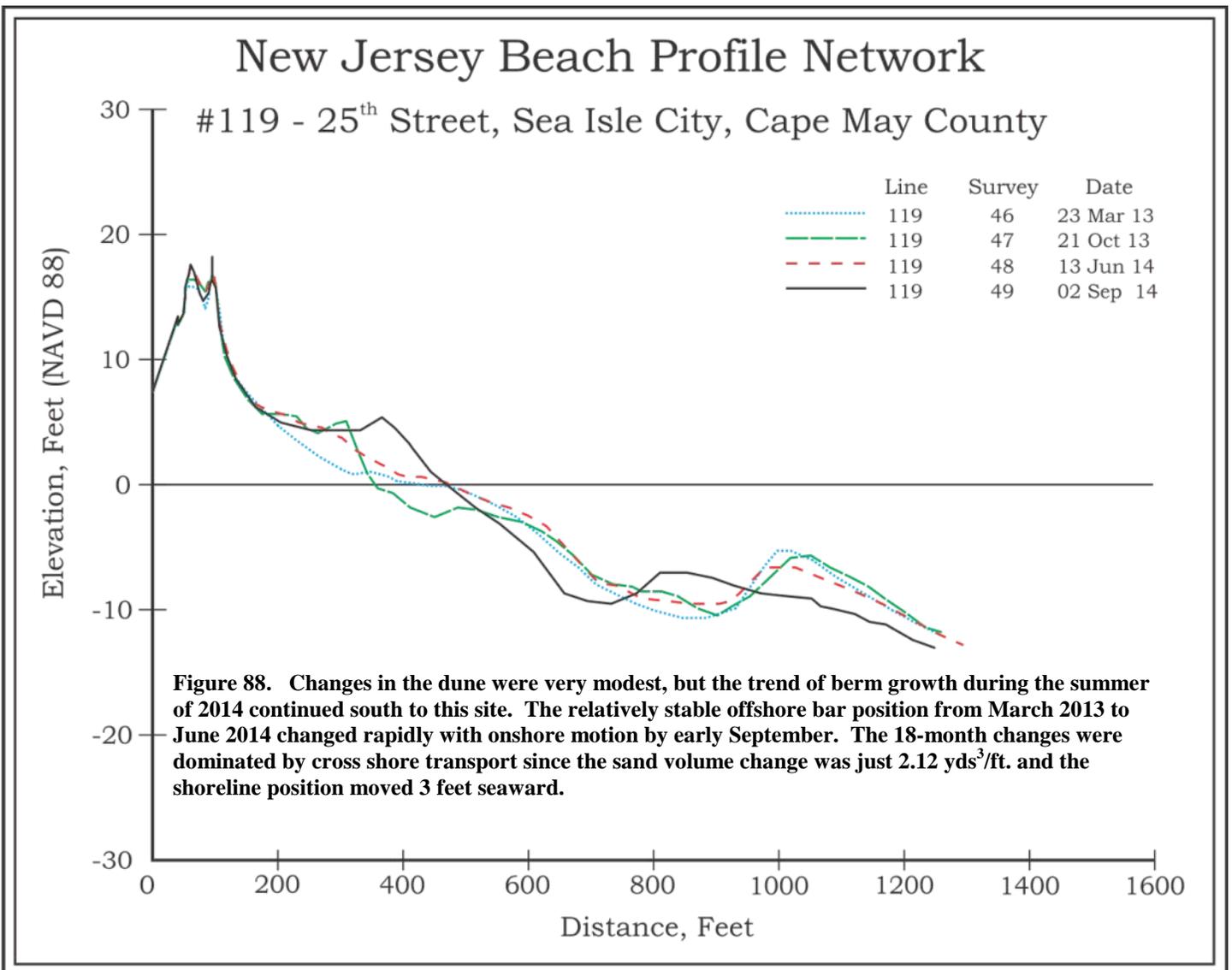
The dune here at the 1st Street location consists of a geotextile core covered by sand. Storm damage was minimal and natural recovery has blended in well with the surviving vegetation. The majority of the accumulation has been in the form of a wider beach and much larger summer berm. Sand moved onto the shoreline from bars built offshore.



NJBPN 119 - 25th Street, Sea Isle City



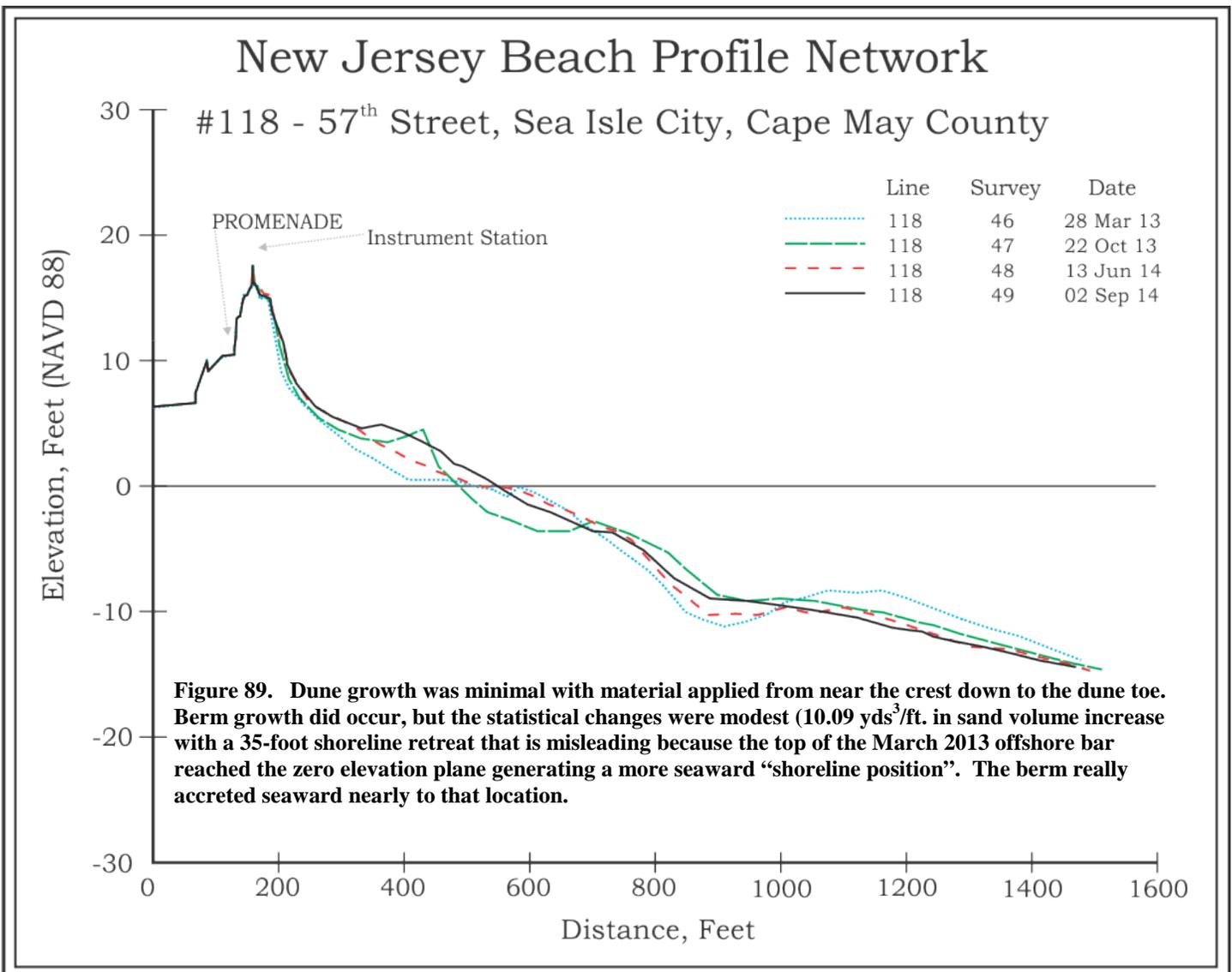
The 25th Street site is positioned near the northern limit of development east of Commonwealth Avenue. The site is reasonably stable and was enhanced in 2009 under the NJ State project. The coming federal work will reach this spot sometime during the second half of 2015.



NJBPN 118 - 57th Street, Sea Isle City



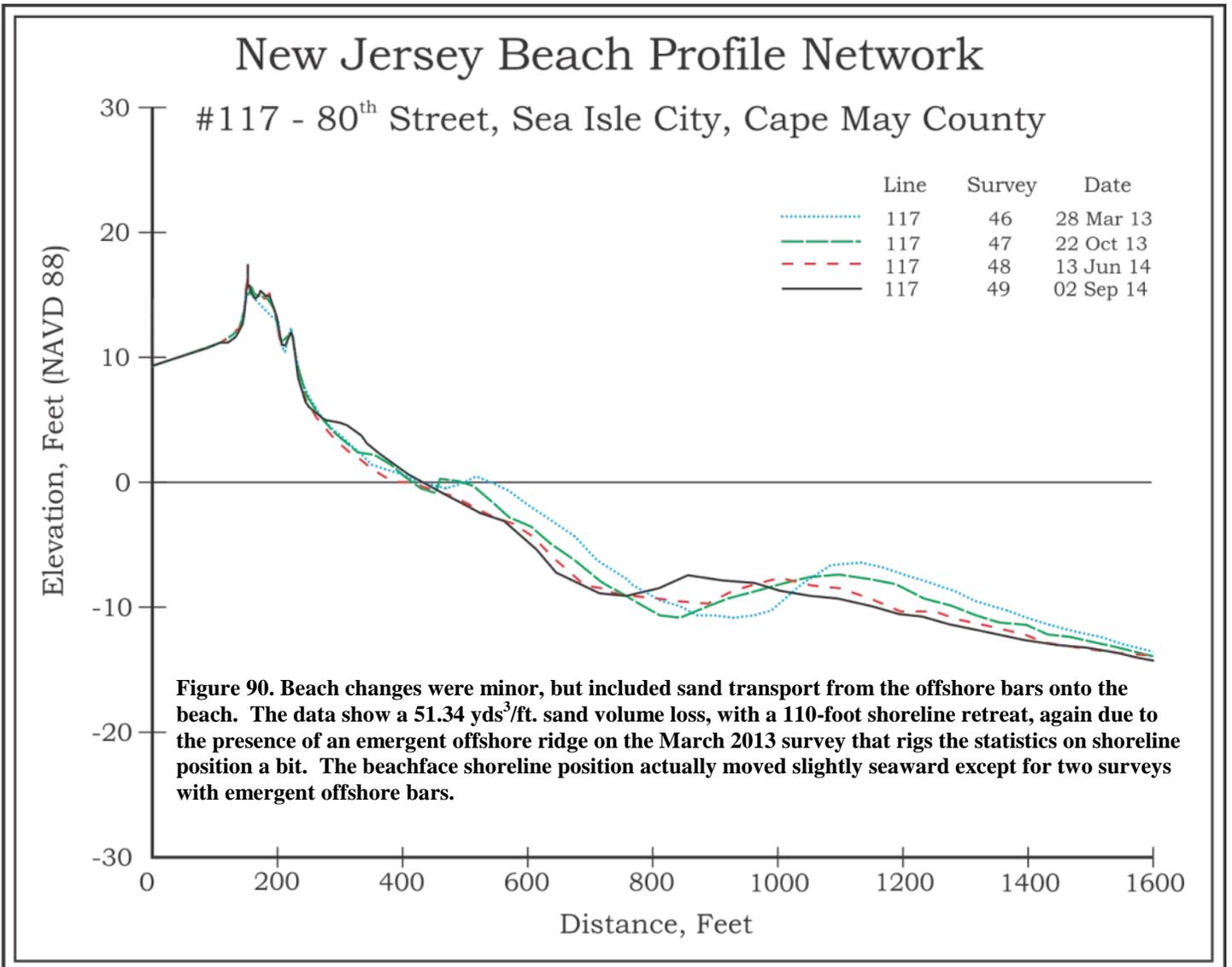
The left picture shows a nearly buried line of sand fencing with a narrow beach seaward. On the right the beach is wider, and the sand fence is buried. 2014 added width and elevation to the site, but not as dramatically as the two sites to the north.



NJBPN 117 - 80th Street, Sea Isle City



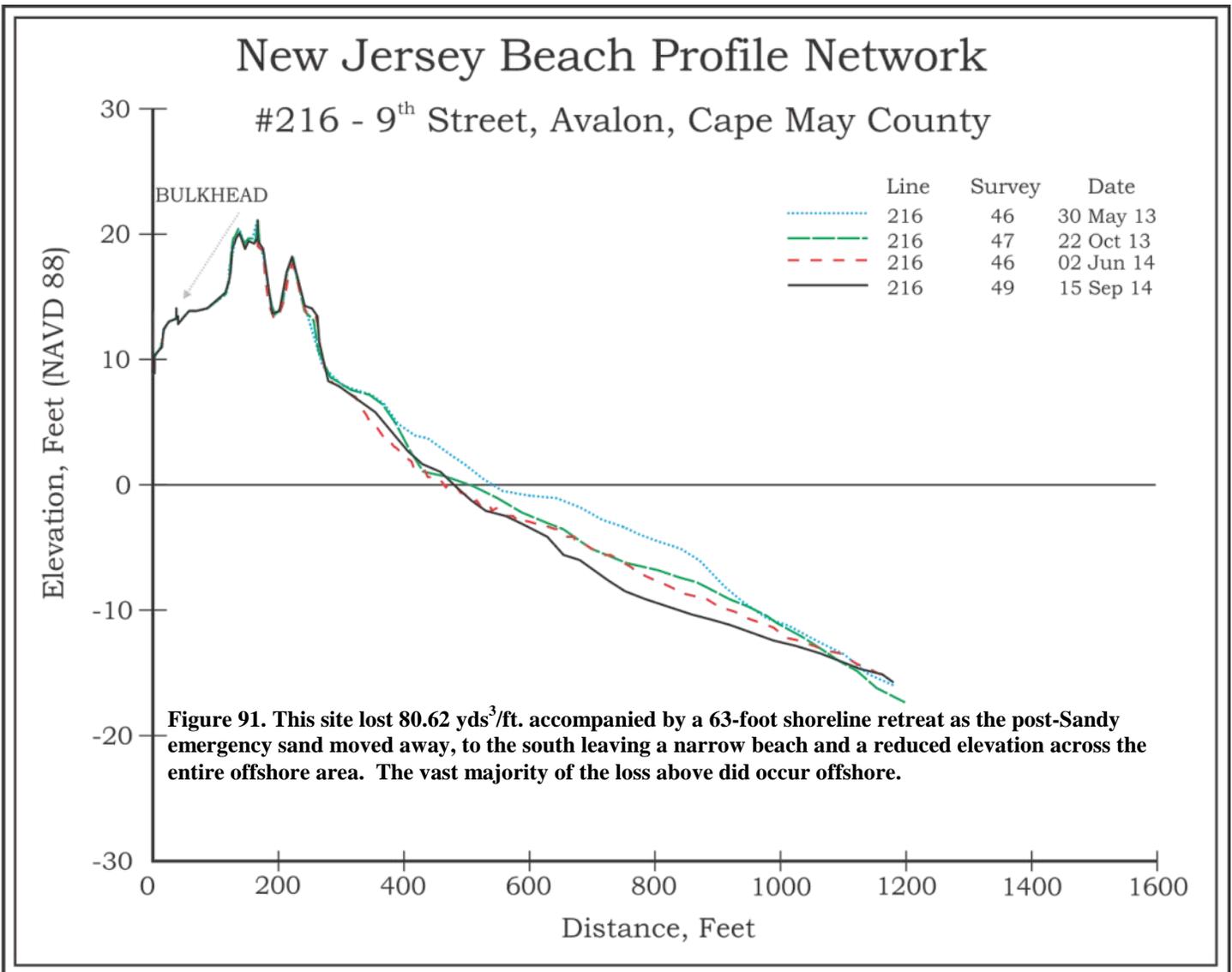
The 80th Street location was part of the 2009 State project and will be included in the coming federal work. The dunes are reasonably sized and are accumulating sand around a sand fence system to create a small foredune. The summer 2014 beach was the highest of the seasonal changes deriving sand from offshore sources.



NJBPN 216 - 9th Street, Avalon



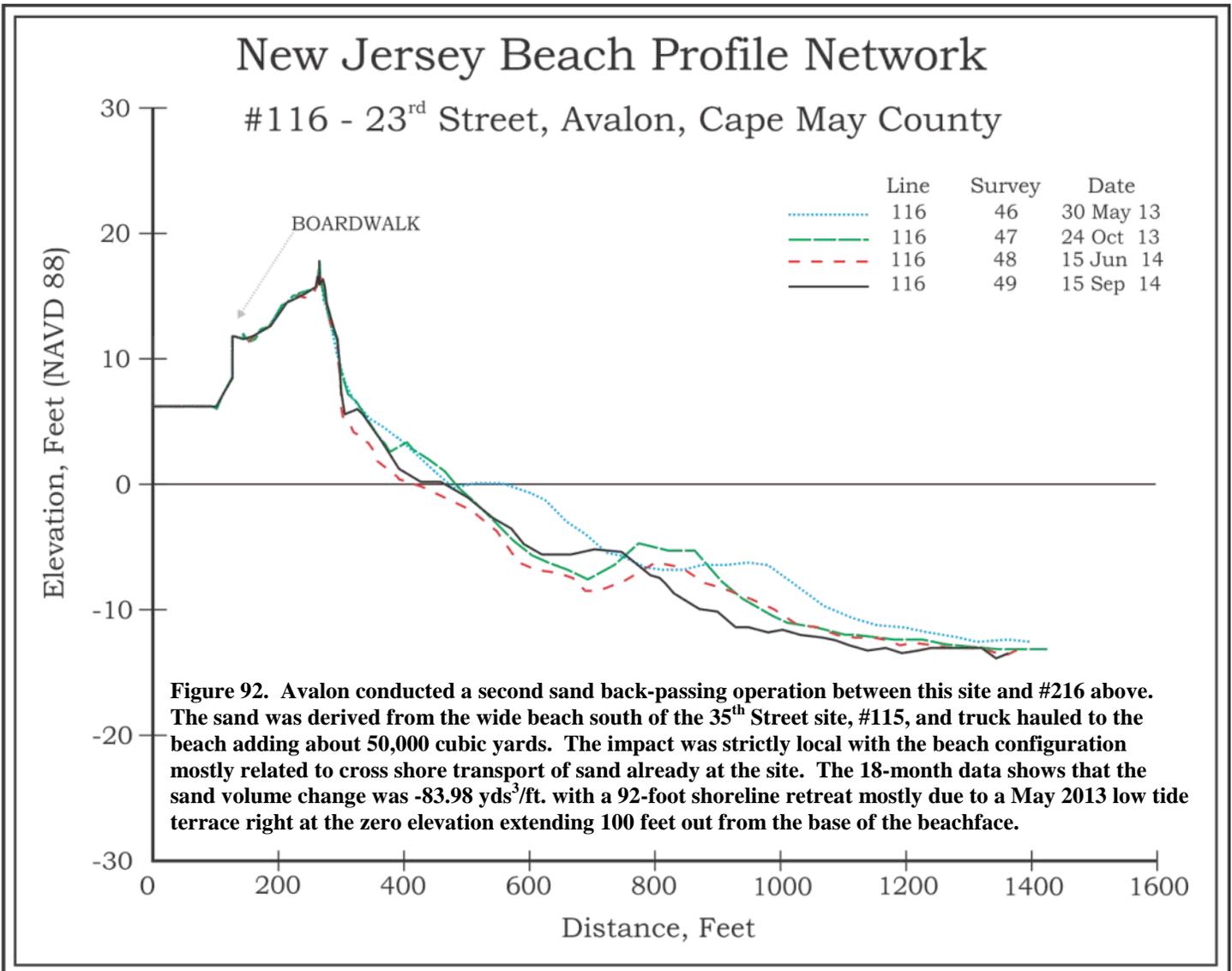
The 9th Street site is located near the Townsend's Inlet south jetty. There was no wave attack on the properties due to Sandy and the beach was restored during 2013. The dune fence shows a considerable accumulation at the fence with a narrow beach beginning to emerge to the south by mid-September 2014. Erosion has continued making further sand additions a must.



NJBPN 116 - 23rd Street, Avalon



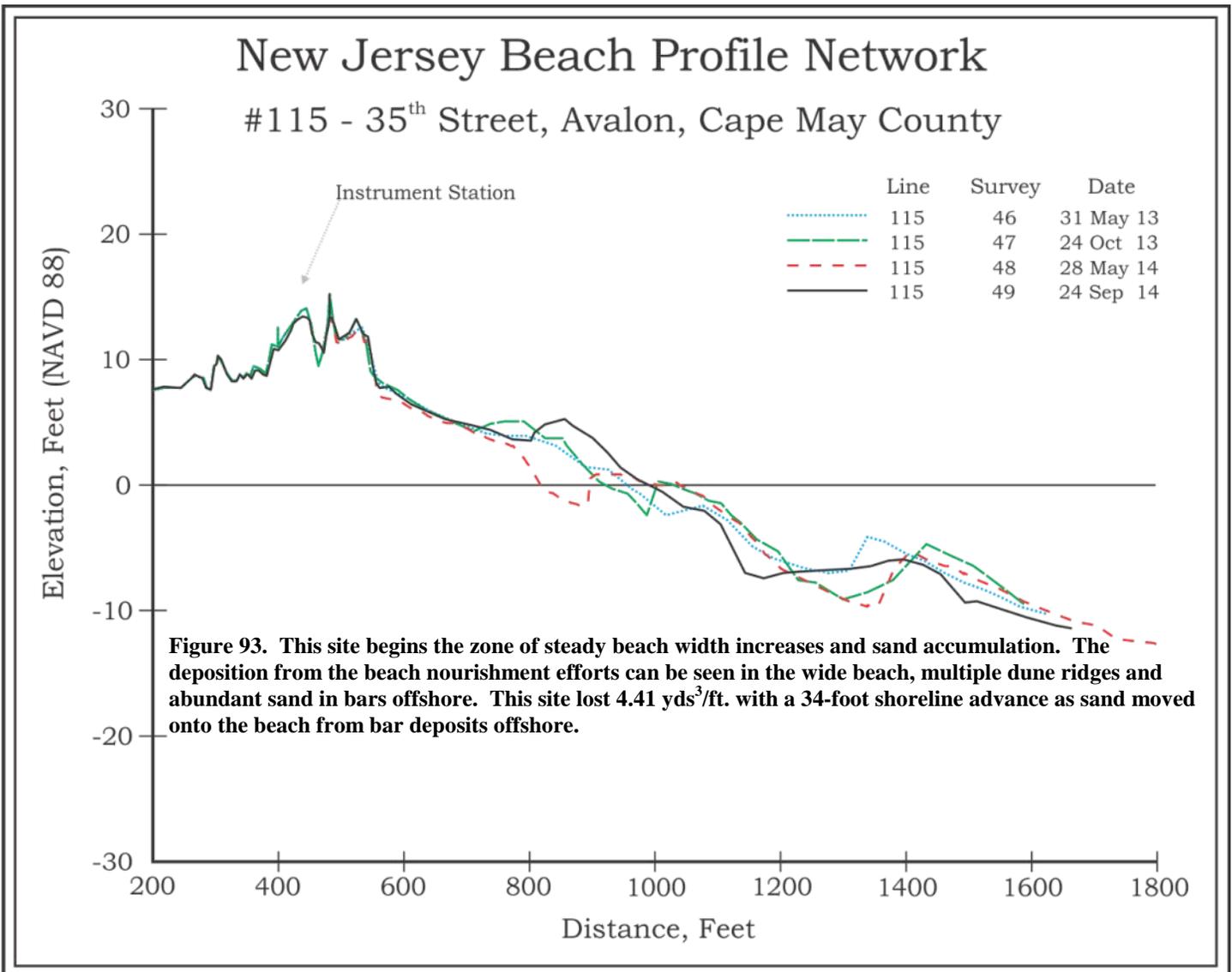
The left photo (taken October 24, 2013) shows a lower elevation beach and the seaward limits of the post-Sandy dune vegetation after the erosion took place. By September 15, 2014 the beach was narrower with a debris line at the edge of the sand added after Hurricane Sandy.



NJBPN 115 - 35th Street, Avalon



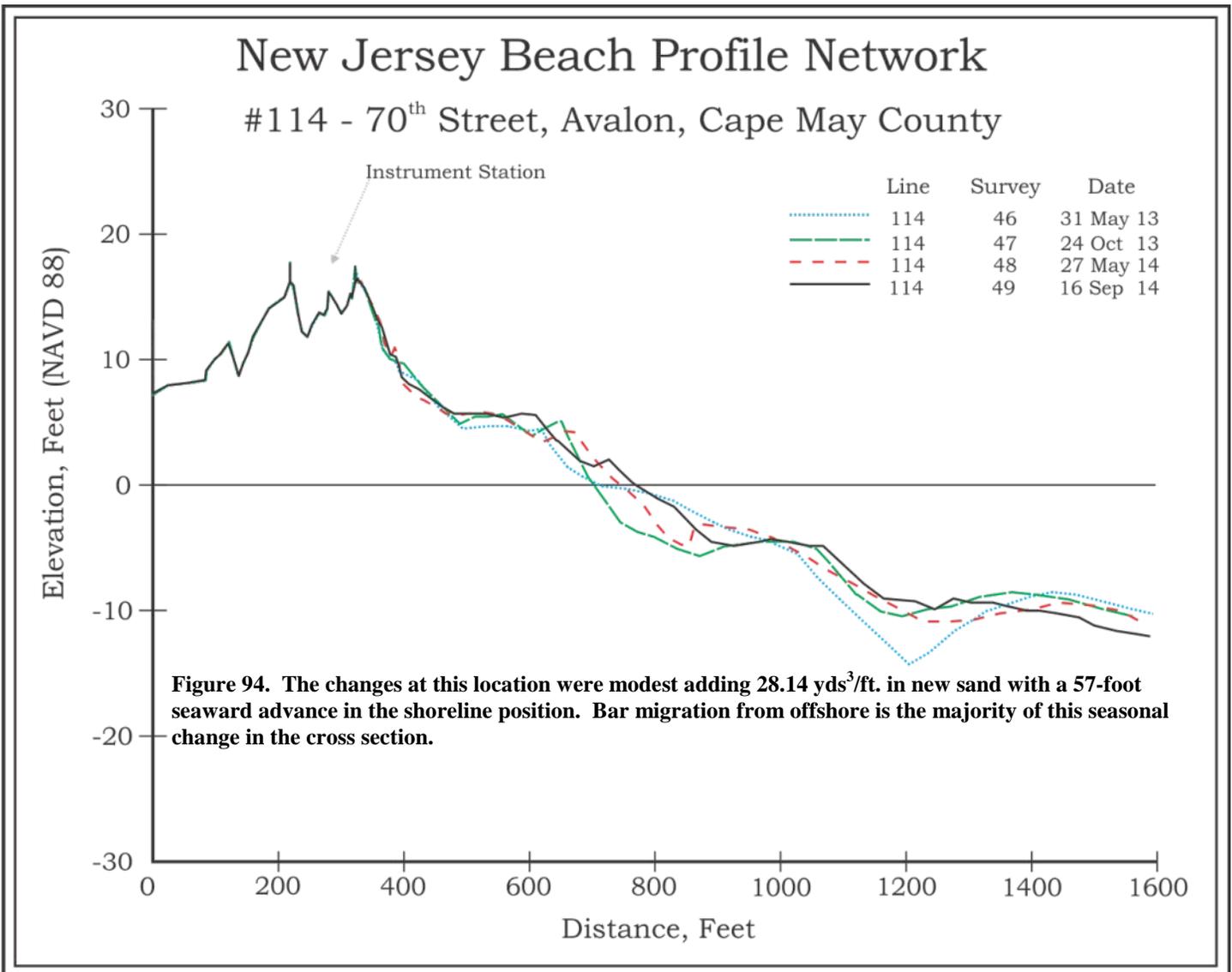
This site lies south of the beach nourishment areas and is located in an accreting area of the municipality. The berm was used as a borrow area for the February-March 2012 back-passing pilot project. The beach remains wide with a gradual transition into the dune field. The left photograph shows the foredune ridge that is the locus of dune growth since it is where the wind deposits new sand.



NJBPN 114 - 70th Street, Avalon



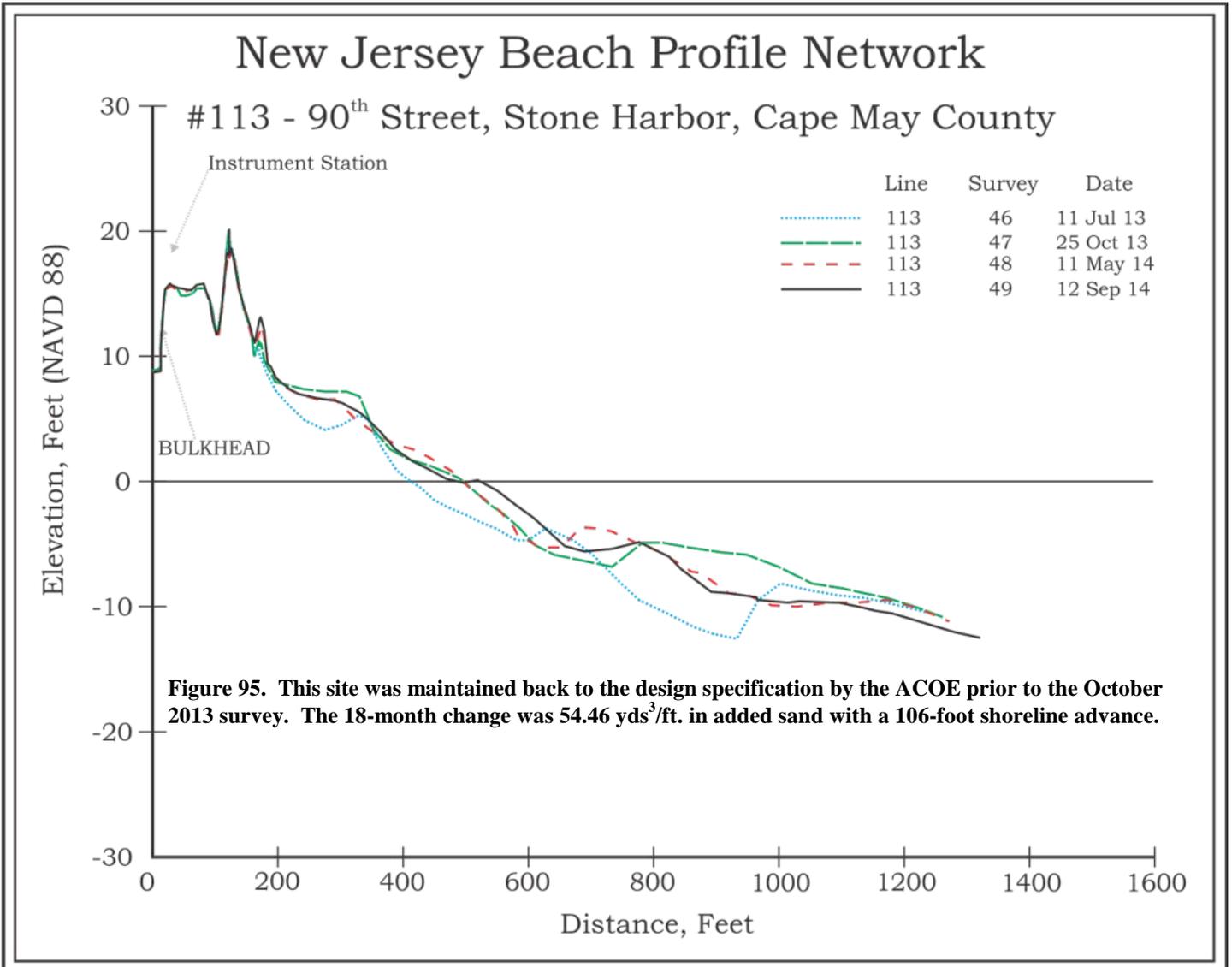
At the 70th Street location has been a stable area for decades and lies at the very north limit of the Stone Harbor segment of the ACOE shore protection project that has a break between 31st Street and 70th Street due to long term shoreline stability not requiring maintenance. The beach width is considerable with a double dune ridge landward that develops new foredunes frequently.



NJBPN 113 - 90th Street, Stone Harbor



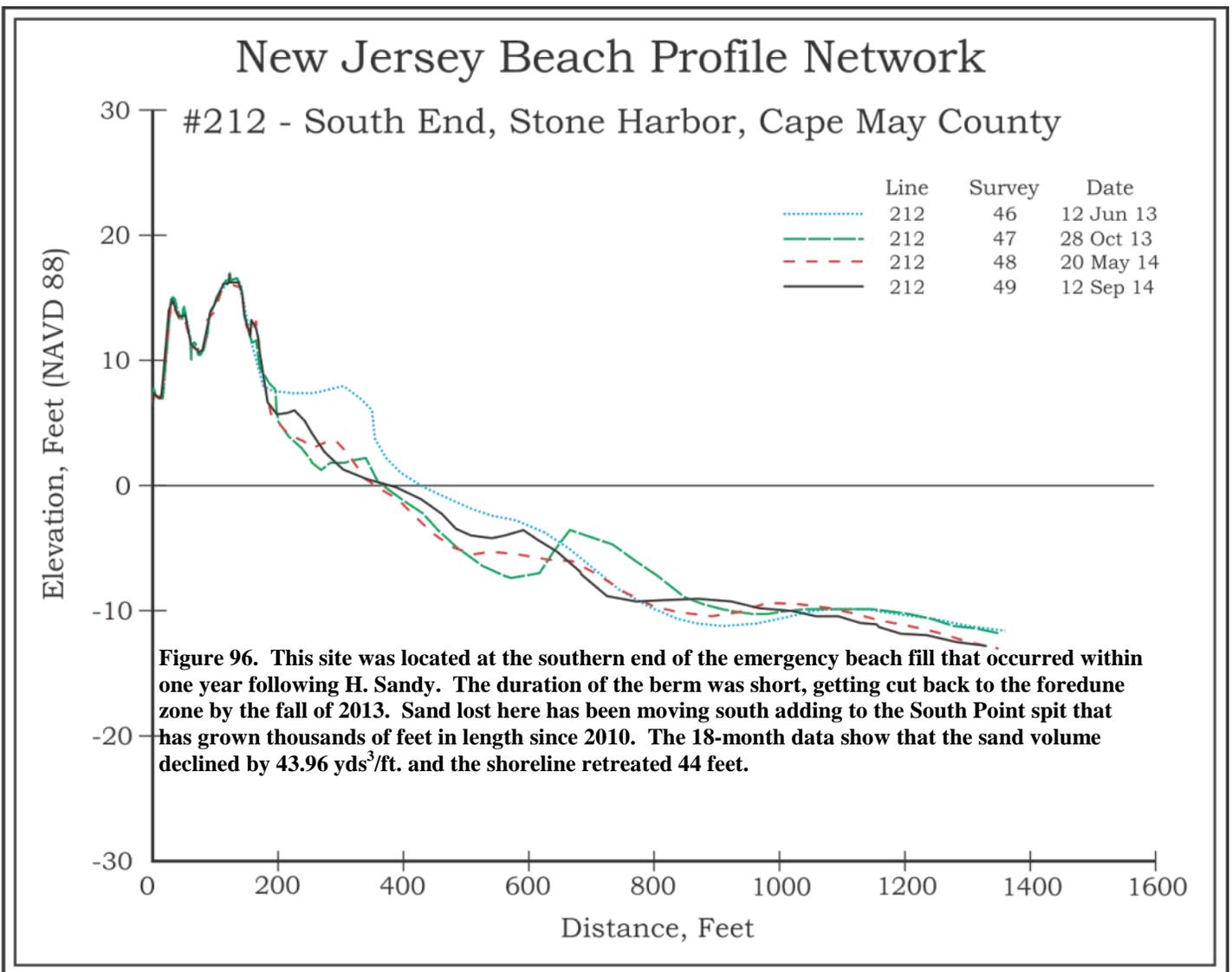
The 90th Street location is about a third the length of the Borough and has been quite stable not needing maintenance as frequently as sites further south. The foredune at the sand fence has grown upward and landward as wind-transported sand accumulates at the fence. The beach accumulated sand over the summer of 2014.



NJBPN 212 - 121st Street, Stone Harbor



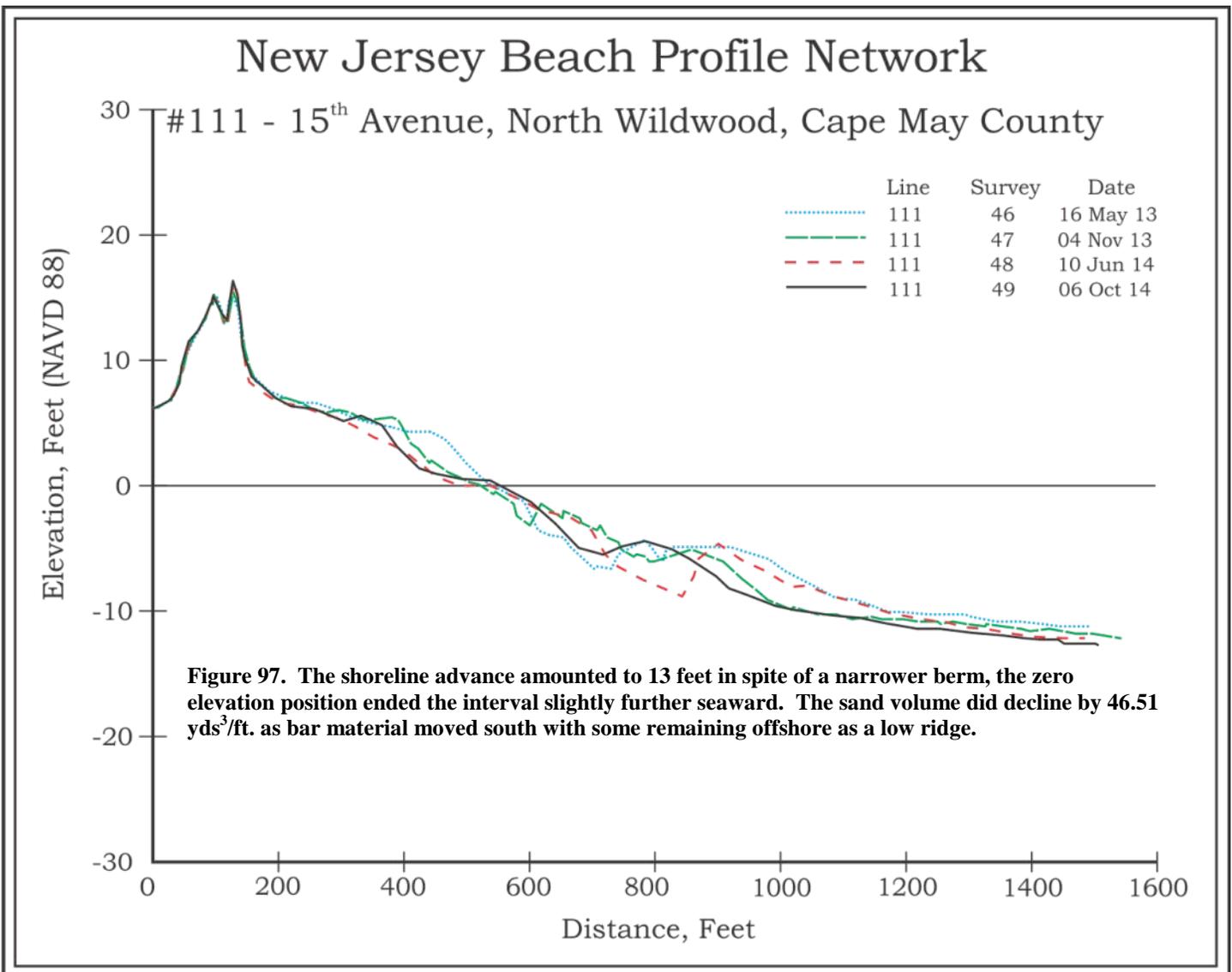
The south end Stone Harbor site has shown a long-term erosional trend that may be influenced by changes surrounding Hereford Inlet. The site has been the recipient of numerous beach nourishment projects including municipal and Federal efforts. The most recent shows in the June 2013 survey below. Rapid erosion followed so that by October 28, 2013, one year after Sandy, the berm was cut back to within 50 feet of the dune fence. The subsequent year did bring added sand from offshore and from the north to partly recover a summer beach by September 12, 2014.



NJBPN 111 - 15th Avenue, North Wildwood



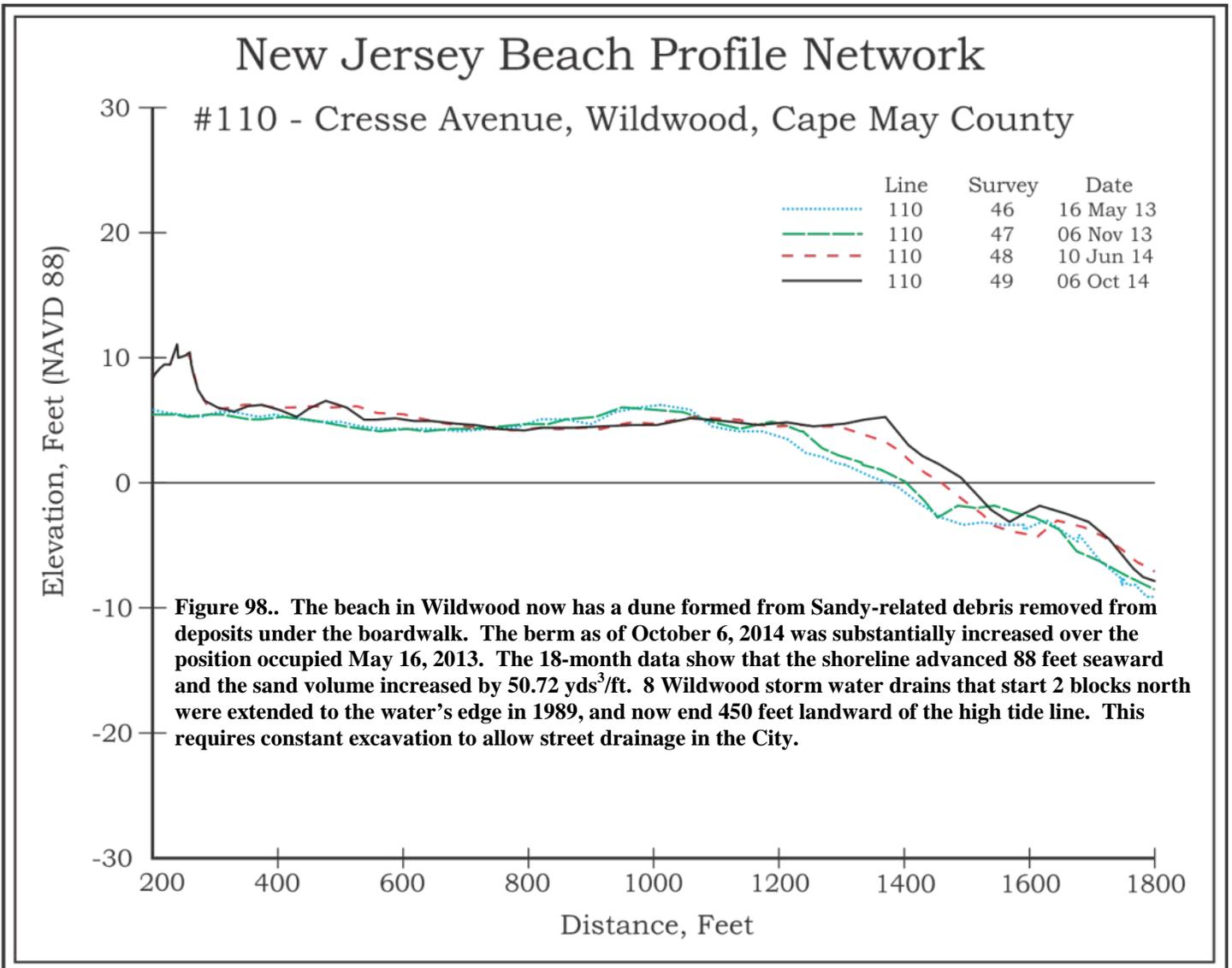
The 15th Avenue site is influenced by the dynamics at Hereford Inlet. The beach width decreased somewhat as the longer term erosion continued at the north end of the oceanfront beach. This dune remained stable, adding sand to the toe and seaward slopes. Offshore the bars moved slowly landward.



NJBPN 110 - Cresse Avenue, Wildwood



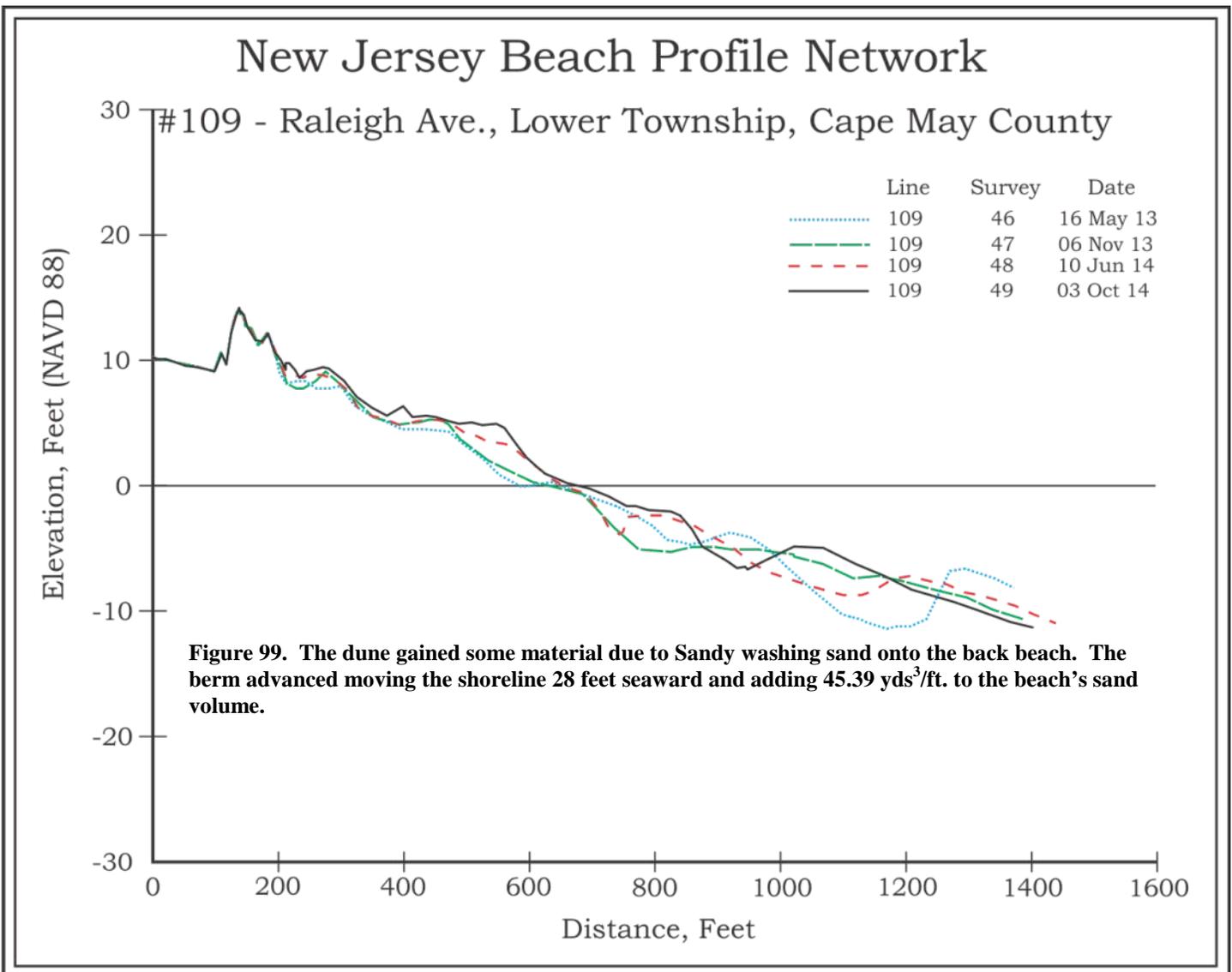
The Cresse Avenue site has been accumulating in volume since 1992. Sand lost from North Wildwood migrates south adding to the beach width each year. The rate varies, but each successive cross section below has a shoreline zero elevation point further seaward than the previous survey. The views above are at the berm crest and show the vast width of this beach.



NJBPN 109 - Raleigh Avenue, Lower Township



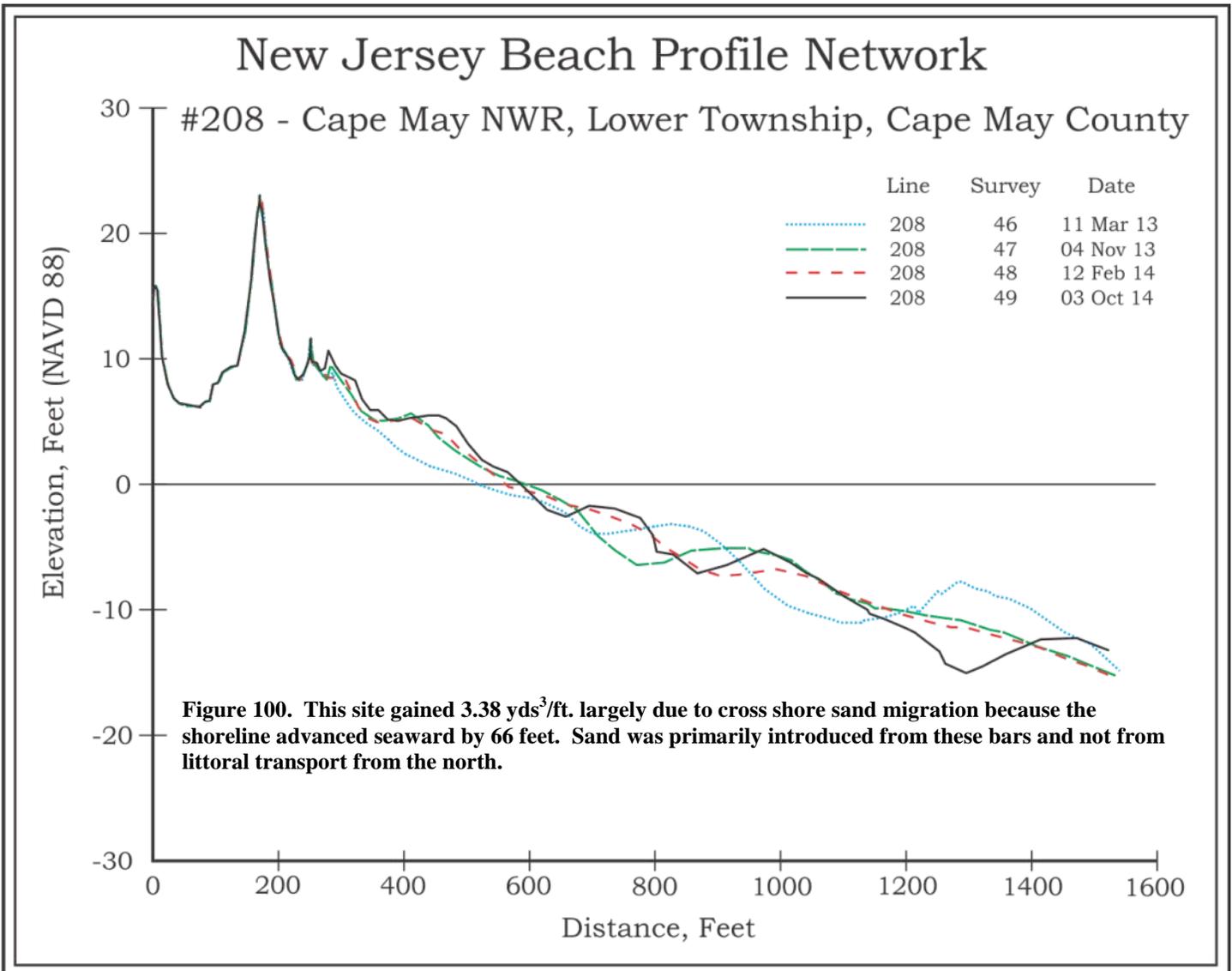
Left photo was taken November 6, 2013 and the right photo on October 6, 2014. Sand washed up onto the beach during Sandy accumulated in the dunes and near the dune toe. The beach berm advanced seaward as material moved in from offshore. The platforms are for condominium residents in the summer and were in the process of being hauled back to avoid storm losses.



NJBPN 208 – Cape May National Wildlife Refuge, Lower Township



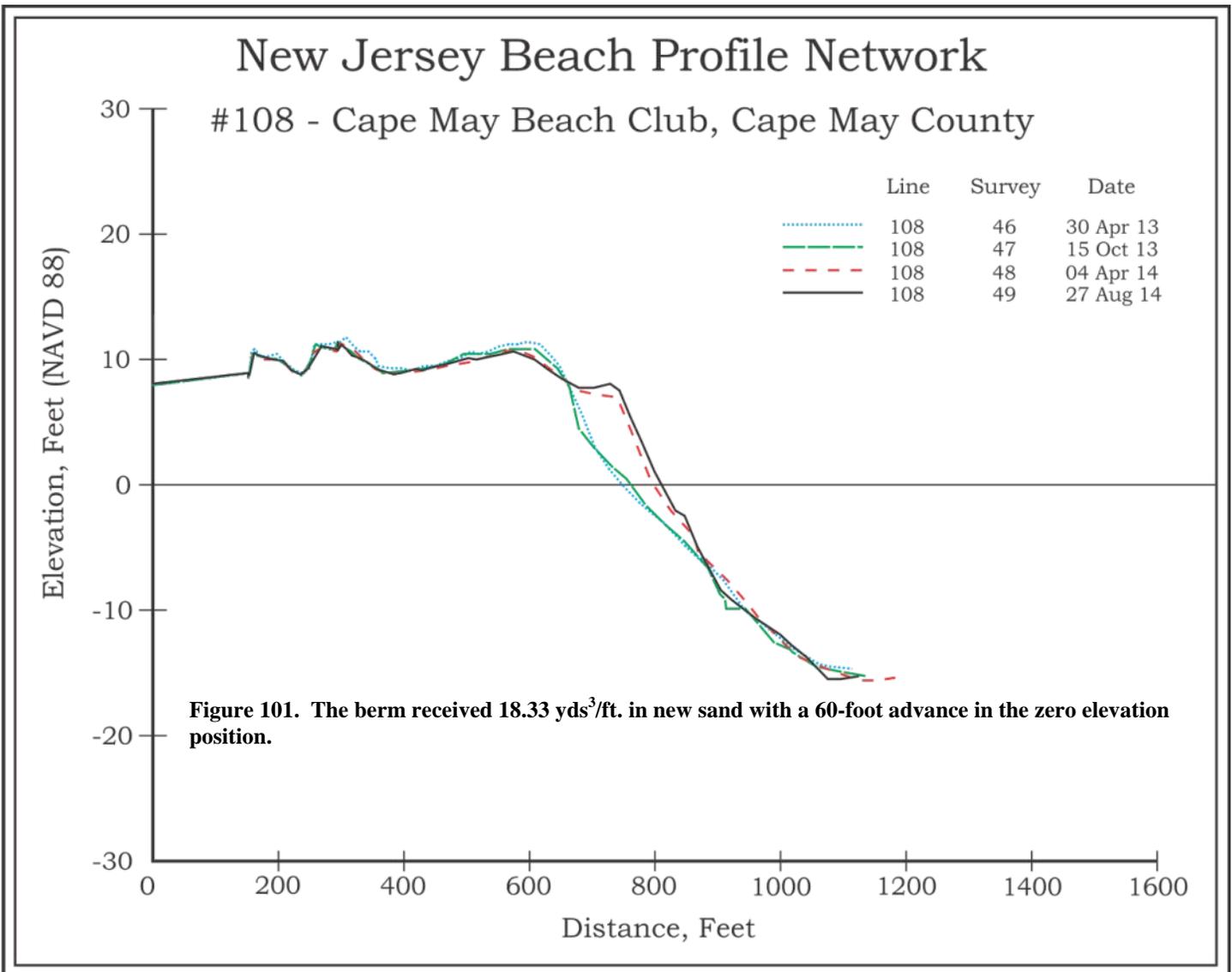
The primary dune changed little since it now resides behind a series of low foredune ridges that capture 99% of the wind transported sand. The berm accumulated sand as bars moved landward adding to the beach volume. This site is about a half mile south of all development.



NJBPN 108 - Cape May Beach Club, Cape May City



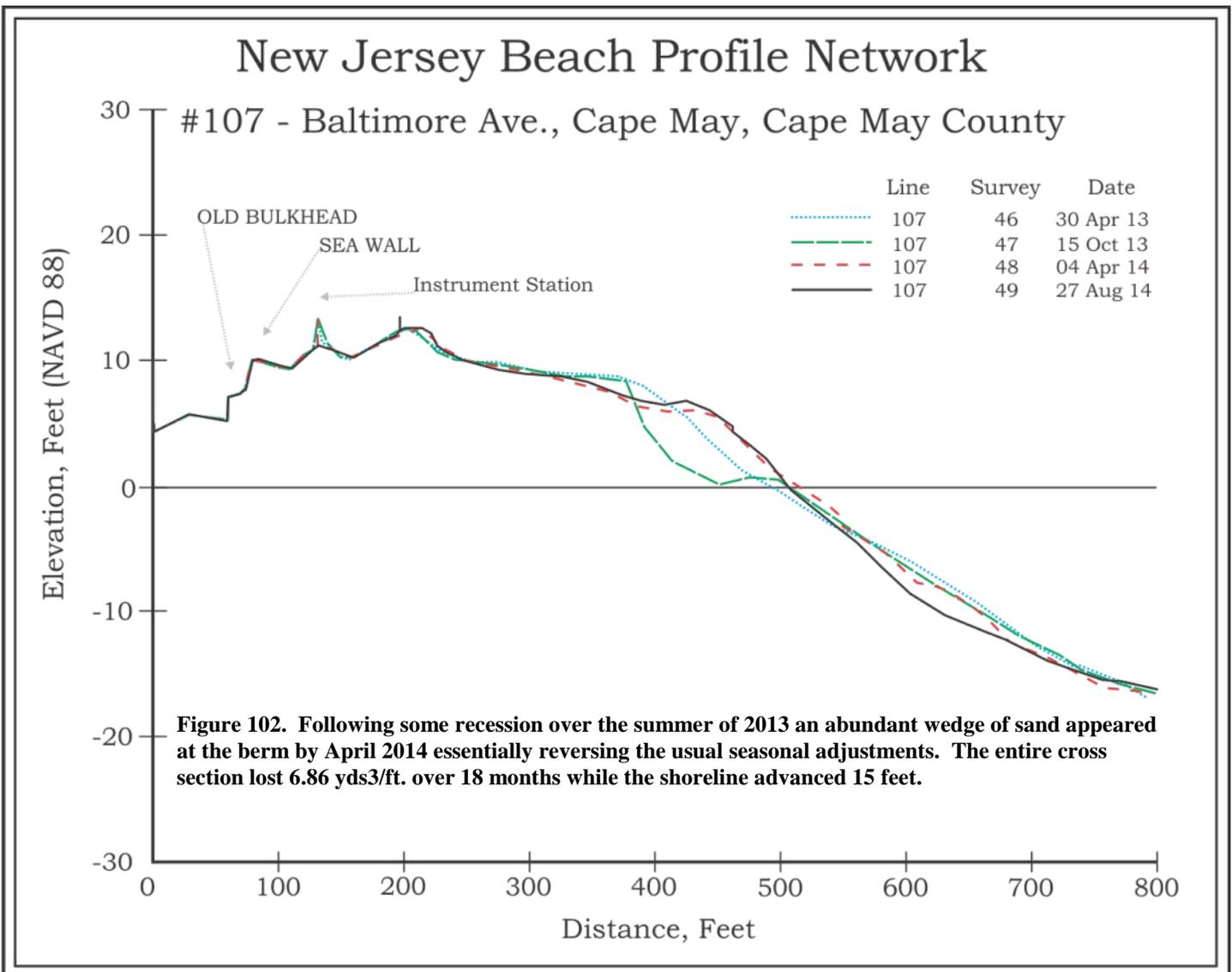
The berm shape and elevation did not change over 18 months, but the deposition produced an addition and some seaward advance in the beachface. Minor dunes exist, but are not continuous. The beach club actually slopes landward all the way to the street by which the public gains access. Seawater from Sandy washed all the way to the street.



NJBPN 107 - Baltimore Avenue, Cape May City



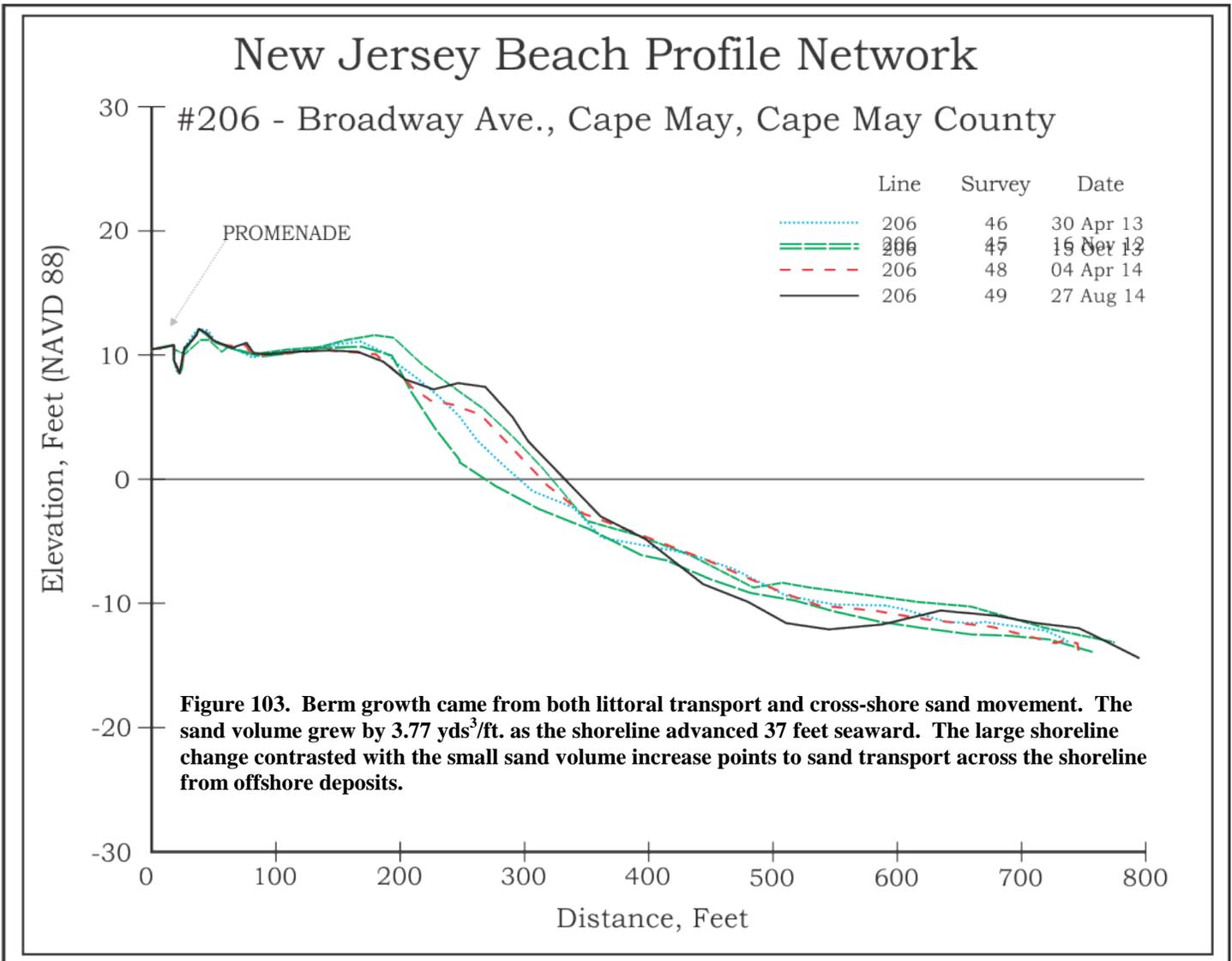
The left picture was taken on October 15, 2013, the right on August 27, 2014. These two views complement the cover photograph to emphasize the enormous change produced since 1989 when beach nourishment began. Both views would have been well into the ocean in 1989. The berm added a sizable slug of sand during the time since October 2013.



NJBPN 206 - Broadway Avenue, Cape May City



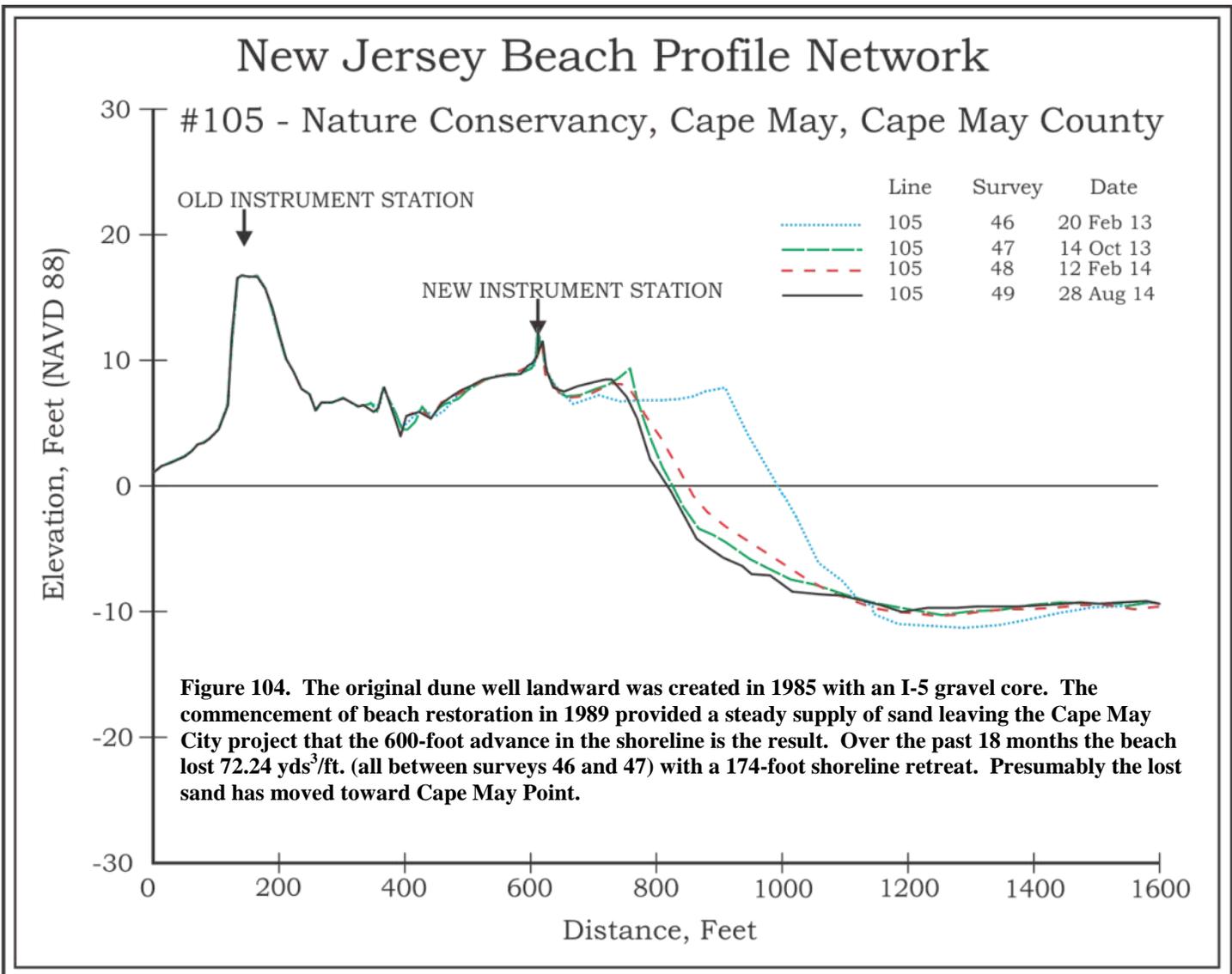
The left photo was taken on October 15, 2013, while the right was taken on August 27, 2014. This southern Cape May City beach is narrower as a result of Sandy, but the berm is higher. The same trend of recession occurred over the summer of 2013 followed by advance during both 2014 surveys. The 2014 view shows late summer beach activity at this high use area.



NJBPN 105 - Nature Conservancy, Cape May



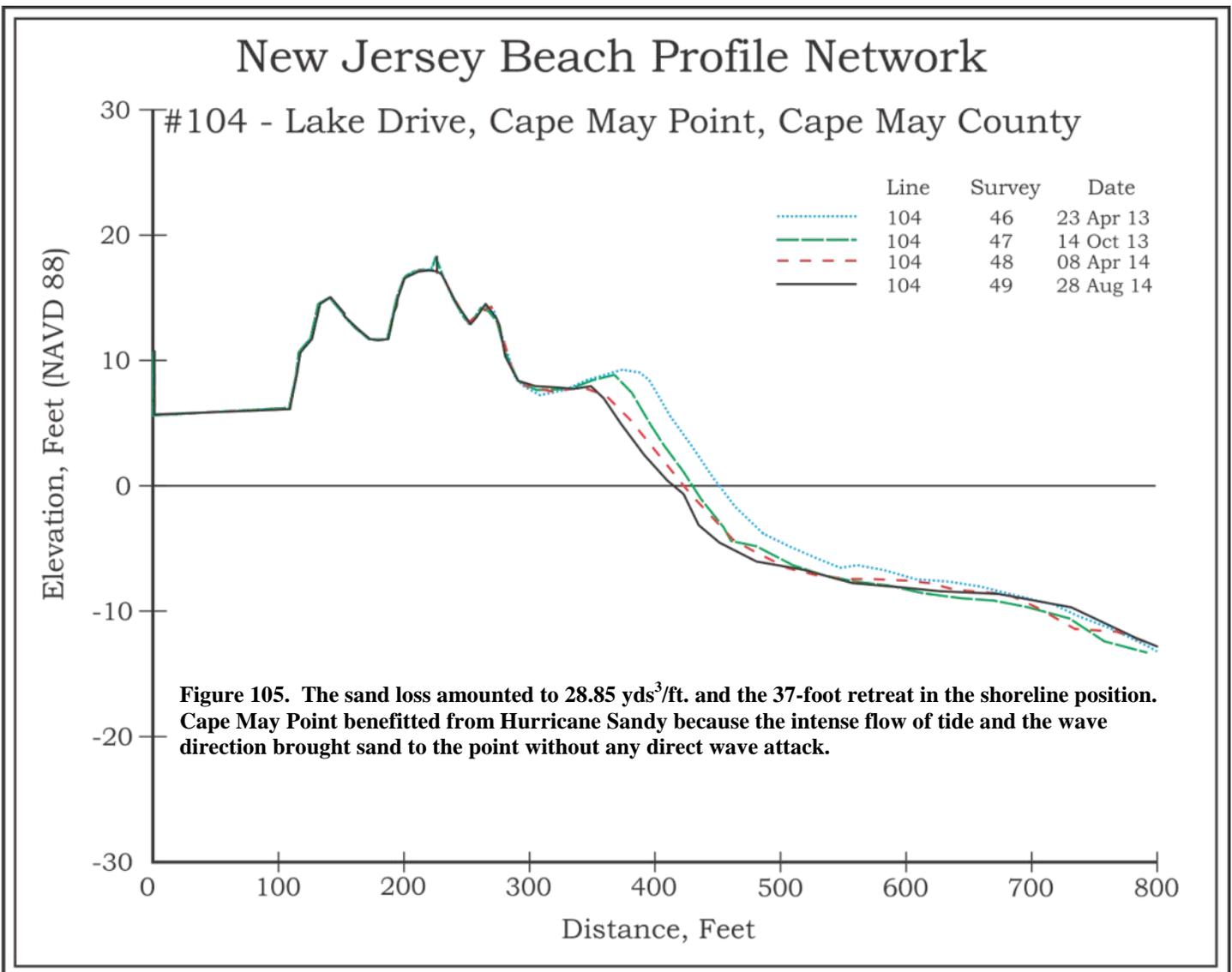
The October berm was sharply defined after serious retreat during the summer of 2013. Subsequently the situation stabilized with little further changes.



NJBPN 104 - Lake Drive, Cape May Point



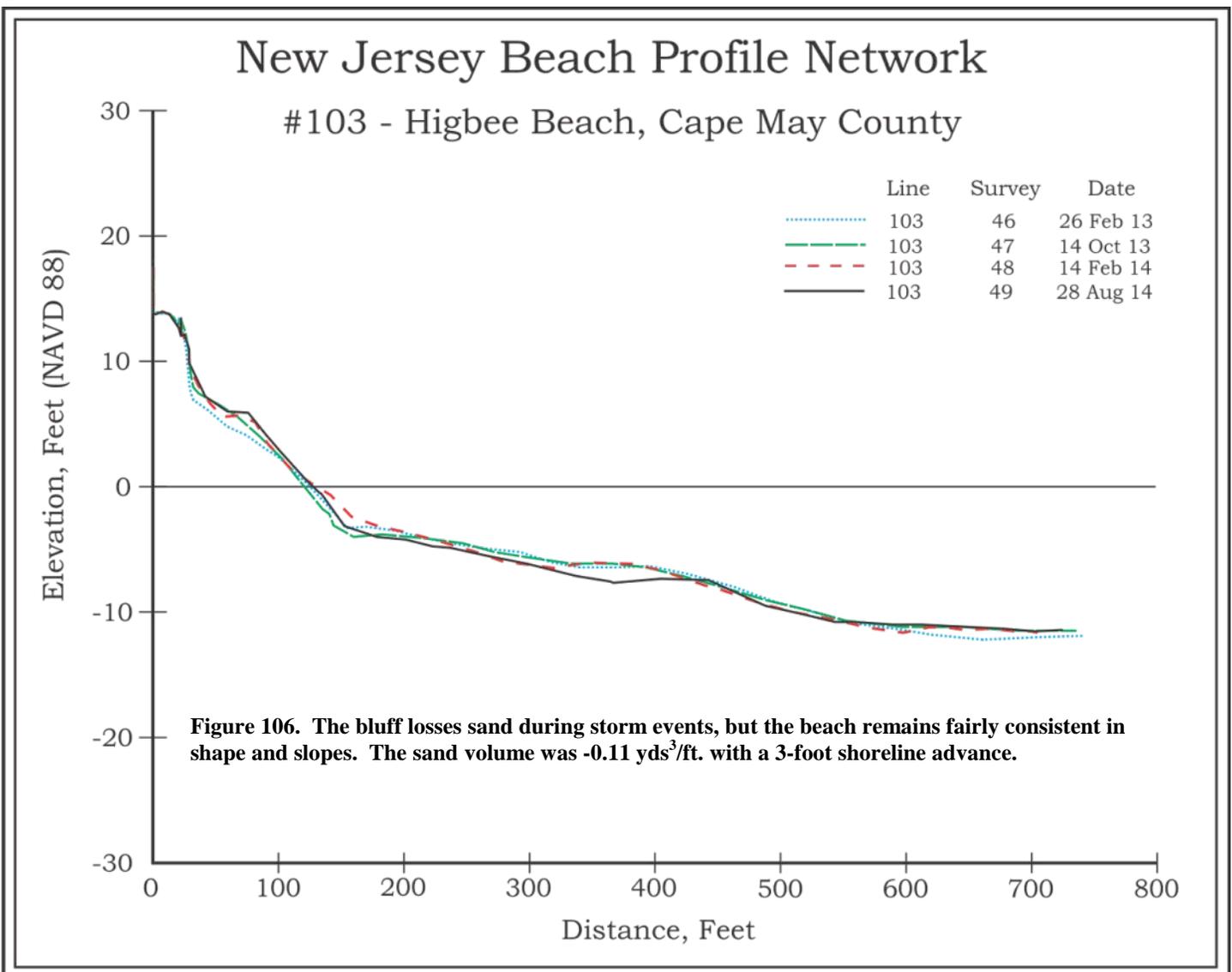
The left picture was taken October 14, 2013 and the right photo on August 28, 2014. The late summer beach was narrower by 37 feet since April 2013 with few changes to the shape of the berm or seaward segments.



NJBPN 103 - Higbee Beach State Park, Lower Township



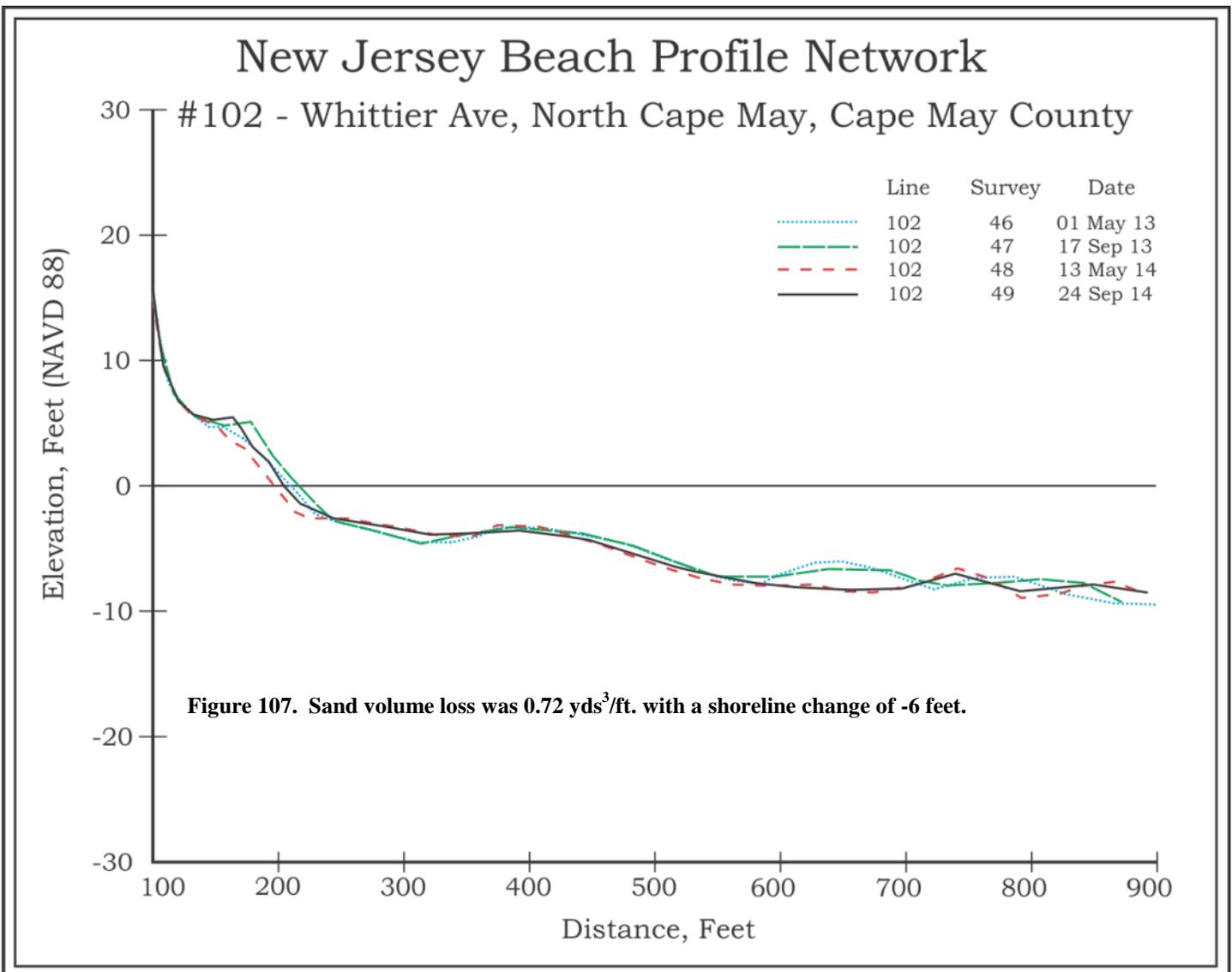
Between February 2013 and August 2014 few changes occurred. Sand was added to the berm likely from offshore in shallow water and from additions coming around Cape May Point.



NJBPN 102 - Whittier Avenue, North Cape May



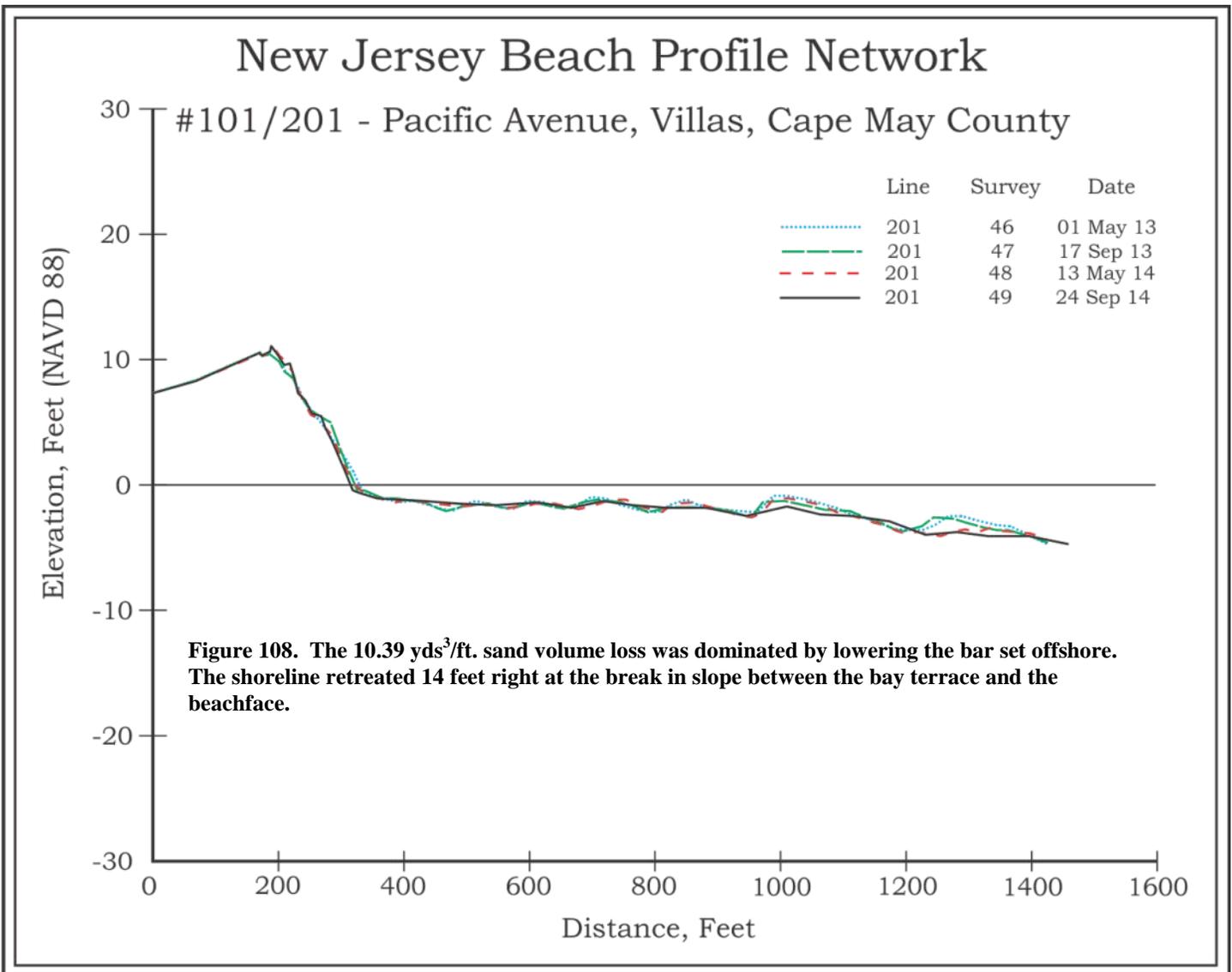
The left photo was taken on September 17, 2013 while the right photo was taken on September 24, 2014. Changes ranged around minor shifts in the beachface and sand redistribution in the ridges offshore on the wide terrace to Delaware Bay.



NJBPN 201 - Pacific Avenue, Villas



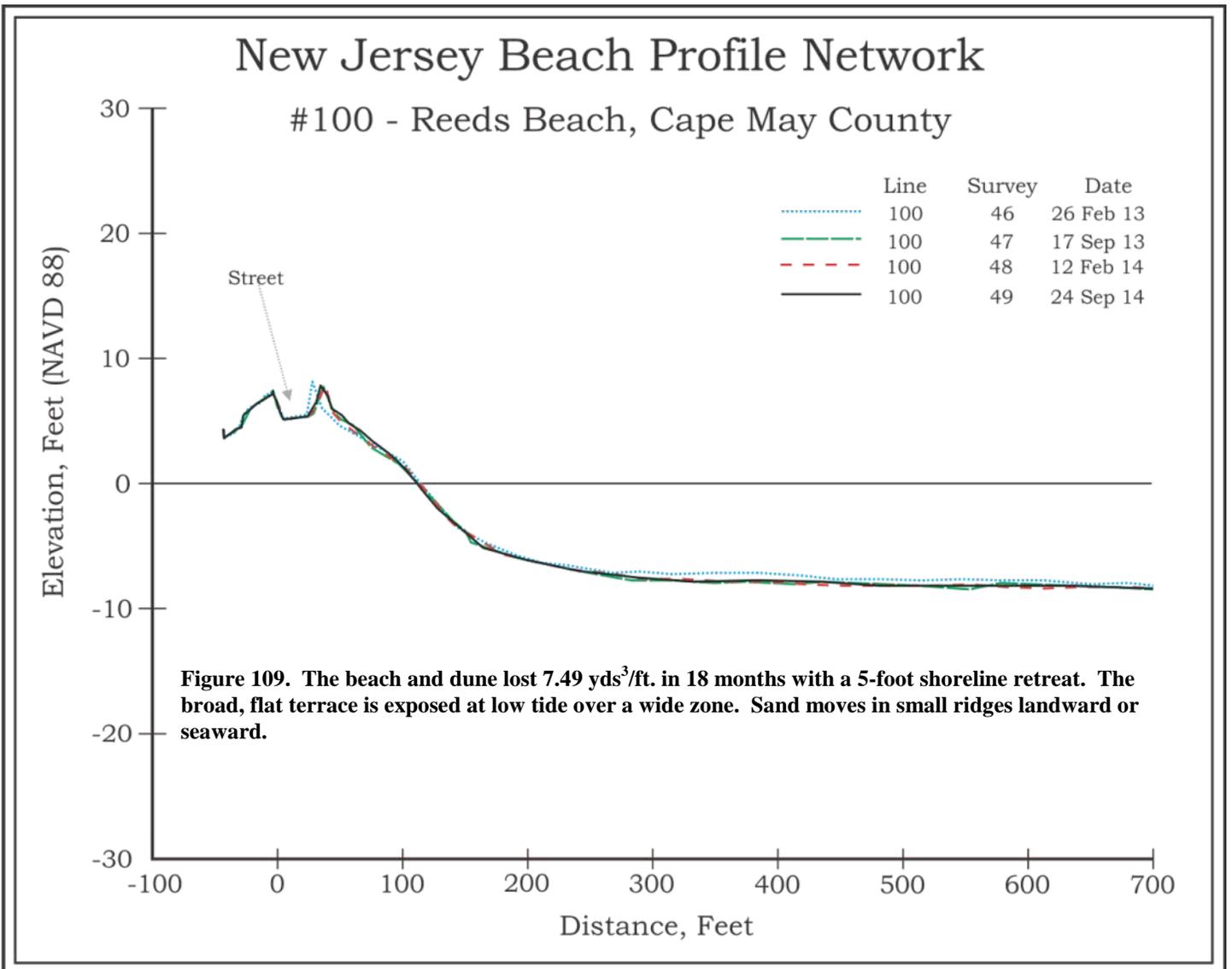
The left view was taken September 17, 2013 while the right photo was taken September 24, 2014. Minimal change occurred at Pacific Avenue with some dune grass growth toward the bay.



NJBPN 100 - Reeds Beach, Middle Township



The left photograph was taken September 17, 2013 and the right picture was taken on September 24, 2014. The two views show the road and dune landward of the road and the new ridge of sand placed on the upper beach to hold back minor wave/storm events. This is a site of the proposed dune with a core and a 40-foot beach berm added along the zone of development.



Summary and Conclusions for Cape May County:

Sandy’s sand redistribution at the southern Cape May County beach sites was redistributed largely as significant berm additions by the fall of 2014. The restoration of the ACOE constructed projects removed any significant storm losses and provided a source of sand to spread along the various shorelines.

Erosion continued to plague the northeast segment of Ocean City, Strathmere, Avalon and North Wildwood. Each site would be subject to additional maintenance in the future. Ocean City appears in satisfactory condition, with a major project set to begin extending from 34th Street in Ocean City across Corson’s Inlet and then south to Townsends Inlet.

Avalon continues to shed sand from the 10th to 21st Street segment and accumulate it between 35th and 70th Street beaches. The Borough is planning a major restoration May 2015. In North Wildwood, back-passing is being used to provide minor sand volumes (50,000 cy) to enhance the northern 5 city oceanfront beach blocks. An additional 43,000 cy will be made available in the fall of 2015 from sand dredged from Beach Creek.

Since Sandy, work by the Philadelphia District ACOE has restored all authorized and constructed projects back to individual project design specifications (the Table below courtesy of Jeffery Gebert, USACE).

Table 2. Cape May County ACOE Project Sand Volumes

SITE LOCATION	CONTRACTOR	SAND VOLUME (cy)	
Ocean City (berm)	Great Lakes Dredge and Dock	1,746,206	
Ocean City (dune betterment)	Great Lakes Dredge and Dock	56,110	
TCM - Avalon	Norfolk Dredging Company	336,359	
TCM - Stone Harbor	Norfolk Dredging Company	674,224	
CM Inlet to Lower Township	Weeks Marine Inc	585,328	
Lower Cape May Meadows - CM Pt	Weeks Marine Inc	345,000	Scheduled periodic nourishment (not post-Sandy FCCE work)

Work continues on the final design for the project for North Wildwood to Wildwood Crest utilizing some form of sand harvesting from the excesses seen in Wildwood and Wildwood Crest beaches to produce a sand “recycling” program, termed “Back Passing”.

The final element in the future is the revitalization of a one-time effort project to provide environmental enhancement to the Delaware Bay shoreline of western Cape May County. This project is not part of the Hurricane Sandy PL 113-2 work, so must be funded separately. Back in the 1990’s it was proposed as an environmental restoration for the western county coast, but never received Congressional appropriations to proceed to construction. Recently the Philadelphia District is re-assessing this project.

A proposal currently submitted to the NJDEP for 6,000 feet of Delaware Bay shoreline in Middle Township (Reeds & Pierces Point beaches) is under review and if funded would dovetail with and complement the existing National Fish & Wildlife Service’s Delaware Bay environmental habitat restoration program for benefit of horseshoe crabs and the Red Knots.

Even further up into Delaware Bay was an ACOE project completed in 2014 at Oakwood Beach in Salem County. Delaware River sand was transferred to a bulkhead shoreline to provide a new 50-foot berm totaling

350,000 cubic yards of material. This is representative of potential restoration projects in the future along the bay shoreline as a new venture in cooperative shoreline restoration.

Oakwood Beach Coastal Storm Damage Reduction Project Salem County, N.J.



Before

The U.S. Army Corps of Engineers constructed a 50-foot berm at Oakwood Beach in Salem County, N.J. to reduce the risk of future storm damages. The two mile project involved pumping 350,000 cubic yards of sand from the Delaware River onto the beach. Great Lakes Dredge & Dock Company served as contractor and completed construction in December of 2014.



After



U.S. Army Corps of Engineers
Philadelphia District

Figure 110. Before and after views of Oakwood beach on Delaware Bay following the Army Corps project, December 2014.

APPENDIX – COUNTY ANNUAL BEACH VOLUME AND SHORELINE CHANGES

TABLE 3

MONMOUTH COUNTY

ANNUAL BEACH VOLUME CHANGES

SPRING 2013 - SPRING 2014 & FALL 2013 - FALL 2014

		Survey	
		46 - 48	47 - 49
PROFILE SITE		S2013-S2014	F2013 - F2014
LOCATION		(volume expressed as cubic yards per foot)	
187:	Cliffwood Beach Park	-4.73	-0.34
286:	Union Beach	9.65	-5.67
185:	Port Monmouth, Spy House Museum	0.74	141.29
285:	Gateway National R. A., Gunnison Beach	43.52	13.29
284:	Gateway National R. A., Parking Lot E	51.88	-5.11
184:	Highland Beach, Gateway Entrance	68.79	35.97
183:	Highland Beach, Via Ripa St.	39.92	-10.37
282:	Sea Bright, Shrewsbury Way	15.11	27.68
182:	Sea Bright, North of Route 520	43.66	57.56
181:	Sea Bright, Municipal Beach	69.38	25.25
180:	Sea Bright, Sunset Court	42.56	19.52
179:	Monmouth Beach, Cottage Rd.	116.48	-72.67
178:	Monmouth Beach, Beach Club	127.93	-47.73
177:	Long Branch, 404 Ocean Ave.	56.70	135.22
176:	Long Branch, Seven Presidents Park	106.49	107.70
175:	Long Branch, North Broadway Ave.	105.26	101.34
174:	Long Branch, Morris Ave.	159.45	183.16
173:	Long Branch, West End Ave.	381.94	293.09
272:	Long Branch 805 Ocean Ave.	125.99	114.90
171:	Elberon, Pullman Ave.	15.98	-1.57
170:	Deal, Roosevelt Ave.	-21.08	-18.44
169:	Deal, Darlington Ave.	17.72	2.62
168:	Allenhurst, Corlies Ave.	0.80	-9.16
267:	Asbury Park, 7th Ave.	72.31	83.29
167:	Asbury Park, 3rd Ave.	40.63	55.45
166:	Ocean grove, Ocean Pathway	26.06	38.93
165:	Bradley Beach, McCabe Ave.	34.93	74.58
164:	Avon-By-The-Sea, Sylvania Ave.	85.72	93.19
163:	Belmar, 5th Ave.	5.68	7.93
162:	Belmar, 18th Ave.	36.03	59.37
161:	Spring Lake, Brighton Ave.	-6.20	26.63
160:	Spring Lake, Salem Ave.	-0.35	30.79
159:	Sea Girt, New York Ave.	43.63	27.77
158:	Sea Girt, Trenton Ave.	114.90	92.62
157:	Manasquan, Riddle Way	69.05	80.29
256:	Manasquan, Pompano Ave.	64.01	67.40

TABLE 4
MONMOUTH COUNTY
ANNUAL SHORELINE CHANGES
SPRING 2013 - SPRING 2014 & FALL 2013 - FALL 2014

		Survey	
		46 - 48	47 - 49
PROFILE SITE		S2013-S2014	F2013 - F2014
LOCATION		(shoreline change expressed in feet)	
187:	Cliffwood Beach Park	-17.5	-9.6
286:	Union Beach	8.0	0.6
185:	Port Monmouth, Spy House Museum	-1.7	263.3
285:	Gateway National R. A., Gunnison Beach	98.0	92.1
284:	Gateway National R. A., Parking Lot E	28.9	-3.4
184:	Highland Beach, Gateway Entrance	72.6	47.4
183:	Highland Beach, Via Ripa St.	34.3	-88.4
282:	Sea Bright, Shrewsbury Way	95.3	94.2
182:	Sea Bright, North of Route 520	98.5	91.8
181:	Sea Bright, Municipal Beach	107.8	11.8
180:	Sea Bright, Sunset Court	81.4	-24.5
179:	Monmouth Beach, Cottage Rd.	172.2	-133.0
178:	Monmouth Beach, Beach Club	117.7	-100.8
177:	Long Branch, 404 Ocean Ave.	65.1	164.1
176:	Long Branch, Seven Presidents Park	164.7	104.1
175:	Long Branch, North Broadway Ave.	105.2	74.8
174:	Long Branch, Morris Ave.	213.0	178.5
173:	Long Branch, West End Ave.	484.9	257.4
272:	Long Branch 805 Ocean Ave.	172.97	113.7
171:	Elberon, Pullman Ave.	10.2	-33.0
170:	Deal, Roosevelt Ave.	-5.4	-53.5
169:	Deal, Darlington Ave.	19.7	4.6
168:	Allenhurst, Corlies Ave.	30.6	-57.1
267:	Asbury Park, 7th Ave.	126.7	88.7
167:	Asbury Park, 3rd Ave.	102.7	30.0
166:	Ocean grove, Ocean Pathway	60.7	12.7
165:	Bradley Beach, McCabe Ave.	61.9	22.5
164:	Avon-By-The-Sea, Sylvania Ave.	88.4	82.8
163:	Belmar, 5th Ave.	25.4	3.9
162:	Belmar, 18th Ave.	104.6	44.5
161:	Spring Lake, Brighton Ave.	28.8	-22.9
160:	Spring Lake, Salem Ave.	3.8	-17.5
159:	Sea Girt, New York Ave.	93.2	21.1
158:	Sea Girt, Trenton Ave.	141.1	122.1
157:	Manasquan, Riddle Way	99.2	97.5
256:	Manasquan, Pompano Ave.	136.9	80.9

TABLE 5					
MONMOUTH COUNTY					
SEASONAL BEACH VOLUME CHANGES					
	Survey	46-47	47-48	48-49	46-49
PROFILE SITE		S13-F13	F13-S14	S14-F14	S13-F14
LOCATION	(volume expressed as cubic yards per foot of beachfront)				
187: Cliffwood Beach Park		-6.01	1.25	-1.60	-6.38
286: Union Beach		14.09	-4.40	-1.28	8.37
185: Port Monmouth, Spy House Museum		1.77	-1.02	142.11	142.79
285: Gateway National R. A., Gunnison Beach		17.93	26.25	-13.05	30.31
284: Gateway National R. A., Parking Lot E		48.47	3.53	-8.56	43.36
184: Highland Beach, Gateway Entrance		59.64	9.07	25.71	94.96
183: Highland Beach, Via Ripa St.		46.42	-5.55	-4.81	35.13
282: Sea Bright, Shrewsbury Way		15.56	-0.53	27.14	42.25
182: Sea Bright, North of Route 520		-11.66	55.15	2.49	45.98
181: Sea Bright, Municipal Beach		53.53	16.31	9.15	78.34
180: Sea Bright, Sunset Court		18.95	23.61	-4.44	38.47
179: Monmouth Beach, Cottage Rd.		201.44	-85.00	12.59	129.10
178: Monmouth Beach, Beach Club		181.20	-53.51	5.20	133.86
177: Long Branch, 404 Ocean Ave.		-12.31	68.64	64.82	123.04
176: Long Branch, Seven Presidents Park		-9.33	115.73	-7.67	98.24
175: Long Branch, North Broadway Ave.		-5.97	111.15	-9.52	95.55
174: Long Branch, Morris Ave.		-16.21	175.63	8.06	167.25
173: Long Branch, West End Ave.		-7.27	385.38	-99.59	288.46
272: Long Branch 805 Ocean Ave.		-11.06	136.84	-23.75	102.66
171: Elberon, Pullman Ave.		17.71	-1.68	0.27	16.13
170: Deal, Roosevelt Ave.		-4.99	-16.73	-2.04	-23.13
169: Deal, Darlington Ave.		14.16	3.43	1.29	18.13
168: Allenhurst, Corlies Ave.		12.87	-12.91	3.71	4.64
267: Asbury Park, 7th Ave.		-19.91	92.68	-9.71	62.84
167: Asbury Park, 3rd Ave.		-20.14	60.39	-4.97	35.71
166: Ocean grove, Ocean Pathway		-9.20	35.79	0.86	29.84
165: Bradley Beach, McCabe Ave.		-43.57	75.40	-0.66	30.70
164: Avon-By-The-Sea, Sylvania Ave.		7.17	81.58	12.07	99.16
163: Belmar, 5th Ave.		11.35	-4.40	12.25	18.71
162: Belmar, 18th Ave.		-30.21	66.17	-6.80	29.19
161: Spring Lake, Brighton Ave.		8.15	-13.71	40.47	34.13
160: Spring Lake, Salem Ave.		-32.04	32.29	-1.96	-2.24
159: Sea Girt, New York Ave.		20.66	23.81	3.23	44.81
158: Sea Girt, Trenton Ave.		20.62	94.20	-1.51	113.49
157: Manasquan, Riddle Way		-24.85	94.17	-13.74	56.14
256: Manasquan, Pompano Ave.		-18.25	82.26	-14.99	48.72

TABLE 6						
MONMOUTH COUNTY						
SEASONAL SHORELINE CHANGES						
	Survey	46-47	47-48	48-49	46-49	
PROFILE SITE		S13-F13	F13-S14	S14-F14		S13-F14
LOCATION	(shoreline change expressed in feet)					
187: Cliffwood Beach Park		-10.8	-6.7	-2.9		-20.4
286: Union Beach		2.6	5.47	-4.8		3.20
185: Port Monmouth, Spy House Museum		-4.1	2.4	260.9		259.2
285: Gateway National R. A., Gunnison Beach		7.7	90.3	1.8		99.8
284: Gateway National R. A., Parking Lot E		35.2	-6.3	2.9		31.8
184: Highland Beach, Gateway Entrance		35.7	37.0	10.4		83.0
183: Highland Beach, Via Ripa St.		62.0	-27.7	-60.7		-26.4
282: Sea Bright, Shrewsbury Way		74.2	20.0	74.2		169.5
182: Sea Bright, North of Route 520		7.7	90.8	1.0		99.5
181: Sea Bright, Municipal Beach		104.1	3.6	8.2		115.9
180: Sea Bright, Sunset Court		65.3	16.1	-40.6		40.8
179: Monmouth Beach, Cottage Rd.		292.7	-120.5	-12.5		159.7
178: Monmouth Beach, Beach Club		230.9	-113.2	12.5		130.1
177: Long Branch, 404 Ocean Ave.		20.8	44.3	119.9		185.0
176: Long Branch, Seven Presidents Park		27.3	137.4	-33.3		131.4
175: Long Branch, North Broadway Ave.		28.2	77.0	-2.3		103.0
174: Long Branch, Morris Ave.		21.4	191.5	-13.0		199.9
173: Long Branch, West End Ave.		48.8	436.1	-178.6		306.3
272: Long Branch 805 Ocean Ave.		-34.9	207.86	-94.2		78.8
171: Elberon, Pullman Ave.		48.5	-38.3	5.3		15.4
170: Deal, Roosevelt Ave.		58.6	-64.0	10.5		5.1
169: Deal, Darlington Ave.		23.1	-3.5	8.0		27.7
168: Allenhurst, Corlies Ave.		105.7	-75.1	18.1		48.6
267: Asbury Park, 7th Ave.		26.7	100.0	-11.4		115.4
167: Asbury Park, 3rd Ave.		67.7	34.9	-4.9		97.7
166: Ocean grove, Ocean Pathway		59.5	1.2	11.5		72.2
165: Bradley Beach, McCabe Ave.		27.5	34.4	-11.9		50.0
164: Avon-By-The-Sea, Sylvania Ave.		24.8	63.7	19.1		107.6
163: Belmar, 5th Ave.		43.9	-18.5	22.5		47.8
162: Belmar, 18th Ave.		31.4	73.2	-28.7		75.9
161: Spring Lake, Brighton Ave.		64.4	-35.6	12.7		41.5
160: Spring Lake, Salem Ave.		15.4	-11.5	-6.0		-2.2
159: Sea Girt, New York Ave.		85.6	7.6	13.5		106.7
158: Sea Girt, Trenton Ave.		34.2	106.9	15.2		156.2
157: Manasquan, Riddle Way		-5.9	105.1	-7.6		91.6
256: Manasquan, Pompano Ave.		24.4	112.5	-31.6		105.3

TABLE 7				
OCEAN COUNTY				
ANNUAL BEACH VOLUME CHANGES				
SPRING 2013 - SPRING 2014 & FALL 2013 - FALL 2014				
		Survey		
		46 - 48		47 - 49
PROFILE SITE		S2013-S2014		F2013 - F2014
LOCATION		(volume expressed as cubic yards per foot)		
156:	Point Pleasant, Water St.	24.58		11.82
155:	Point Pleasant, Maryland Ave.	-1.95		-2.61
154:	Bay Head, Johnson Ave.	-5.36		-0.99
153:	Mantoloking, 1117 Ocean Ave.	71.80		-4.89
152:	Brick Townhsip, Public Beach	-18.17		0.11
151:	Normandy Beach, 1st Ave	23.99		12.61
150:	Lavallette, White Ave.	-23.02		-7.36
149:	Ortley Beach, 8th Ave.	4.20		8.55
248:	Seaside, Franklin Ave.	24.14		22.25
148:	Seaside Park, 4th Ave.	-46.25		19.61
347:	Berkeley Township, 6th Ave.	-32.59		8.87
247:	Island Beach State Park, North	-29.07		-1.51
246:	Island Beach State Park, Middle	34.71		-15.29
146:	Island Beach State Park, South	11.55		-8.38
245:	Barnegat Light, 10th St.	0.54		-38.41
145:	Barnegat Light, 26th St.	17.67		16.07
144:	Loveladies, La Baia St.	-5.96		1.39
143:	Harvey Cedars, 73rd St.	72.46		-29.61
142:	Harvey Cedars, Tranquility Drive	72.10		20.71
241:	Surf City, 20th St.	9.48		-30.98
141:	Ship Bottom, 8th St.	96.13		26.91
140:	Long BeachTownship, 32nd St.	76.48		-40.50
139:	Long Beach Township, 81st St.	31.53		25.48
138:	Long Beach Township, Old Whaling Rd.	-17.56		-16.45
137:	Beach Haven, Taylor Ave.	-26.30		-12.78
136:	Beach Haven, Dolphin Ave.	29.28		2.86
135:	Long Beach Township, Webster Ave.	18.37		8.38
234:	Long Beach Township, Border w/ Refuge	-46.52		3.98

TABLE 8				
OCEAN COUNTY				
ANNUAL SHORELINE CHANGES				
SPRING 2013 - SPRING 2014 & FALL 2013 - FALL 2014				
		Survey		
		46 - 48		47 - 49
PROFILE SITE		S2013-S2014		F2013 - F2014
LOCATION		(shoreline change expressed in feet)		
156:	Point Pleasant, Water St.	64.18		-10.17
155:	Point Pleasant, Maryland Ave.	13.35		-6.63
154:	Bay Head, Johnson Ave.	28.92		-42.45
153:	Mantoloking, 1117 Ocean Ave.	54.56		-10.75
152:	Brick Township, Public Beach	2.45		-39.27
151:	Normandy Beach, 1st Ave	27.50		-19.07
150:	Lavallette, White Ave.	29.49		-33.49
149:	Ortley Beach, 8th Ave.	-11.36		21.19
248:	Seaside, Franklin Ave.	36.80		-10.83
148:	Seaside Park, 4th Ave.	-1.45		0.60
347:	Berkeley Township, 6th Ave.	2.26		8.81
247:	Island Beach State Park, North	-1.77		-0.01
246:	Island Beach State Park, Middle	85.60		1.04
146:	Island Beach State Park, South	32.51		-9.98
245:	Barnegat Light, 10th St.	-1.77		-26.18
145:	Barnegat Light, 26th St.	63.03		22.88
144:	Loveladies, La Baia St.	16.12		-7.92
143:	Harvey Cedars, 73rd St.	80.58		-123.33
142:	Harvey Cedars, Tranquility Drive	89.24		-102.63
241:	Surf City, 20th St.	22.65		-100.42
141:	Ship Bottom, 8th St.	127.05		23.30
140:	Long Beach Township, 32nd St.	117.76		-121.39
139:	Long Beach Township, 81st St.	53.61		21.89
138:	Long Beach Township, Old Whaling Rd.	-16.52		-9.42
137:	Beach Haven, Taylor Ave.	-41.30		-32.62
136:	Beach Haven, Dolphin Ave.	33.03		-9.03
135:	Long Beach Township, Webster Ave.	21.44		5.63
234:	Long Beach Township, Border w/ Refuge	-51.57		-117.65

TABLE 9					
OCEAN COUNTY					
SEASONAL BEACH VOLUME CHANGES					
	Survey	46-47	47-48	48-49	46-49
PROFILE SITE		S13-F13	F13-S14	S14-F14	S13-F14
LOCATION	(volume expressed as cubic yards per foot of beachfront)				
156: Point Pleasant, Water St.		30.36	-5.75	17.61	42.24
155: Point Pleasant, Maryland Ave.		-0.78	-0.31	-1.72	-2.16
154: Bay Head, Johnson Ave.		4.57	-9.79	9.24	3.81
153: Mantoloking, 1117 Ocean Ave.		71.41	2.81	-7.94	57.02
152: Brick Township, Public Beach		2.56	-20.76	18.62	4.23
151: Normandy Beach, 1st Ave		5.64	18.14	-5.42	17.80
150: Lavallette, White Ave.		-26.95	3.25	-11.47	-32.70
149: Ortley Beach, 8th Ave.		-4.25	8.64	-0.30	3.77
248: Seaside, Franklin Ave.		1.07	24.26	-2.40	23.88
148: Seaside Park, 4th Ave.		-41.61	-4.56	24.12	-21.58
347: Berkeley Township, 6th Ave.		-23.27	-9.10	17.46	-14.43
247: Island Beach State Park, North		7.76	-38.24	34.06	7.05
246: Island Beach State Park, Middle		36.94	-2.60	-15.03	22.50
146: Island Beach State Park, South		2.08	9.60	-18.31	-6.32
245: Barnegat Light, 10th St.		9.43	-8.86	-29.53	-29.00
145: Barnegat Light, 26th St.		9.75	7.74	8.30	26.24
144: Loveladies, La Baia St.		-5.29	-0.72	0.92	-2.56
143: Harvey Cedars, 73rd St.		104.24	-38.71	14.04	86.78
142: Harvey Cedars, Tranquility Drive		62.38	11.84	9.34	81.93
241: Surf City, 20th St.		34.02	-25.85	-7.12	2.31
141: Ship Bottom, 8th St.		54.22	42.10	-14.99	80.69
140: Long Beach Township, 32nd St.		135.50	-55.13	16.27	92.56
139: Long Beach Township, 81st St.		-8.70	38.59	-13.12	18.49
138: Long Beach Township, Old Whaling Rd.		-17.59	0.29	-16.85	-34.82
137: Beach Haven, Taylor Ave.		0.34	-26.81	12.97	-12.02
136: Beach Haven, Dolphin Ave.		30.82	-1.54	3.67	34.02
135: Long Beach Township, Webster Ave.		14.02	4.12	4.23	22.39
234: Long Beach Township, Border w/ Refuge		-76.62	30.95	-25.93	-73.16
VOLUME CHANGES for OCEAN CO.	Survey	46-47	47-48	48-49	46-49
		(cu yds/ft)	(cu yds/ft)	(cu yds/ft)	(cu yds/ft)
SUM of SAND VOLUMES for 28 SITES		412.06	-46.41	20.74	398.95
AVERAGE SAND VOLUME per SITE		14.72	-1.66	0.74	14.25
Northern Ocean Co. Sand Volume Change		63.46	-34.01	76.84	111.43
Average Northern Ocean Co. Volume Change		4.53	-2.43	5.49	7.96
Long Beach Island Sand Volume Change		346.51	-22.00	-37.79	293.83
Average Long Beach Island Volume Change		24.75	-1.57	-2.70	20.99

TABLE 10
OCEAN COUNTY
SEASONAL SHORELINE CHANGES

	Survey	46-47	47-48	48-49	46-49
PROFILE SITE		S13-F13	F13-S14	S14-F14	S13-F14
LOCATION		(shoreline change expressed in feet)			
156: Point Pleasant, Water St.		83.40	-19.22	9.05	73.23
155: Point Pleasant, Maryland Ave.		37.91	-24.56	17.93	31.27
154: Bay Head, Johnson Ave.		66.06	-37.14	-5.31	23.62
153: Mantoloking, 1117 Ocean Ave.		70.01	-15.46	4.70	59.26
152: Brick Township, Public Beach		59.95	-57.50	18.23	20.68
151: Normandy Beach, 1st Ave		55.38	-27.88	8.81	36.30
150: Lavallette, White Ave.		53.24	-23.75	-9.74	19.75
149: Ortley Beach, 8th Ave.		-18.88	7.52	13.67	2.31
248: Seaside, Franklin Ave.		51.38	-14.58	3.75	40.55
148: Seaside Park, 4th Ave.		26.81	-28.26	28.87	27.41
347: Berkeley Township, 6th Ave.		16.73	-14.37	23.18	25.44
247: Island Beach State Park, North		31.85	-33.61	33.61	31.84
246: Island Beach State Park, Middle		88.28	-2.68	3.72	89.32
146: Island Beach State Park, South		44.62	-12.12	2.13	34.64
245: Barnegat Light, 10th St.		8.43	-10.20	-15.98	-17.75
145: Barnegat Light, 26th St.		56.21	6.83	16.05	79.08
144: Loveladies, La Baia St.		32.64	-16.52	8.60	24.72
143: Harvey Cedars, 73rd St.		222.19	-141.61	18.28	98.86
142: Harvey Cedars, Tranquility Drive		189.56	-100.32	-2.31	86.93
241: Surf City, 20th St.		141.83	-119.18	18.76	41.41
141: Ship Bottom, 8th St.		90.96	36.09	-12.80	114.25
140: Long Beach Township, 32nd St.		246.04	-128.28	6.89	124.65
139: Long Beach Township, 81st St.		37.92	15.59	6.30	59.91
138: Long Beach Township, Old Whaling Rd.		-6.13	-10.39	0.97	-15.55
137: Beach Haven, Taylor Ave.		23.71	-65.01	32.39	-8.90
136: Beach Haven, Dolphin Ave.		48.75	-15.73	6.70	39.72
135: Long Beach Township, Webster Ave.		48.92	-27.47	33.11	54.55
234: Long Beach Township, Border w/Refuge		17.27	-68.85	-48.80	-100.38
SHORELINE CHANGES for OCEAN CO	Survey	46-47	47-48	48-49	46-49
		(feet)	(feet)	(feet)	(feet)
SUM of SHORELINE CHANGES for 28 SITES		1825.04	-948.66	220.76	1097.12
AVERAGE SHORELINE CHANGE per SITE		65.18	-33.88	7.88	39.18
Northern Ocean Co. Shoreline Change		622.12	-291.49	150.47	480.98
Average Northern Ocean Co. Shoreline Change		44.44	-20.82	10.75	34.36
Long Beach Island Shoreline Change		1158.30	-645.05	68.16	581.50
Average Long Beach Island Shoreline Change		82.74	-46.08	4.87	41.54

TABLE 11				
ATLANTIC COUNTY				
ANNUAL BEACH VOLUME CHANGES				
SPRING 2013 - SPRING 2014 & FALL 2013 - FALL 2014				
			Survey	
		46 - 48		47 - 49
PROFILE SITE		S2013-S2014		F2013 - F2014
LOCATION		(volume expressed as cubic yards per foot)		
134: Brigantine, Green Acres		-17.19		25.17
133: Brigantine, 4th Street North		-12.86		13.13
132: Brigantine, 15th Street South		-31.66		25.27
131: Brigantine, 43rd Street South		32.46		42.58
230: Atlantic City, Rhode Island Ave.		39.97		-141.80
130: Atlantic City, North Carolina Ave.		-3.08		-54.82
129: Atlantic City, Raleigh Ave.		26.78		14.80
128: Ventnor City, Dorset Ave.		40.68		7.23
127: Margate City, Benson Ave.		7.44		-13.00
126: Longport, 17th St.		28.25		15.93

TABLE 12				
ATLANTIC COUNTY				
ANNUAL SHORELINE CHANGES				
SPRING 2013 - SPRING 2014 & FALL 2013 - FALL 2014				
			Survey	
		46 - 48		47 - 49
PROFILE SITE		S2013-S2014		F2013 - F2014
LOCATION		(shoreline change expressed in feet)		
134: Brigantine, Green Acres		-2.1		9.6
133: Brigantine, 4th Street North		-30.0		-63.0
132: Brigantine, 15th Street South		10.5		75.8
131: Brigantine, 43rd Street South		-67.5		149.4
230: Atlantic City, Rhode Island Ave.		37.9		-216.5
130: Atlantic City, North Carolina Ave.		31.7		-86.2
129: Atlantic City, Raleigh Ave.		64.0		29.7
128: Ventnor City, Dorset Ave.		72.5		-27.7
127: Margate City, Benson Ave.		8.5		-26.5
126: Longport, 17th St.		105.8		16.4

TABLE 13					
ATLANTIC COUNTY					
SEASONAL BEACH VOLUME CHANGES					
	Survey	46-47	47-48	48-49	46-49
PROFILE SITE		S13-F13	F13-S14	S14-F14	S13-F14
LOCATION	(volume expressed as cubic yards per foot of beachfront)				
134: Brigantine, Green Acres		-15.44	-1.54	27.27	11.19
133: Brigantine, 4th Street North		-29.07	16.05	-3.09	-16.03
132: Brigantine, 15th Street South		-39.95	7.91	17.39	-14.67
131: Brigantine, 43rd Street South		12.42	20.14	22.68	55.29
230: Atlantic City, Rhode Island Ave.		155.86	-120.18	-22.02	18.98
130: Atlantic City, North Carolina Ave.		49.64	-52.90	-4.21	-4.40
129: Atlantic City, Raleigh Ave.		73.85	-45.87	60.45	90.62
128: Ventnor City, Dorset Ave.		50.68	-9.79	17.21	58.23
127: Margate City, Benson Ave.		24.63	-17.19	4.08	11.51
126: Longport, 17th St.		18.44	9.93	5.85	33.70

TABLE 14					
ATLANTIC COUNTY					
SEASONAL SHORELINE CHANGES					
	Survey	46-47	47-48	48-49	46-49
PROFILE SITE		S13-F13	F13-S14	S14-F14	S13-F14
LOCATION	(shoreline change expressed in feet)				
134: Brigantine, Green Acres		-11.5	9.4	0.2	-1.9
133: Brigantine, 4th Street North		-16.5	-13.5	-49.6	-79.5
132: Brigantine, 15th Street South		-64.8	75.3	0.5	11.0
131: Brigantine, 43rd Street South		-120.6	53.1	96.3	28.8
230: Atlantic City, Rhode Island Ave.		214.4	-176.6	-39.9	-2.0
130: Atlantic City, North Carolina Ave.		101.1	-69.4	-16.8	14.9
129: Atlantic City, Raleigh Ave.		58.5	5.5	24.2	88.2
128: Ventnor City, Dorset Ave.		69.2	3.3	-31.0	41.5
127: Margate City, Benson Ave.		22.9	-14.3	-12.2	-3.6
126: Longport, 17th St.		78.6	27.2	-10.8	95.0

TABLE 15				
CAPE MAY COUNTY				
ANNUAL BEACH VOLUME CHANGES				
SPRING 2013 - SPRING 2014 & FALL 2013 - FALL 2014				
		Survey		
		46 - 48		47 - 49
PROFILE SITE		S2013-S2014		F2013 - F2014
LOCATION		(volume expressed as cubic yards per foot)		
225: Ocean City, Gardens Rd.		-38.73		-20.91
125: Ocean City, 6th St.		-127.85		-60.89
124: Ocean City, 20th St.		0.34		32.28
223: Ocean City, 34th St.		24.24		30.54
122: Ocean City, 56th St.		-2.98		5.19
222: Ocean City, 59th St.		25.65		8.08
221: Corson's Inlet Park, Ocean City		-2.17		-54.92
121: Strathmere, Williams Rd.		-59.66		-98.59
120: Sea Isle City, 1st St.		3.40		-10.42
119: Sea Isle City, 25th St.		21.59		-7.33
118: Sea Isle City, 57th St.		-0.34		1.52
117: Sea Isle City, 80th St.		-53.33		-26.43
216: Avalon, 9th St.		-61.64		-37.82
116: Avalon, 23rd St.		-88.97		-32.21
115: Avalon, 35th St.		-22.50		-6.48
114: Avalon, 70th St.		17.00		19.74
113: Stone Harbor, 90th St.		56.05		-22.26
212: Stone Harbor, 121st St.		-58.36		-7.63
112: Stone Harbor, South Pointe		** NO LONGER ACTIVE **		
111: North Wildwood, 15th Ave.		-34.61		-19.57
110: Wildwood, Cresse Ave.		24.74		28.89
109: Lower Township, Raleigh Ave.		23.21		34.22
208: Lower Township, U.S.C.G. Base		0.27		-0.30
108: Cape May, Beach Club		15.94		27.91
107: Cape May, Baltimore Ave.		-2.33		4.56
206: Cape May, Broadway Ave.		1.96		28.74
105: Cape May, Nature Conservancy		-57.64		-6.53
104: Cape May Point, Lake Dr.		-25.14		-6.27
103: Higbee Beach State Park		3.57		-3.52
102: North Cape May, Whittier		-5.03		-6.48
201: Villas, Pacific Ave.		-7.59		-6.89
100: Reeds Beach, Beach Ave.		-8.61		1.66

TABLE 16				
CAPE MAY COUNTY				
ANNUAL SHORELINE CHANGES				
SPRING 2013 - SPRING 2014 & FALL 2013 - FALL 2014				
		Survey		
		46 - 48		47 - 49
PROFILE SITE		S2013-S2014		F2013 - F2014
LOCATION		(shoreline change expressed in feet)		
225:	Ocean City, Gardens Rd.	-52.97		16.81
125:	Ocean City, 6th St.	-181.18		-29.19
124:	Ocean City, 20th St.	-21.50		59.63
223:	Ocean City, 34th St.	68.38		52.57
122:	Ocean City, 56th St.	44.61		-32.53
222:	Ocean City, 59th St.	70.03		3.59
221:	Corson's Inlet Park, Ocean City	1.88		-159.03
121:	Strathmere, Williams Rd.	-174.53		-195.90
120:	Sea Isle City, 1st St.	11.33		-29.91
119:	Sea Isle City, 25th St.	7.40		113.56
118:	Sea Isle City, 57th St.	-56.07		62.17
117:	Sea Isle City, 80th St.	-141.13		-62.25
216:	Avalon, 9th St.	-65.33		-18.90
116:	Avalon, 23rd St.	-144.21		-15.64
115:	Avalon, 35th St.	83.24		-41.59
114:	Avalon, 70th St.	32.81		67.21
113:	Stone Harbor, 90th St.	80.59		24.64
212:	Stone Harbor, 121st St.	-71.17		14.18
112:	Stone Harbor, South Pointe	** NO LONGER ACTIVE **		
111:	North Wildwood, 15th Ave.	-2.82		32.36
110:	Wildwood, Cresse Ave.	44.12		58.19
109:	Lower Township, Raleigh Ave.	-0.43		38.26
208:	Lower Township, U.S.C.G. Base	40.69		-7.97
108:	Cape May, Beach Club	47.07		49.22
107:	Cape May, Baltimore Ave.	22.10		1.04
206:	Cape May, Broadway Ave.	17.66		63.99
105:	Cape May, Nature Conservancy	-142.37		-7.45
104:	Cape May Point, Lake Dr.	-28.52		-15.31
103:	Higbee Beach State Park	6.14		6.99
102:	North Cape May, Whittier	-13.43		-12.07
201:	Villas, Pacific Ave.	-5.79		-7.05
100:	Reeds Beach, Beach Ave.	-1.04		-0.85

TABLE 17						
CAPE MAY COUNTY						
SEASONAL BEACH VOLUME CHANGES						
	Survey	46-47	47-48	48-49	46-49	
PROFILE SITE		S13-F13	F13-S14	S14-F14	S13-F14	
LOCATION	(volume expressed as cubic yards per foot of beachfront)					
225: Ocean City, Gardens Rd.		-13.79	-25.57	5.53	-34.23	
125: Ocean City, 6th St.		-73.68	-57.77	-1.60	-133.30	
124: Ocean City, 20th St.		0.20	-0.32	33.11	34.06	
223: Ocean City, 34th St.		5.17	19.96	10.57	34.31	
122: Ocean City, 56th St.		-5.20	2.18	2.65	-0.24	
222: Ocean City, 59th St.		15.23	13.27	-3.45	22.87	
221: Corson's Inlet Park, Ocean City		0.66	-17.31	-30.32	-54.34	
121: Strathmere, Williams Rd.		-43.60	-19.74	-78.74	-140.51	
120: Sea Isle City, 1st St.		21.10	-17.80	7.43	10.70	
119: Sea Isle City, 25th St.		9.50	12.06	-19.48	2.12	
118: Sea Isle City, 57th St.		7.47	-8.91	10.26	10.09	
117: Sea Isle City, 80th St.		-24.71	-28.40	2.16	-51.34	
216: Avalon, 9th St.		-42.84	-18.93	-19.01	-80.62	
116: Avalon, 23rd St.		-52.68	-36.72	4.41	-83.98	
115: Avalon, 35th St.		2.94	-26.00	16.86	-4.41	
114: Avalon, 70th St.		10.35	7.36	11.50	28.14	
113: Stone Harbor, 90th St.		75.85	-19.91	-2.64	54.46	
212: Stone Harbor, 121st St.		-36.49	-21.84	13.35	-43.96	
112: Stone Harbor, South Pointe		** NO LONGER ACTIVE **				
111: North Wildwood, 15th Ave.		-27.26	-7.58	-11.41	-46.51	
110: Wildwood, Cresse Ave.		19.88	4.99	23.85	50.72	
109: Lower Township, Raleigh Ave.		10.91	12.68	20.86	45.39	
208: Lower Township, U.S.C.G. Base		3.32	-3.31	3.01	3.38	
108: Cape May, Beach Club		-9.65	25.29	2.45	18.33	
107: Cape May, Baltimore Ave.		-11.24	8.89	-4.47	-6.86	
206: Cape May, Broadway Ave.		-23.89	25.92	2.22	3.77	
105: Cape May, Nature Conservancy		-65.44	7.91	-14.48	-72.24	
104: Cape May Point, Lake Dr.		-22.93	-2.47	-3.83	-28.85	
103: Higbee Beach State Park		3.62	0.51	-4.06	-0.11	
102: North Cape May, Whittier Ave.		4.92	-10.78	4.22	-0.72	
201: Villas, Pacific Ave.		-3.49	-4.10	-2.81	-10.39	
100: Reeds Beach, Beach Ave.		-9.13	0.55	1.12	-7.49	

TABLE 18
CAPE MAY COUNTY
SEASONAL SHORELINE CHANGES

	Survey	46-47	47-48	48-49	46-49
PROFILE SITE		S13-F13	F13-S14	S14-F14	S13-F14
LOCATION		(shoreline change expressed in feet)			
225: Ocean City, Gardens Rd.		-23.53	-29.45	46.26	-6.71
125: Ocean City, 6th St.		-133.49	-47.68	18.49	-162.69
124: Ocean City, 20th St.		-81.19	59.70	-0.06	-21.56
223: Ocean City, 34th St.		30.71	37.67	14.89	83.28
122: Ocean City, 56th St.		79.28	-34.67	2.15	46.76
222: Ocean City, 59th St.		41.68	28.35	-24.77	45.27
221: Corson's Inlet Park, Ocean City		36.87	-34.99	-124.04	-122.15
121: Strathmere, Williams Rd.		-46.86	-127.66	-68.24	-242.76
120: Sea Isle City, 1st St.		70.48	-59.15	29.24	40.56
119: Sea Isle City, 25th St..		-110.30	117.70	-4.14	3.26
118: Sea Isle City, 57th St..		-97.33	41.26	20.91	-35.16
117: Sea Isle City, 80th St..		-48.01	-93.12	30.88	-110.25
216: Avalon, 9th St.		-44.12	-21.21	2.31	-63.02
116: Avalon, 23rd St.		-76.75	-67.46	51.82	-92.38
115: Avalon, 35th St.		75.70	7.54	-49.13	34.11
114: Avalon, 70th St.		-10.27	43.08	24.13	56.94
113: Stone Harbor, 90th St.		81.61	-1.03	25.66	106.25
212: Stone Harbor, 121st St.		-58.48	-12.69	26.88	-44.29
112: Stone Harbor, South Pointe			** NO LONGER ACTIVE **		
111: North Wildwood, 15th Ave.		-19.09	16.28	16.09	13.27
110: Wildwood, Cresse Ave.		29.95	14.17	44.02	88.14
109: Lower Township, Raleigh Ave.		-9.84	9.41	28.85	28.42
208: Lower Township, U.S.C.G. Base		73.65	-32.96	24.99	65.68
108: Cape May, Beach Club		10.99	36.08	13.14	60.21
107: Cape May, Baltimore Ave.		13.50	8.59	-7.55	14.55
206: Cape May, Broadway Ave.		-27.26	44.92	19.07	36.73
105: Cape May, Nature Conservancy		-166.83	24.46	-31.91	-174.28
104: Cape May Point, Lake Dr.		-21.47	-7.05	-8.27	-36.79
103: Higbee Beach State Park		-3.80	9.94	-2.95	3.18
102: North Cape May, Whittier Ave.		5.82	-19.25	7.18	-6.25
201: Villas, Pacific Ave.		-6.70	0.91	-7.96	-13.75
100: Reeds Beach, Beach Ave.		-2.17	1.13	-1.98	-3.03