



New Jersey Beach Profile Network

Cape May County

Great Egg Harbor Inlet
to Stow Creek

NJBPN Profile #'s
225 - 100

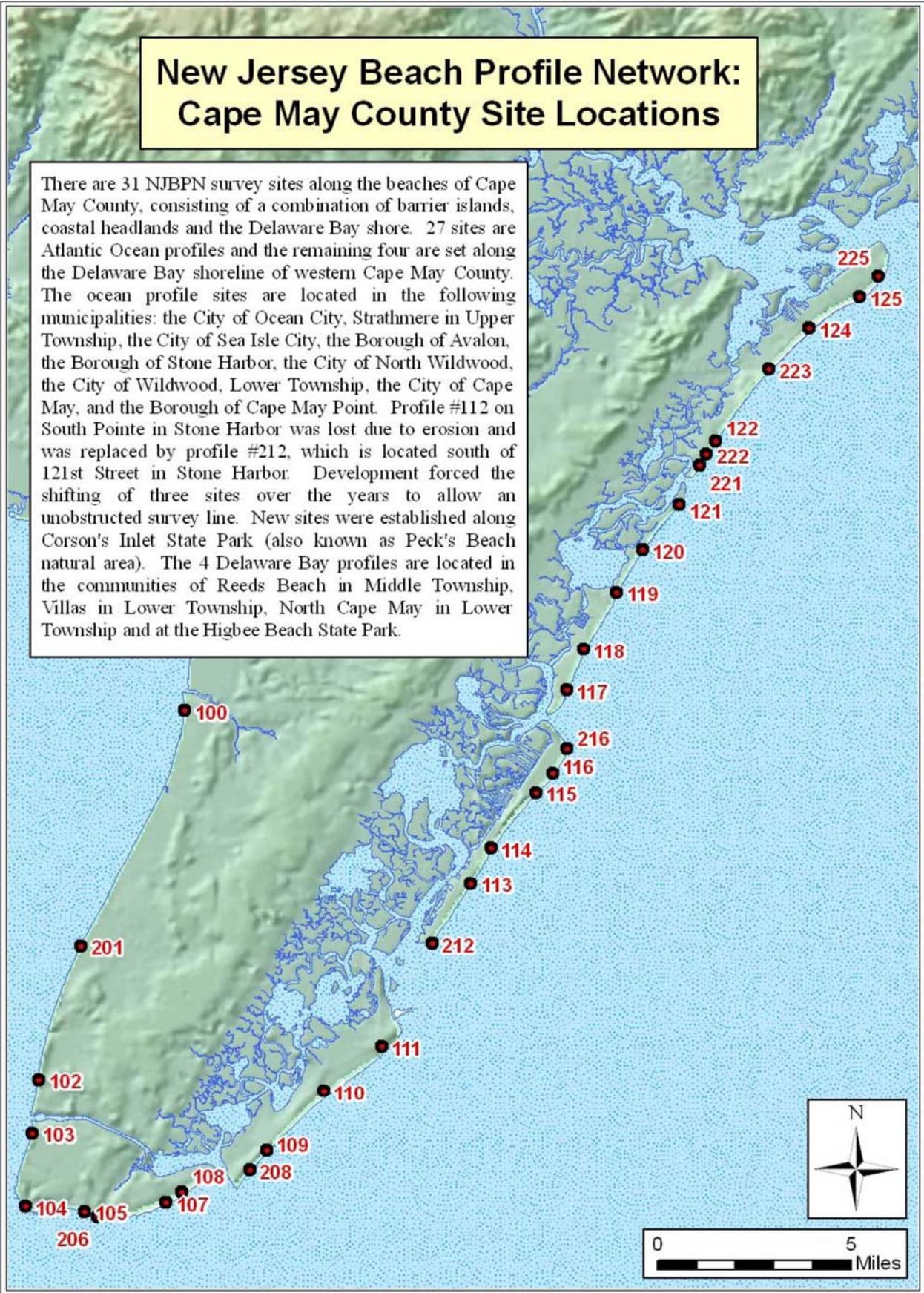


Figure 78. Map of Cape May County showing the locations of the 31 profile sites in the county.

Cape May County Storm Recovery:

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.

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

Cape May City;

The approach direction of the ocean waves, deflected somewhat by Cold Springs Inlet jetties and the south, southwest orientation of the shoreline acted to pile sand from the beachface landward onto the backshore beach into the dune vegetation. The Cape May beaches all gained berm sand at the expense of beachface retreat. Sand moved south around the terminal rock groin in the City and deposited within the Nature Conservancy beach zone adding over 150 cubic yards of sand per foot of shoreline. This storm-induced deposit was reduced by half between April and October 2013 as sand moved south toward Cape May Point.

The Wildwoods;

Sand accumulated on beaches from Cresse Avenue at the boundary between Wildwood and Wildwood Crest south to the Cold Springs Inlet jetty. The berm was raised 2-3 feet in elevation during Hurricane Sandy while the beachface retreated somewhat. The wide beach accepted deposition as waves broke offshore and rolled landward losing energy as they went and depositing sand along the way. The North Wildwood shoreline remained constant south of 5th Avenue. Work proceeds to acquire additional sand supplies from proposed dredging in Beach Creek this fall as a means of disposal of sand dredging materials.

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 road leading to the Townsend's Inlet was badly damaged by waves crashing over the rock revetment and took several months to restore. 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.

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 in the fall of 2014 under ACOE responsibility for Ludlam Island. This project will extend from Seaspray Avenue south to 93rd Street in Stone Harbor and will be accomplished using sand from offshore borrow sites previously defined.

Ocean City;

The Ludlam island project also includes 2.5 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.

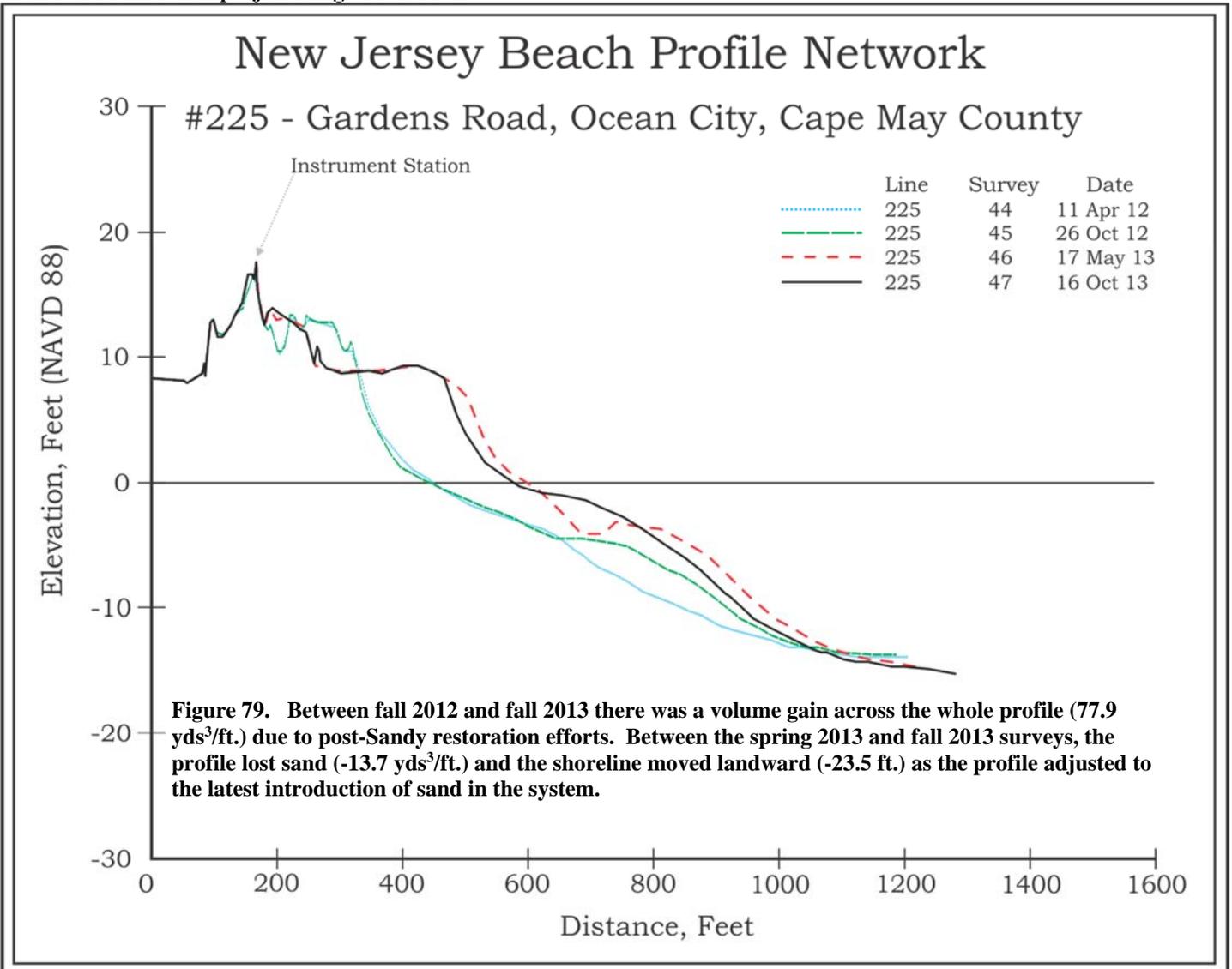
The Corson's Inlet State Park shoreline south of development in Ocean City suffered dune loss of considerable magnitude during Hurricane Sandy. Since sand moves south naturally under wave dominance from the northeast, this shoreline should benefit from any sand losses in Ocean City's part of the new 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.

All in all, Cape May County dodged the Hurricane Sandy "bullet" by about 60 miles in landfalling position by that storm. The beaches are largely federally maintained and had been maintained recently, so were largely ready to handle the impact of the recorded storm surge and wave run-up observed. Dune elevations ranged between 12 and 16 feet with a few above 16 feet. The savings were gained because of a wider than average dry beach where the wave could break and lose energy across from 150 to 600 feet before encountering the dunes.

NJBPN 225 - Gardens Road, Ocean City



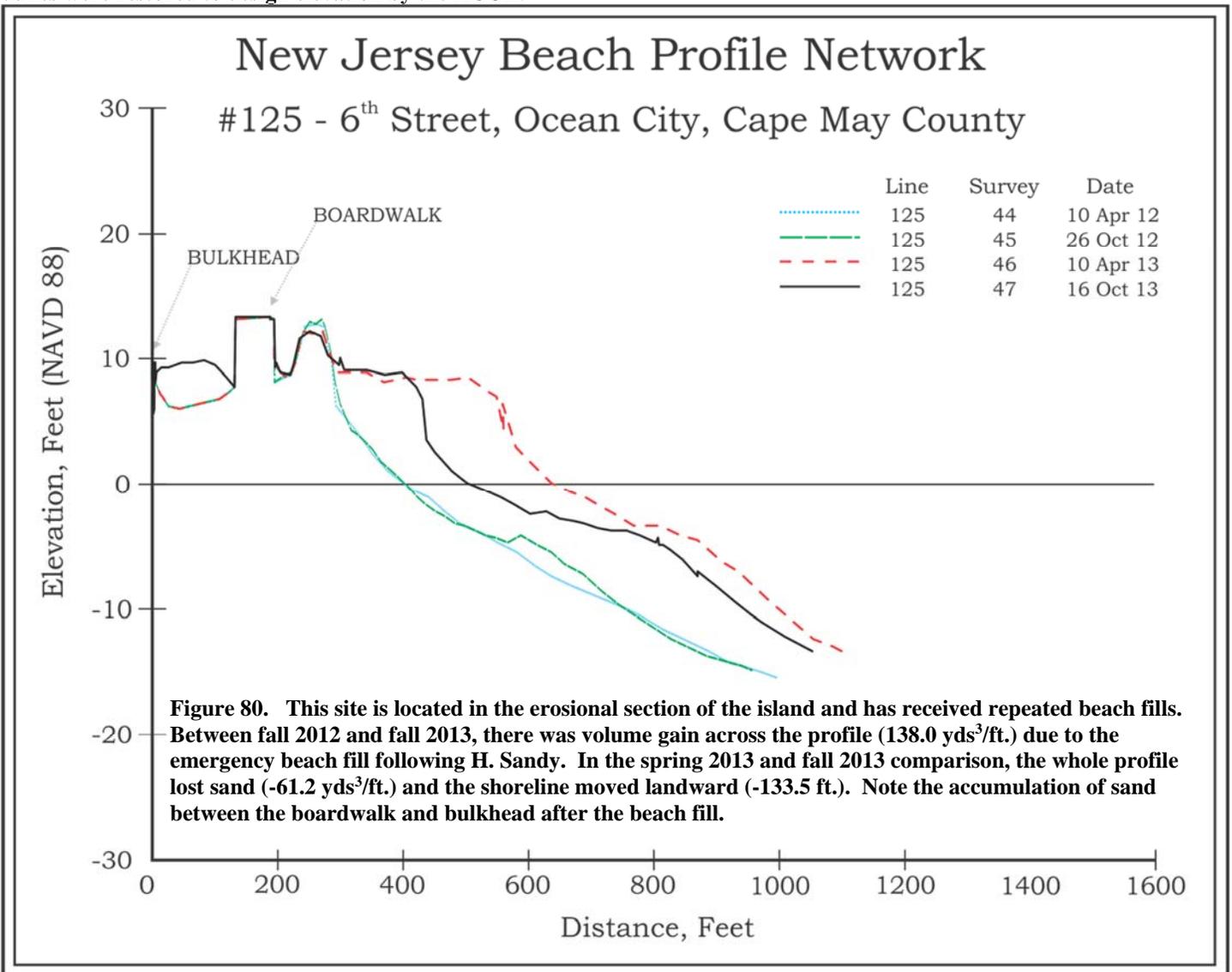
The Gardens Road site is located near Great Egg Inlet which influences sediment deposition and trends in shoreline change. The October 26, 2012 photo (left) shows the pre-Sandy condition of the dunes which were removed by the storm. On the right (taken October 16, 2013), the Federal emergency fill (completed prior to the spring 2013 survey) restored the beach and foredune elevations to project design conditions.



NJBPN 125 - 6th Street, Ocean City



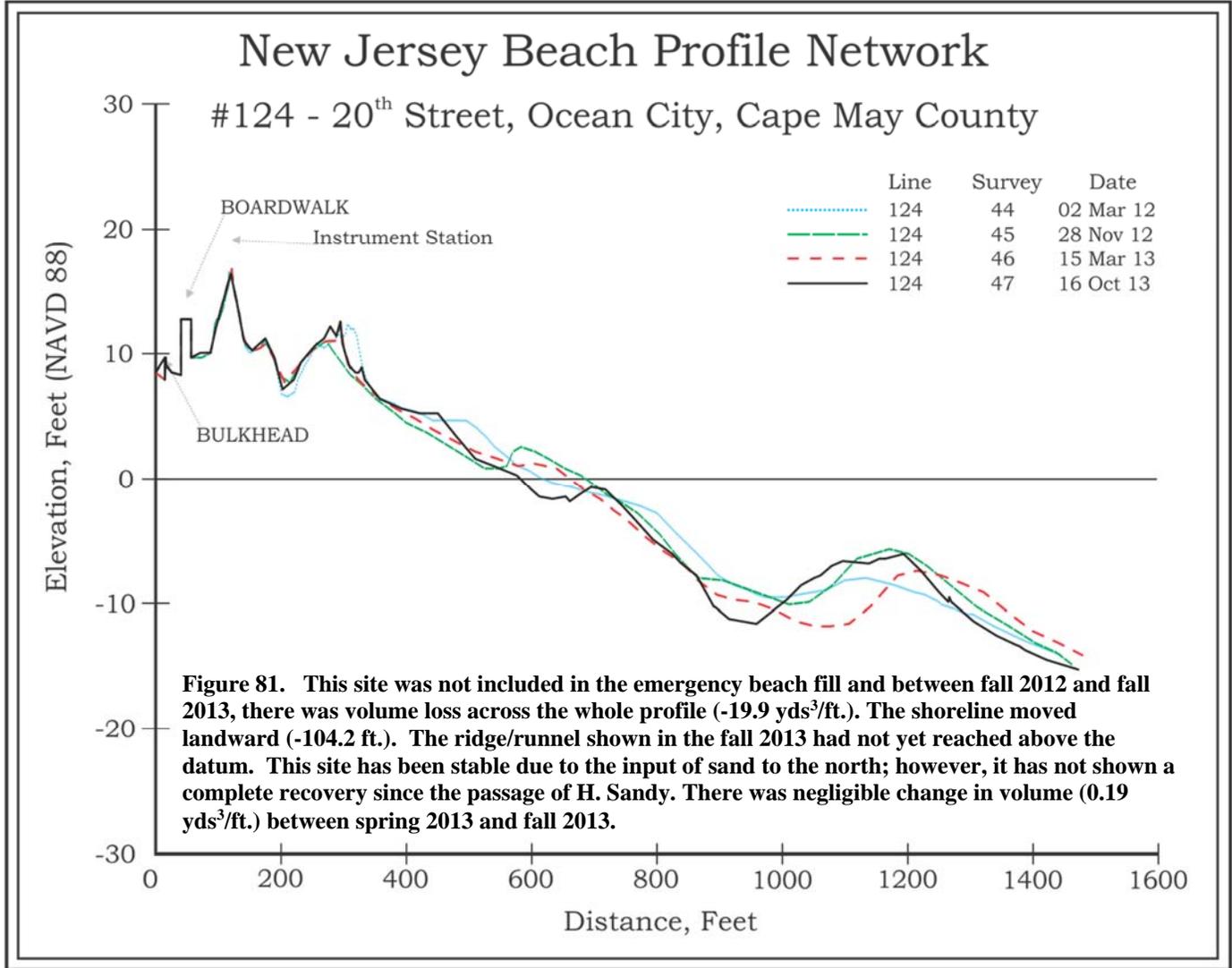
The photo taken October 26, 2012 (left) shows the low dune and narrow beach prior to H. Sandy and these conditions allowed storm waves to attack the dunes and deposit sand landward of the boardwalk. By October 16, 2013 (right), the berm and dunes were restored to design elevation by the ACOE.



NJBPN 124 - 20th Street, Ocean City



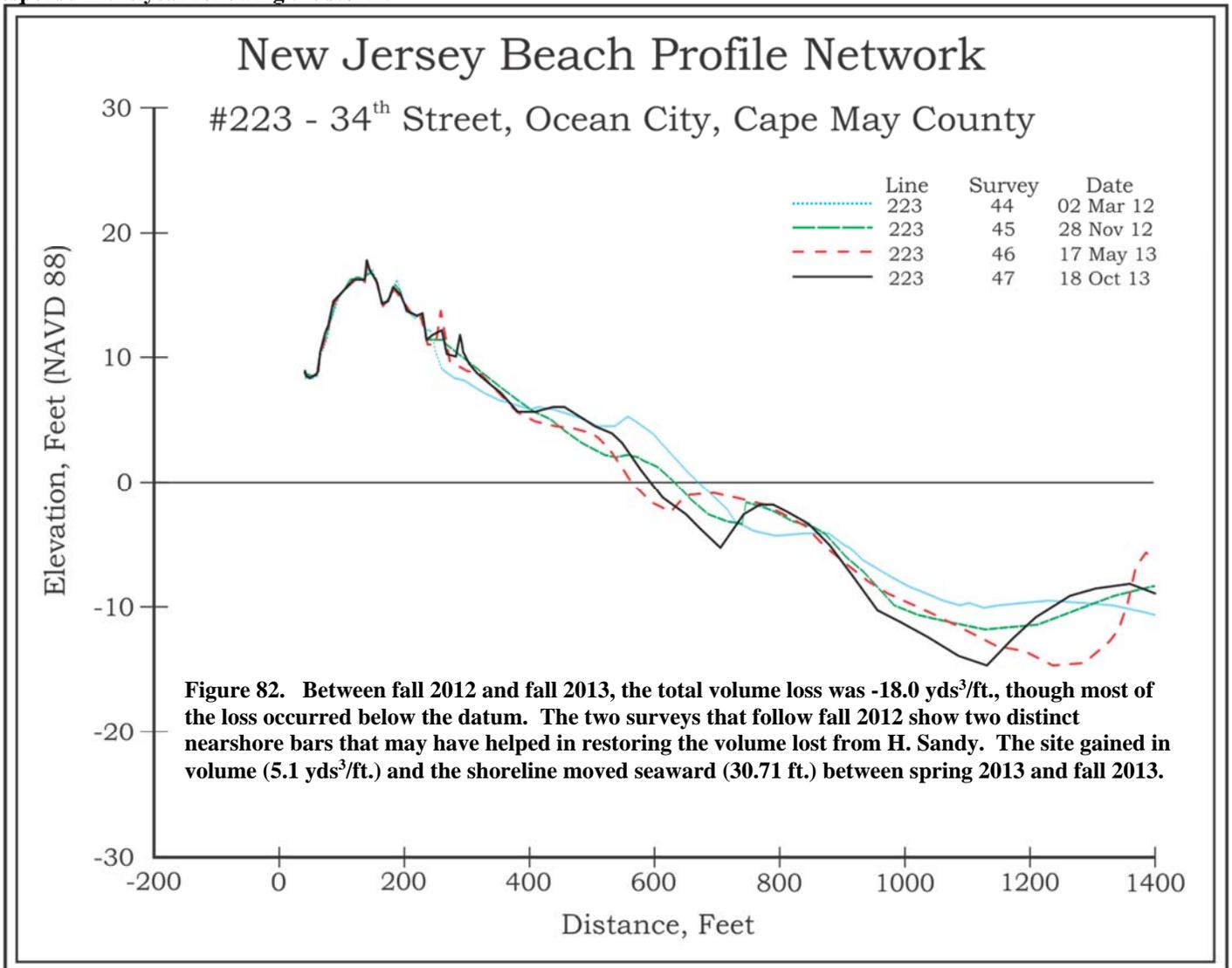
The post-Sandy beach on November 28, 2012 (left) shows a low elevation berm and scarped dunes. (A ridge/runnel formed from the cross shore movement of sand following the storm and is displayed in the cross section below.) The October 16, 2013 photo (right) shows the gentle slope of the beach to the dune. The berm elevation naturally increased from its fall 2012 elevation.



NJBPN 223 - 34th Street, Ocean City



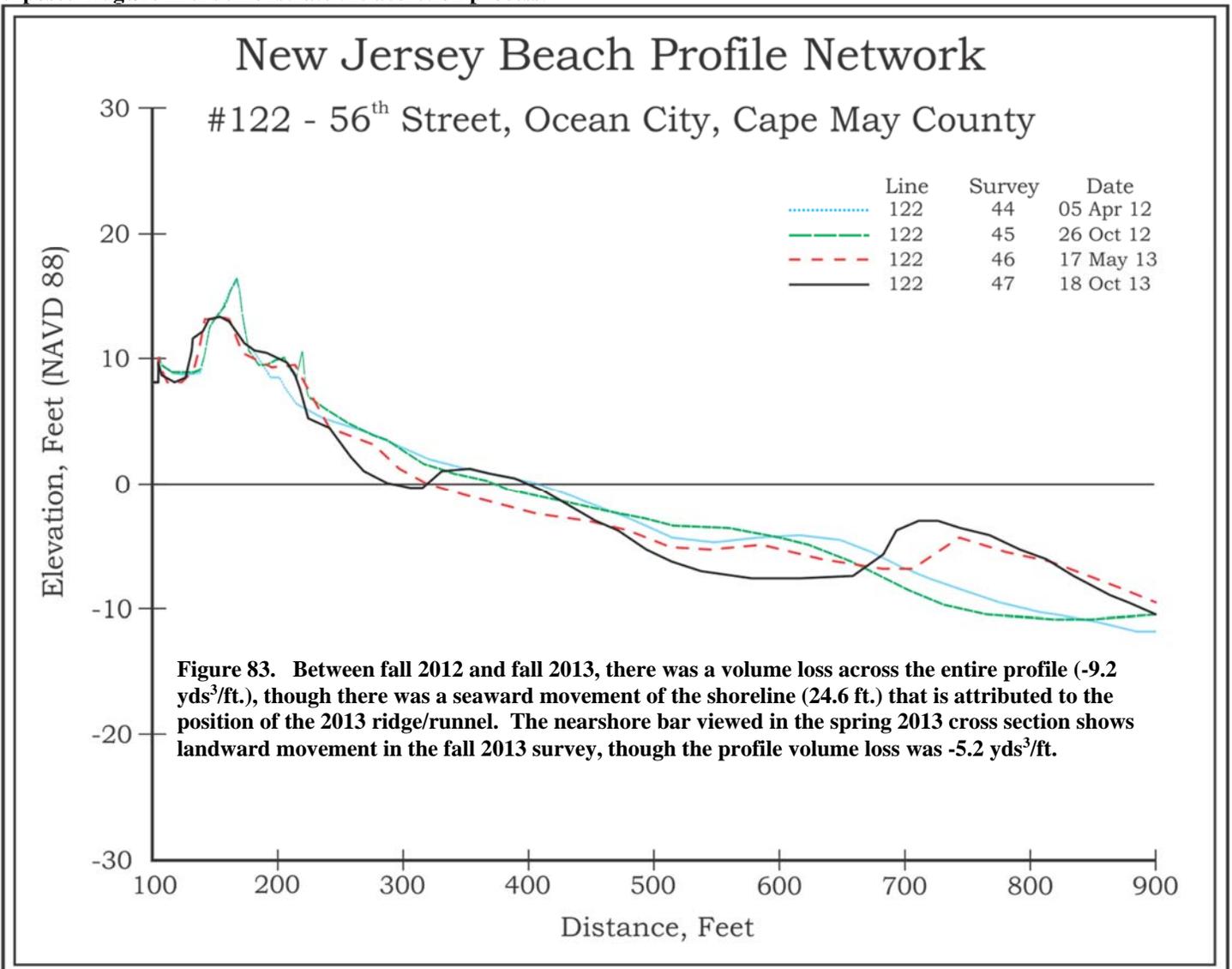
The piles of sand on the backshore shown in the left photo (November 28, 2012) were from the street deposits that were scraped and brought back to the beach in the H. Sandy cleanup process. In the October 18, 2013 photo (right), the sand piles (which were spread after the 2012 photo) helped support incipient dune growth. The dune vegetation also had a positive response in the year following the storm.



NJBPN 122 - 56th Street, Ocean City



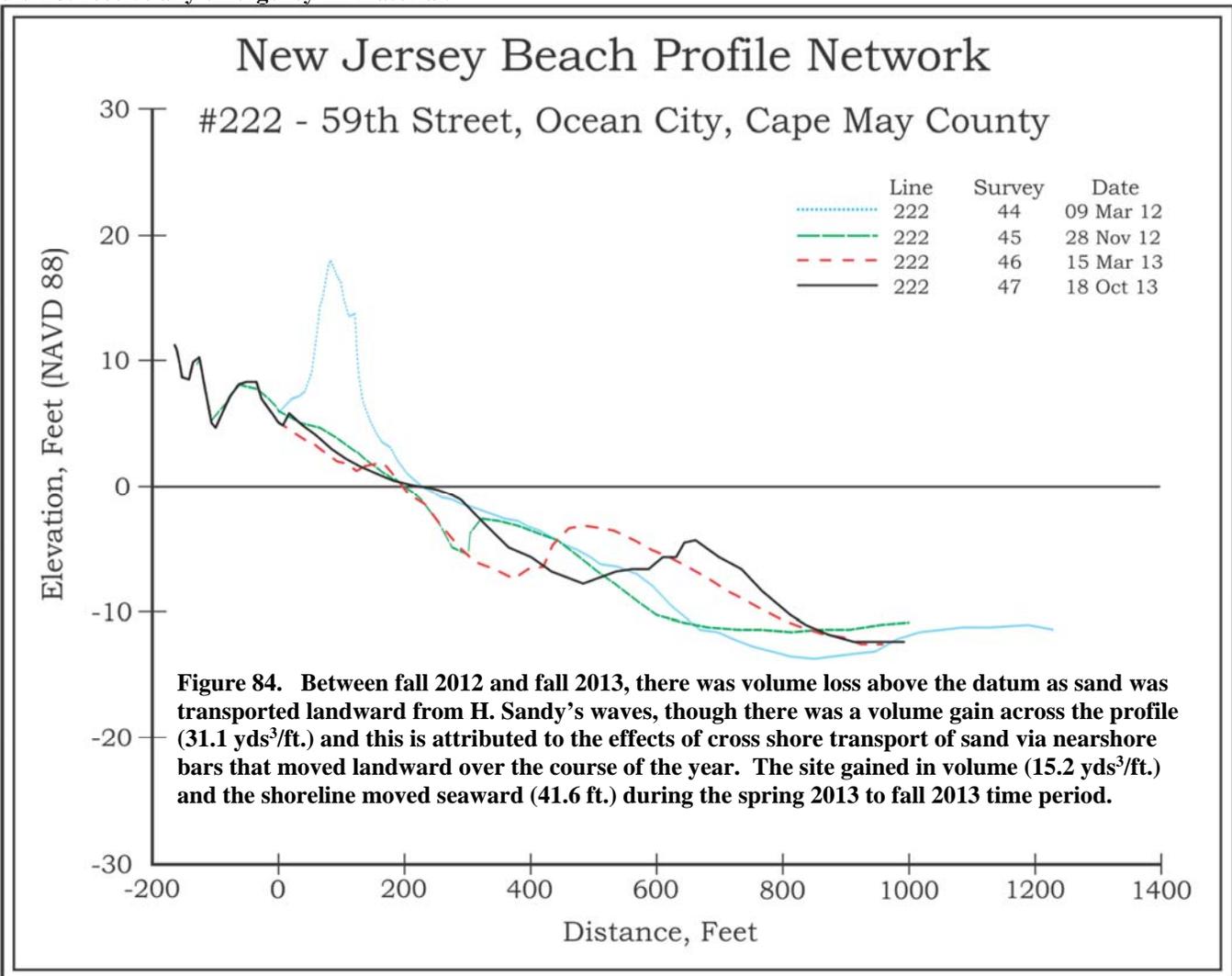
This site marks the boundary between the state and federal beach maintenance activities and was not included in an emergency fill following H. Sandy. The left photograph was taken October 26, 2012 and shows the narrow, nearly 15-ft. (NAVD88) high dune and manmade mounds on a narrow beach prior to H. Sandy. On the on right (October 18, 2013), an exposed ridge/runnel demonstrate the accretion process.



NJBPN 222 - 59th Street, Ocean City



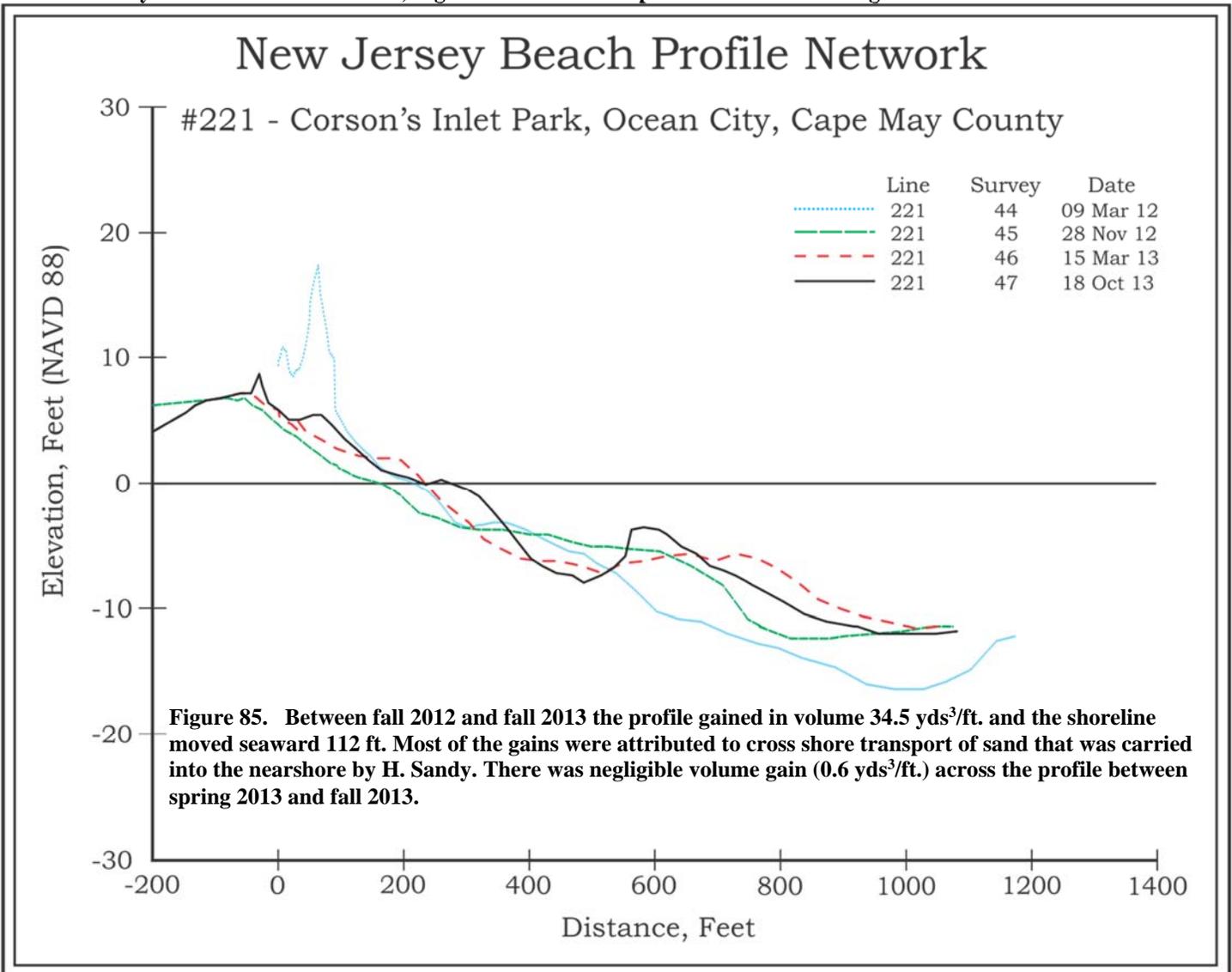
The 59th Street site is located at the southern end of the developed section of Ocean City. The left picture (November 28, 2012) shows what remained of the dunes following H. Sandy and some of the mounds of sand that were placed on the backshore in an effort to restore the beach. The right photo (taken October 18, 2013) shows the gently-sloped berm at low tide. This site did not receive any emergency fill material.



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



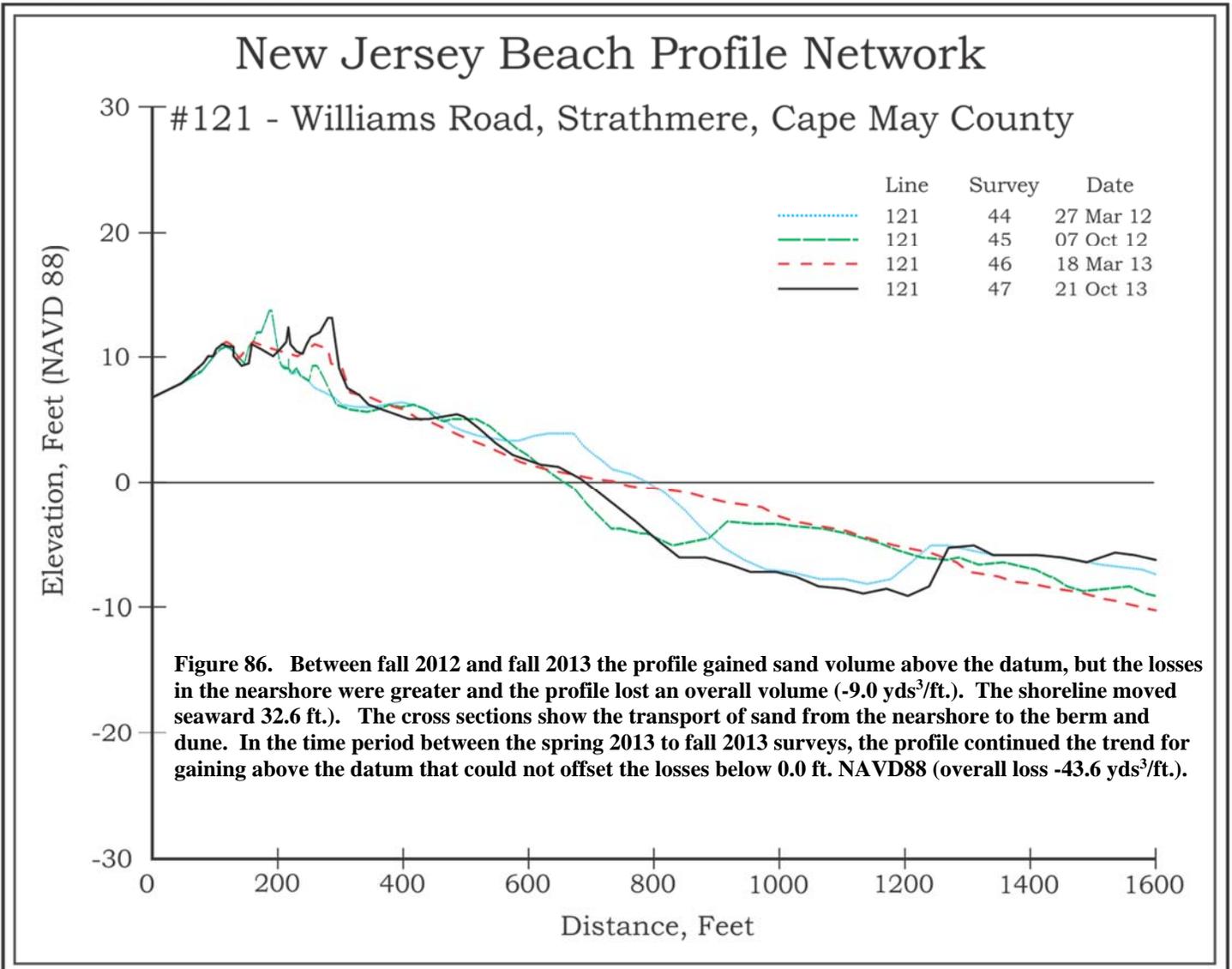
The November 28, 2012 picture on the left shows the post-Sandy profile. The foredune was removed by storm waves and sand was transported into the nearshore. The right photo (taken October 18, 2013) shows the berm that increased in elevation between surveys. Also shown is the older, vegetated dune that helped block the storm surge.



NJBPN 121 - Williams Road, Strathmere



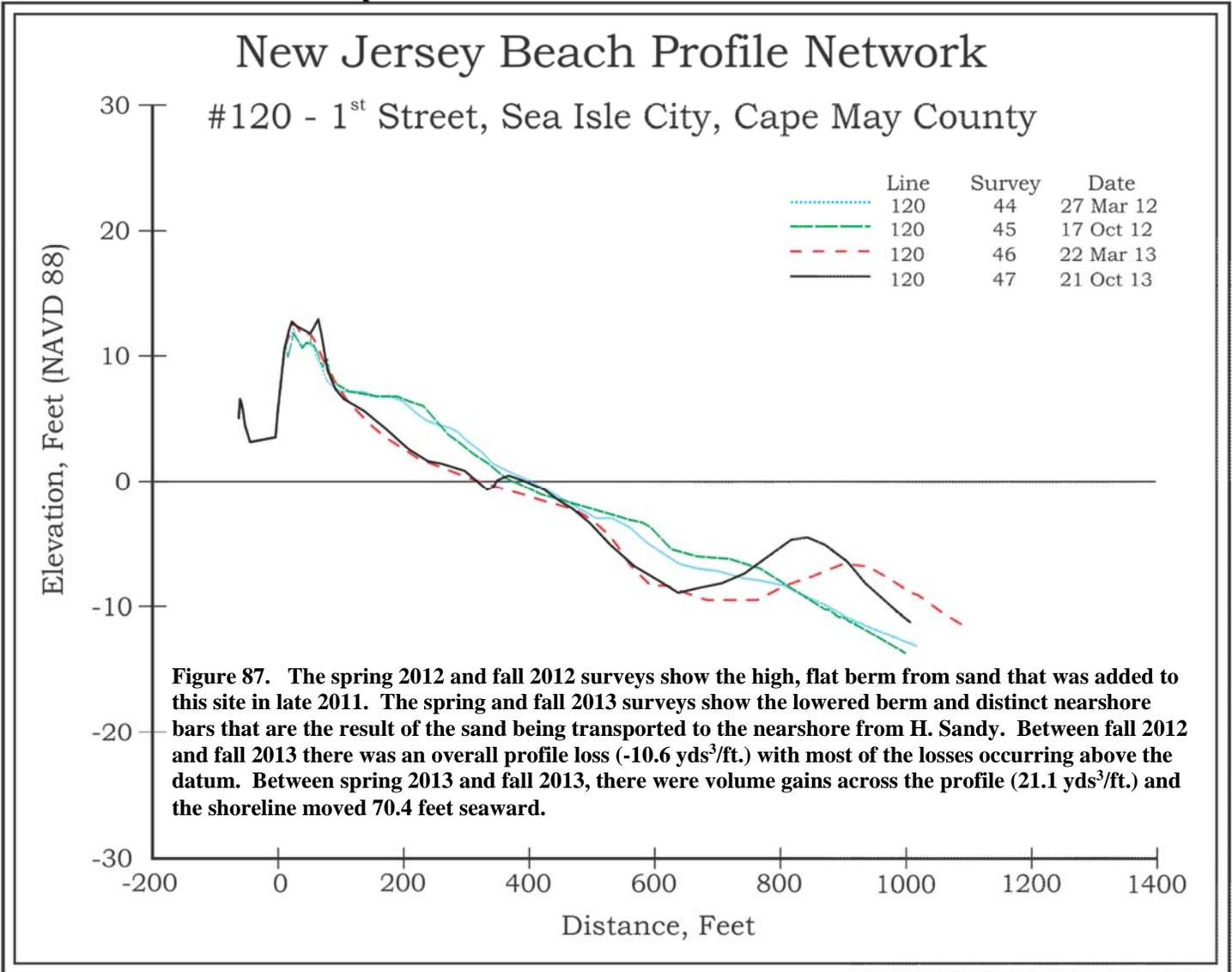
The Williams Road site is strongly influenced by the ebb-tidal delta at Corson’s Inlet. The left photo (taken October 17, 2012) shows the wide dune zone that separates the homes from the ocean. H. Sandy flattened the beach and removed the primary dune, but no flooding occurred into landward properties. On the right (taken October 21, 2013), vegetation was 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.



NJBPN 120 - 1st Street, Sea Isle City



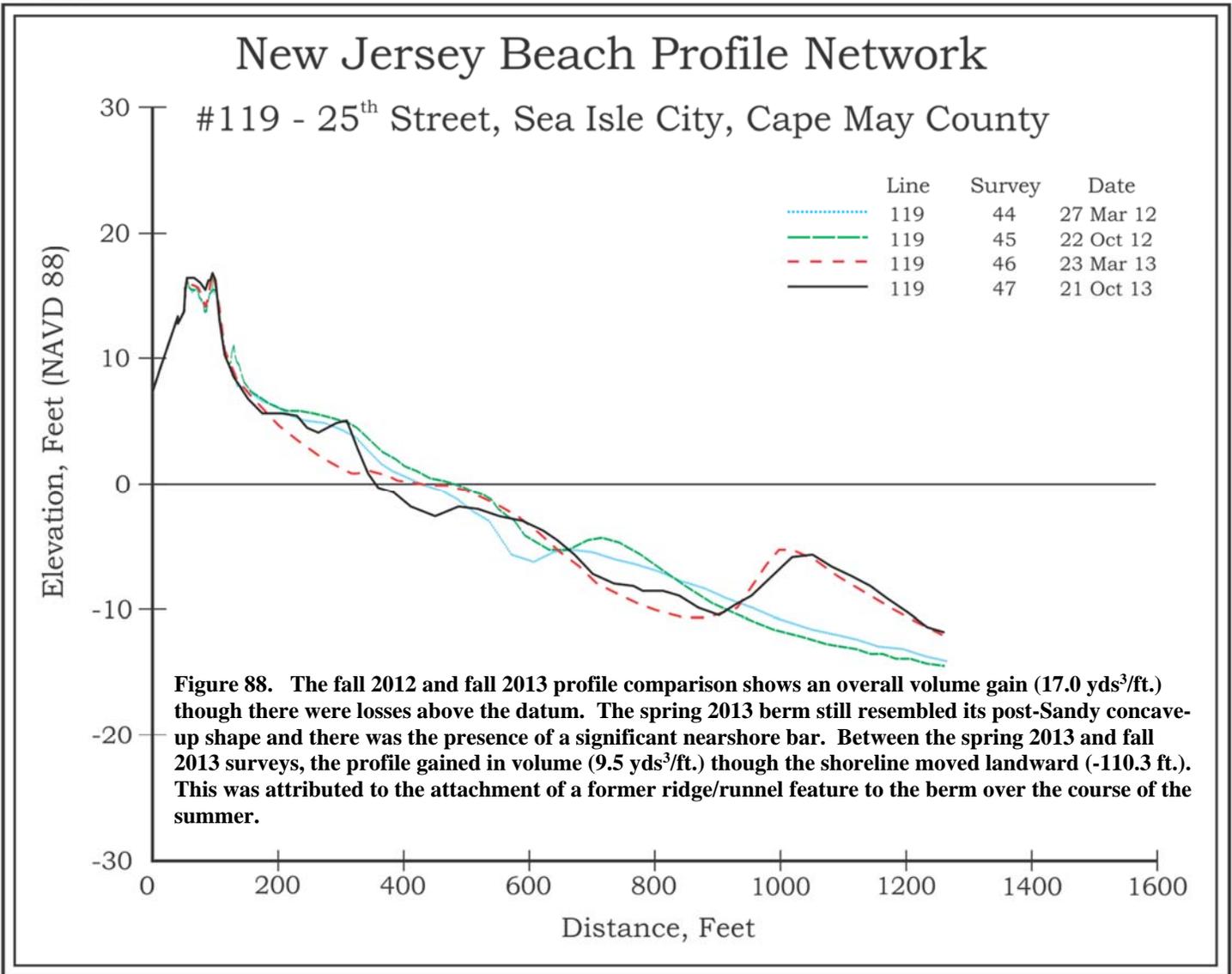
The dune here at the 1st Street location consists of a geotextile core covered by sand. The pre- H. Sandy photo (left, taken October 17, 2012) shows a berm higher in elevation than the photo on the right (taken October 21, 2013). The dune remained intact and most of the sand was transported either southward or into the nearshore.



NJBPN 119 - 25th Street, Sea Isle City



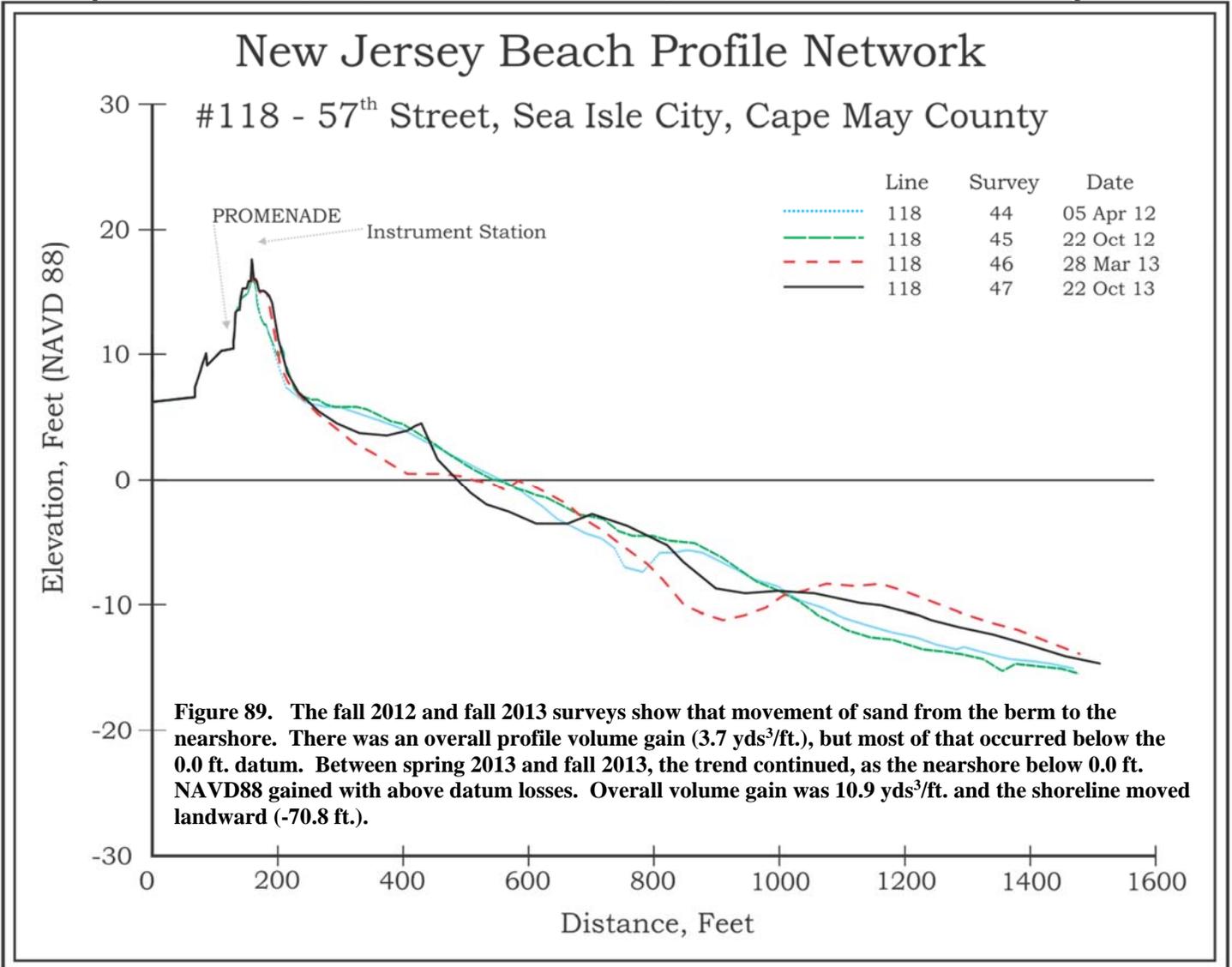
The 25th Street site is located on the southern end of the municipal/township beach nourishment project and the higher berm elevation is shown in the left photo (taken October 22, 2012). On the right (photo taken October 21, 2013), there was limited damage to the dunes from H. Sandy though the profile was considerably lowered and sand transported to the nearshore or downdrift.



NJBPN 118 - 57th Street, Sea Isle City



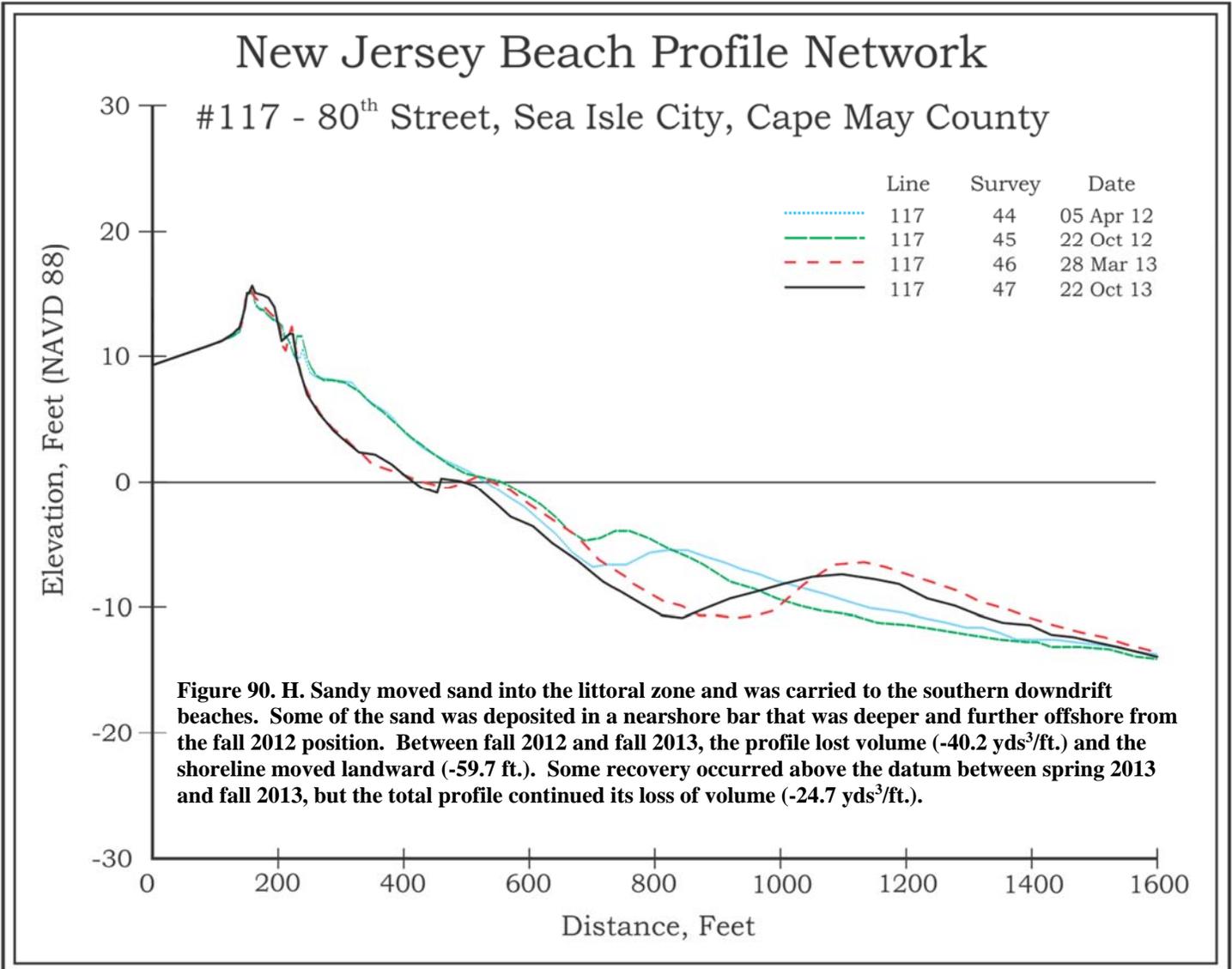
The left picture was taken October 22, 2012 and shows the beach and dune system that was included in the 2011 restoration. On the right (taken October 22, 2013), the berm is lower in elevation, but sand accumulated on the seaward edge of the dunes.



NJBPN 117 - 80th Street, Sea Isle City



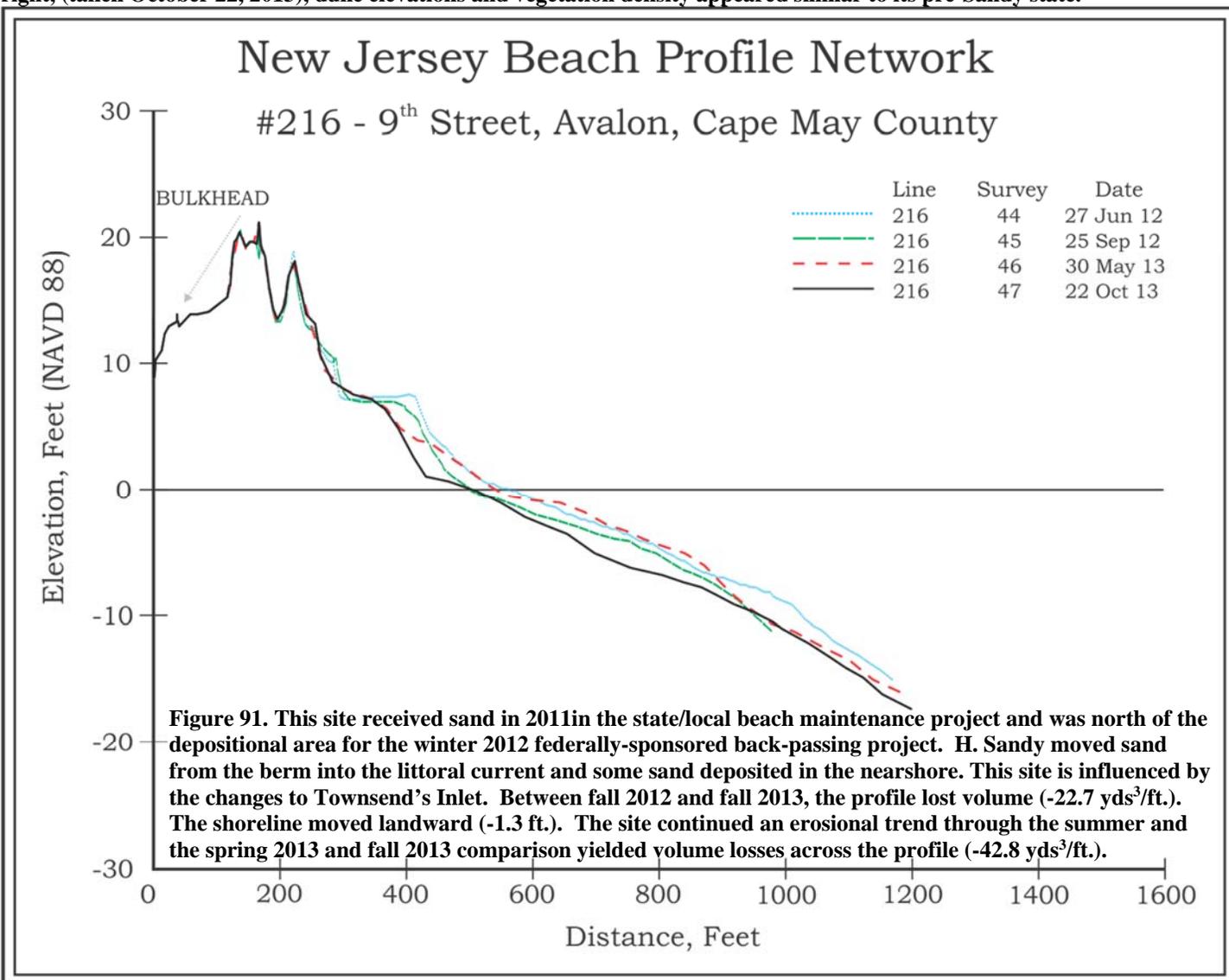
The 80th Street location was included in state/local beach fill and contained a newly created dune via sand fencing (left photo taken October 22, 2012). Following H. Sandy, sand that washed inland was hauled back to the beach and placed at the toe of the eroded dune. The photo on the right (October 22, 2013) shows a low-elevation berm and an exposed low-tide ridge/runnel as the nearshore bar has moved landward.



NJBPN 216 - 9th Street, Avalon



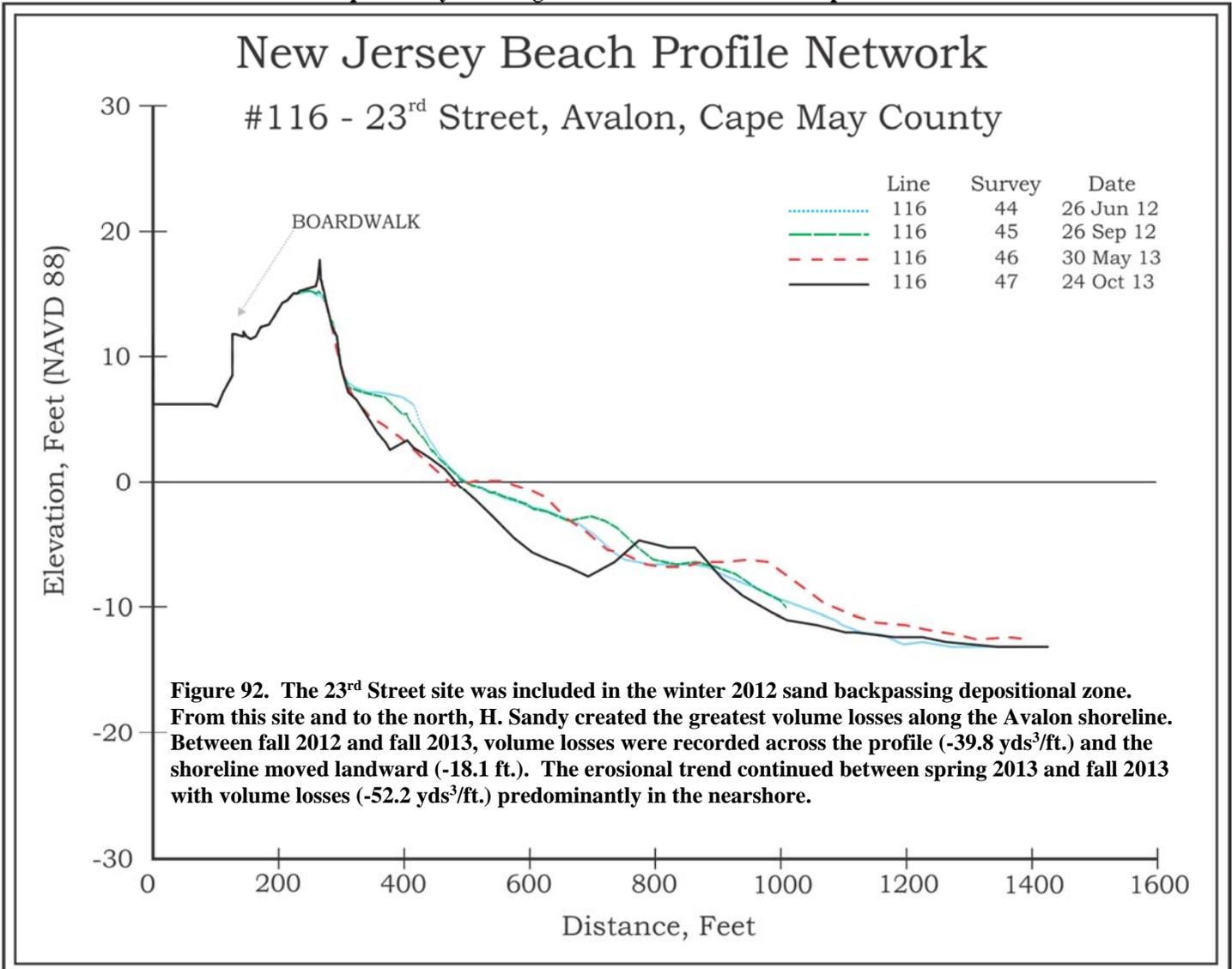
The 9th Street site is located near the Townsend's Inlet south jetty. The September 25, 2012 (left) photo shows the wide berm and seasonal plant growth. H Sandy eroded some of the dune and moved the sand into the littoral zone and nearshore. On the right, (taken October 22, 2013), dune elevations and vegetation density appeared similar to its pre-Sandy state.



NJBPN 116 - 23rd Street, Avalon



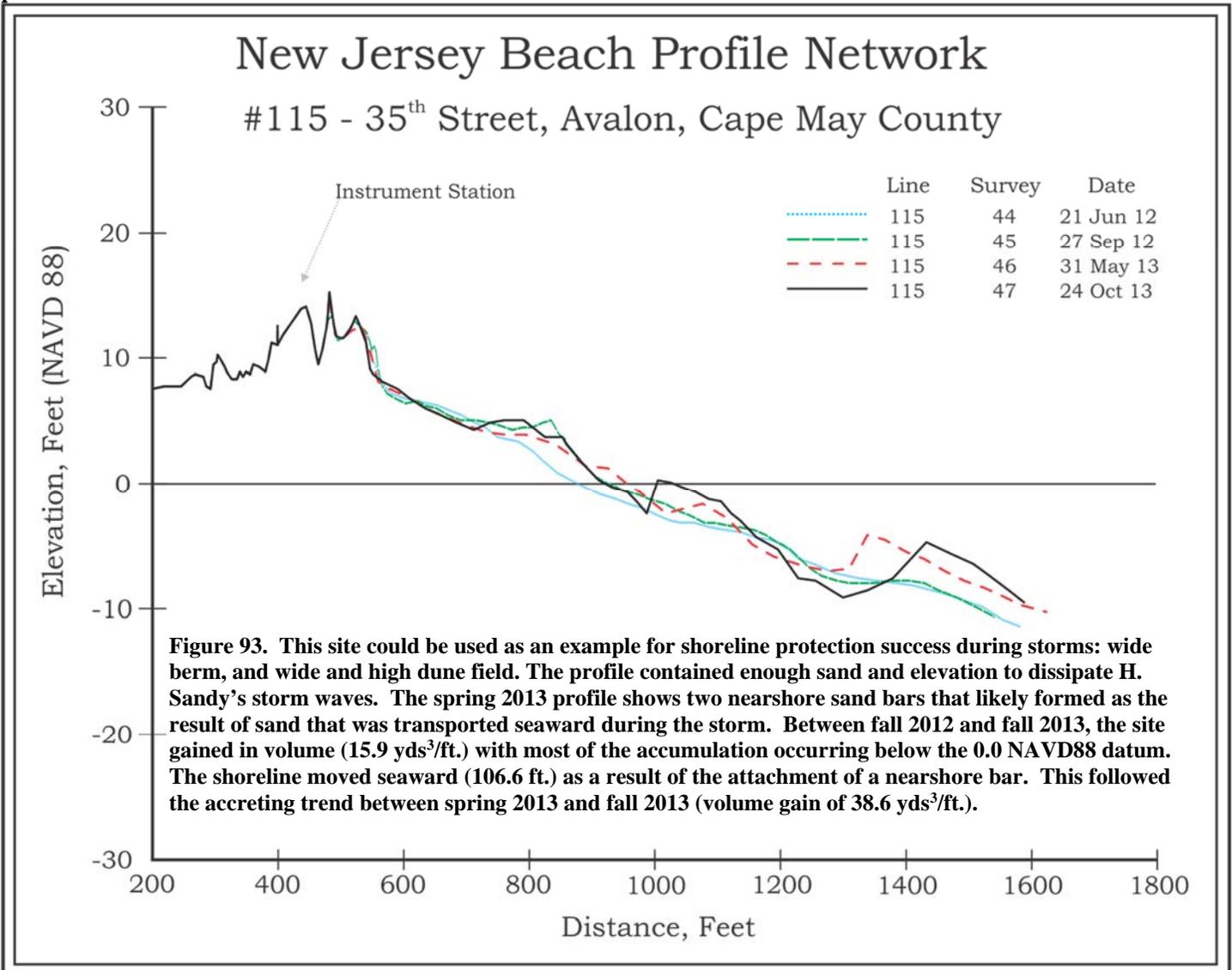
The left picture was taken September 26, 2012 and shows the beach late in the summer with a generous post-sand fill berm present and a healthy season's growth in new dune plants. The right photo (taken October 24, 2013) shows a lower elevation beach and the seaward limits of the pre-Sandy dune vegetation after the erosion took place.



NJBPN 115 - 35th Street, Avalon



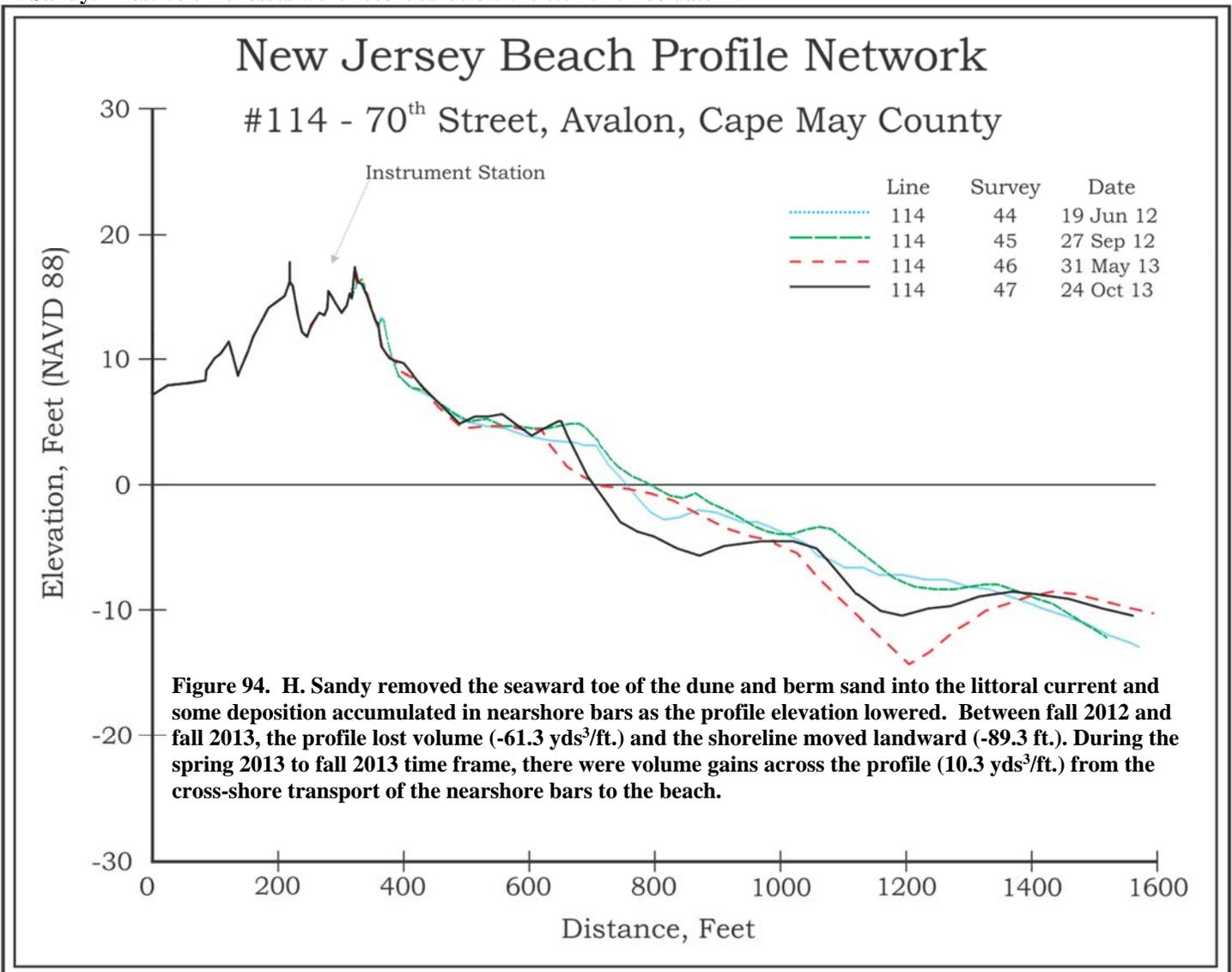
This site lies south of the beach nourishment areas and is located in an accreting area of the municipality. The berm was used as a borrow area for the February-March 2012 backpassing pilot project. The left photo (taken September 27, 2012) shows the wide berm and dunes. H. Sandy’s waves eroded the seaward toe of the dune and there was some sand deposition in the foredune area. The berm in the right photo (taken on October 24, 2013) is at about the same elevation as the fall 2012 position.



NJBPN 114 - 70th Street, Avalon



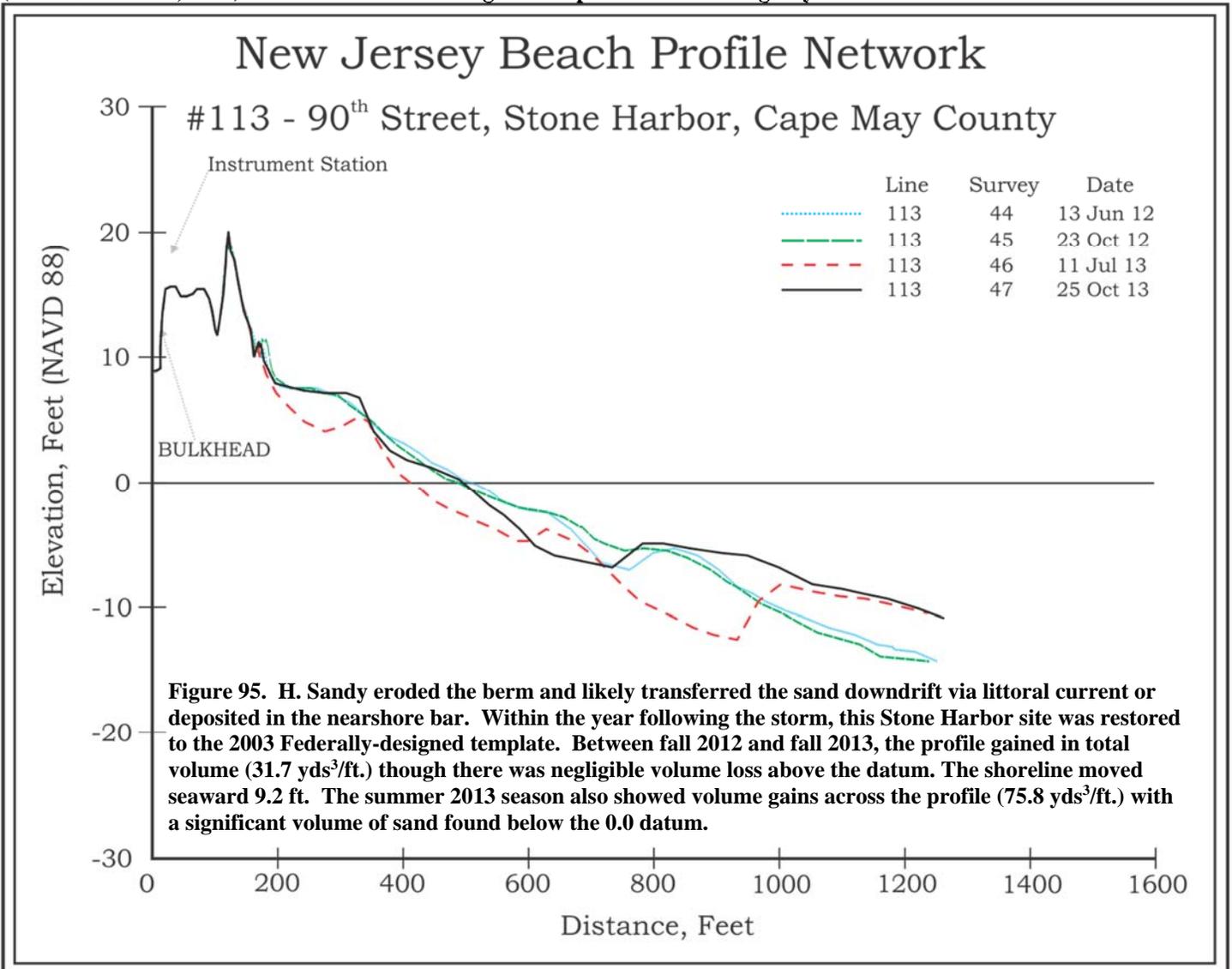
At the 70th Street location, the September 27, 2012 (left) and October 24, 2013 (right) berm and dune photos look very similar for consecutive fall surveys though there were losses at the seaward edge of the berm and at the toe of the dunes as a result of H. Sandy. Most volume losses were recorded below the 0.0 NAVD88 datum.



NJBPN 113 - 90th Street, Stone Harbor



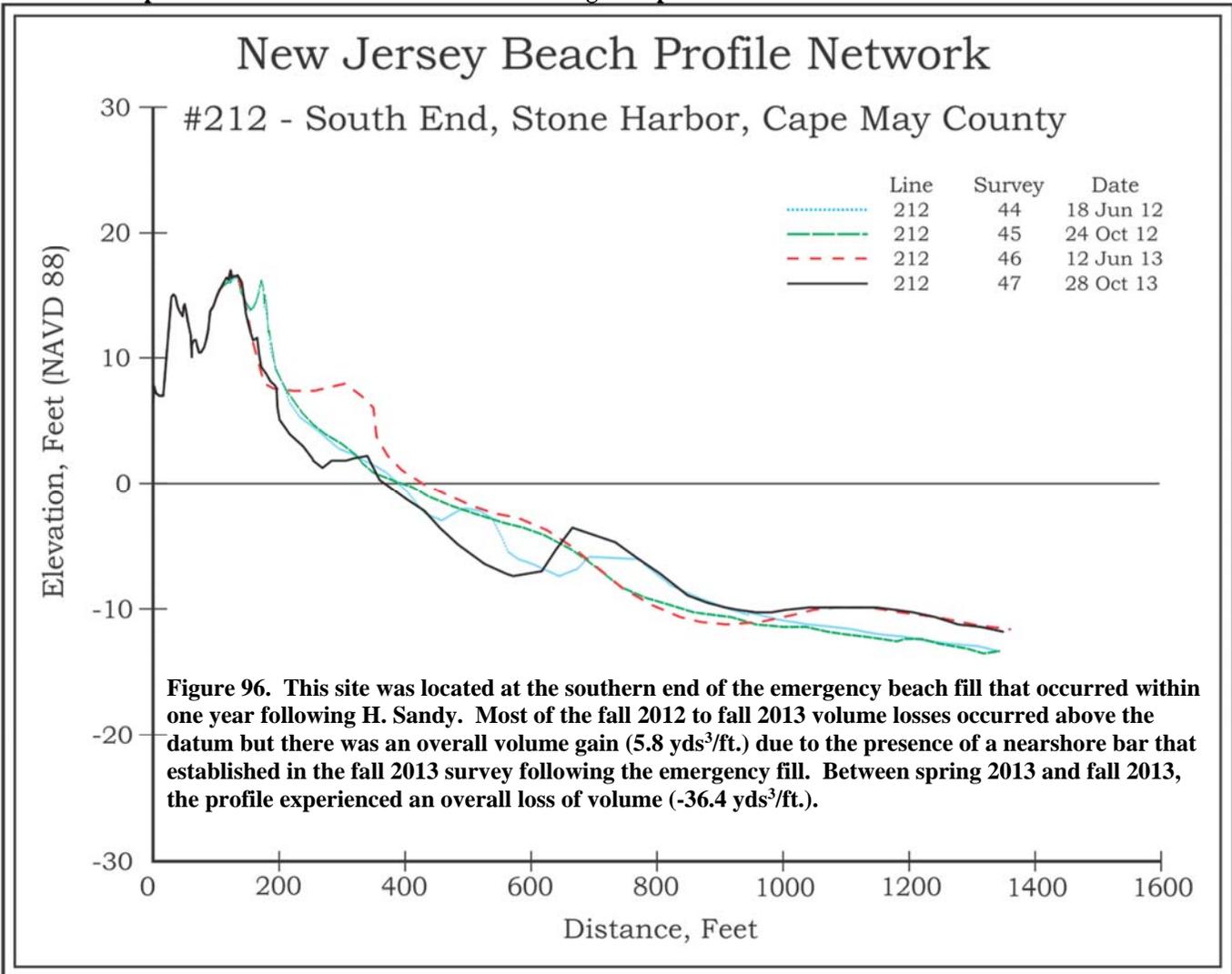
The 90th Street location was included in the 2011 Federal beach maintenance project. The left photo (taken October 23, 2012) shows the berm prior to H. Sandy. This site did not suffer significant erosion damage and no overwash beyond the dune toe area. The July 2013 survey shows the effects of the storm with a lower berm elevation and dune toe erosion. The 2013 emergency beach fill was underway but had not reached this location at the time of the July 2013 survey. The right photo (taken October 25, 2013) shows the berm following the completion of the emergency fill.



NJBPN 212 - 121st Street, Stone Harbor



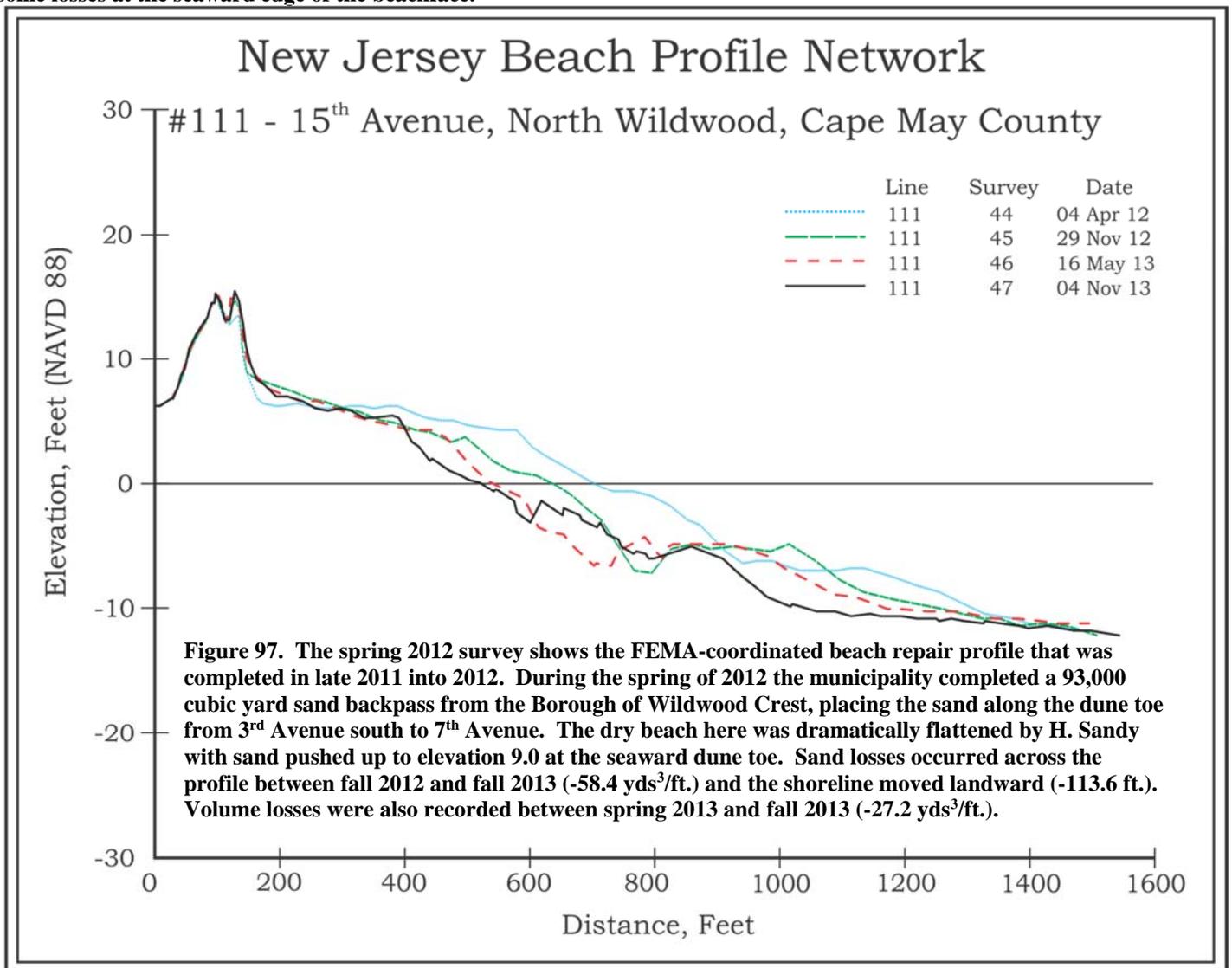
The south end Stone Harbor site has shown a long-term erosional trend that may be influenced by changes surrounding Hereford Inlet. The site has been the recipient of numerous beach nourishment projects including municipal and Federal efforts. The left photo (October 24, 2012) shows sand accumulations at the toe of the foredune. H. Sandy eliminated all the newly-deposited material and moved the beach landward uniformly by 50 feet. The right photo (October 28, 2013) shows an erosional scarp on the berm that was restored to full design template in the summer 2013.



NJBPN 111 - 15th Avenue, North Wildwood



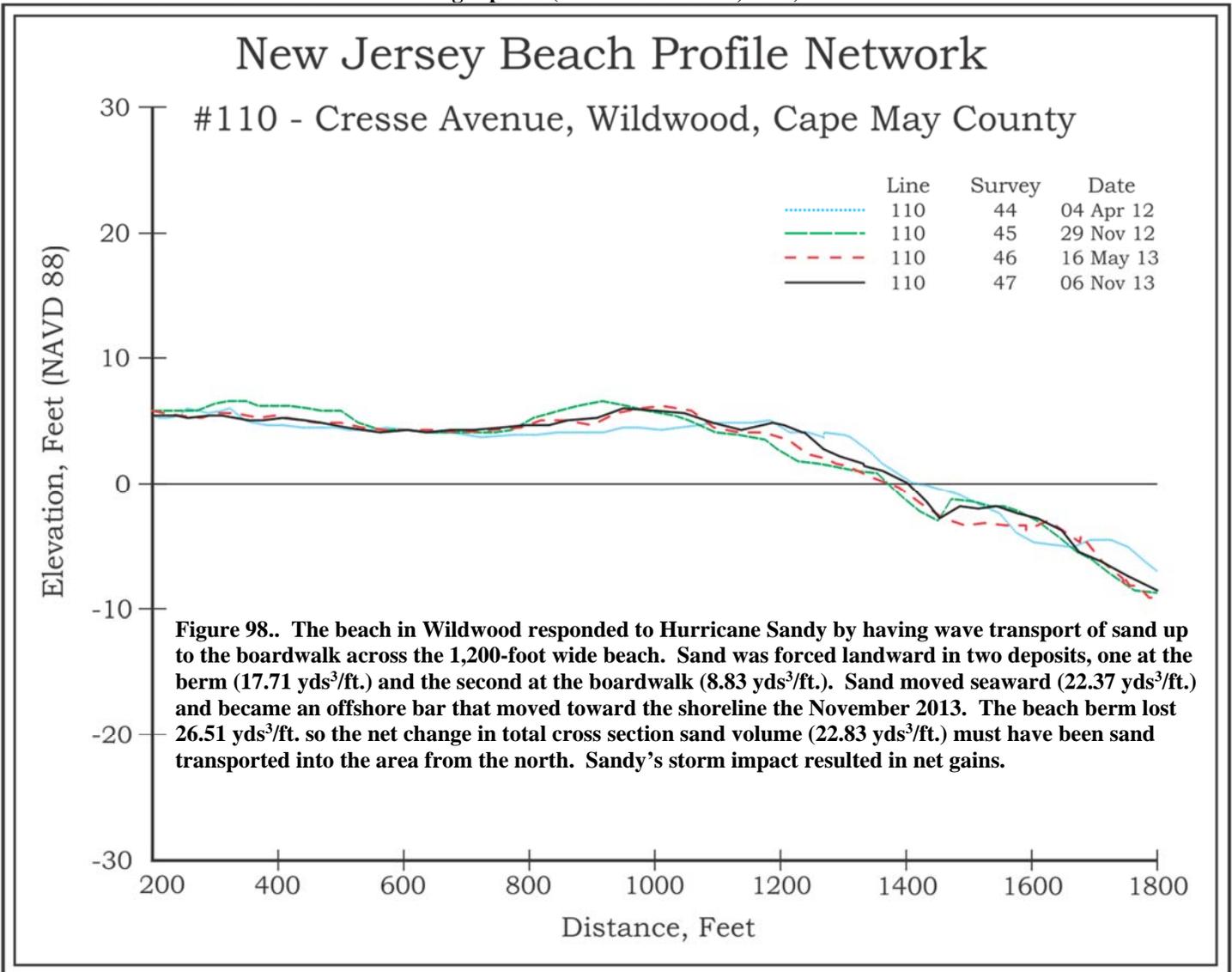
The 15th Avenue site is influenced by the dynamics at Hereford Inlet. On the left (photo taken November 29, 2012) dune grasses were present following H. Sandy. Though the waves flowed across the dry beach, no dune breach occurred here. On the right, (November 4, 2013) the berm elevation was nearly the same as the post-Sandy elevation, though the profile showed some losses at the seaward edge of the beachface.



NJBPN 110 - Cresse Avenue, Wildwood



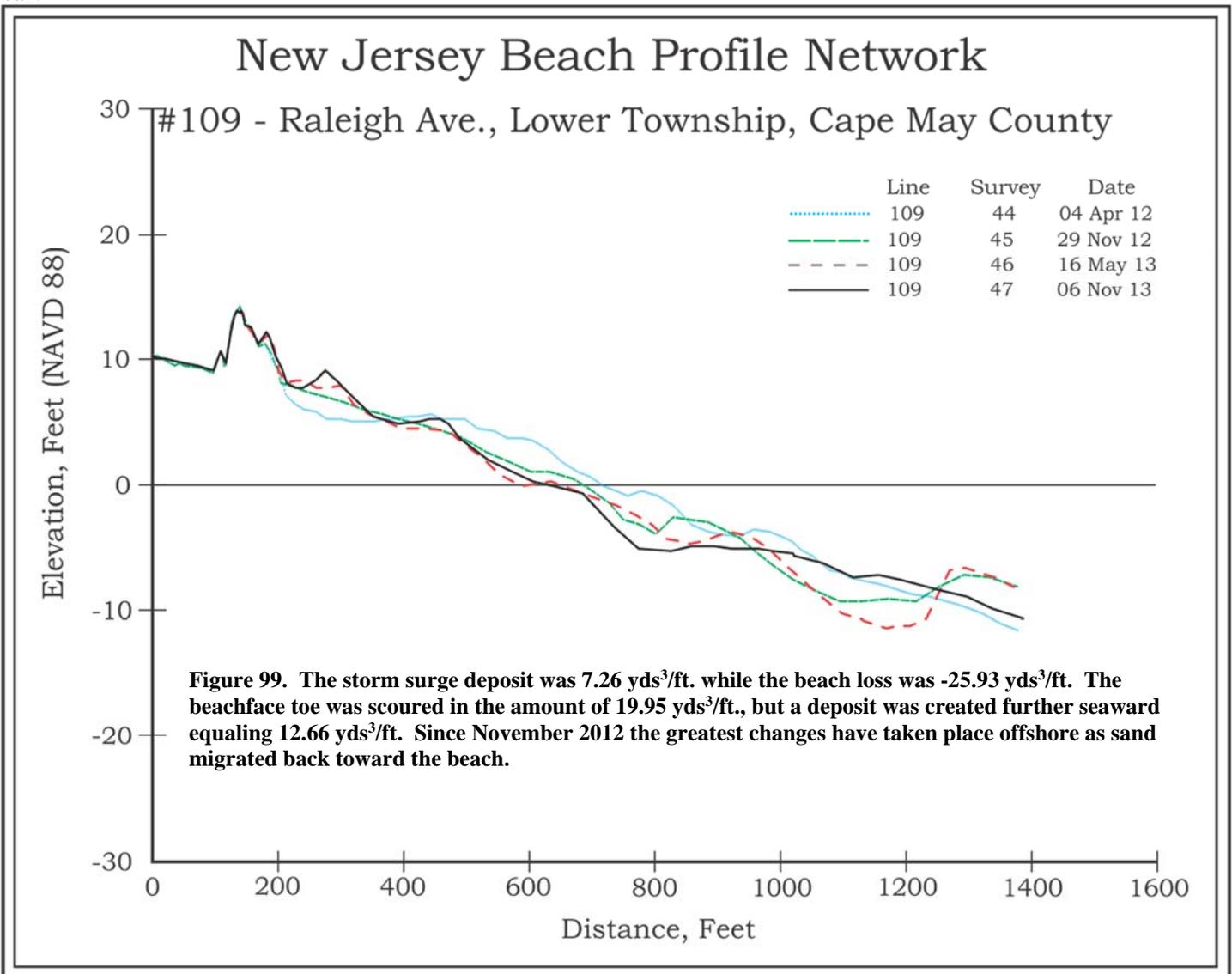
The Cresse Avenue site has been accumulating in volume since 1992. The photo on the left (taken November 29, 2012) shows a lower elevation berm than that shown in the right photo (taken November 6, 2013).



NJBPN 109 - Raleigh Avenue, Lower Township



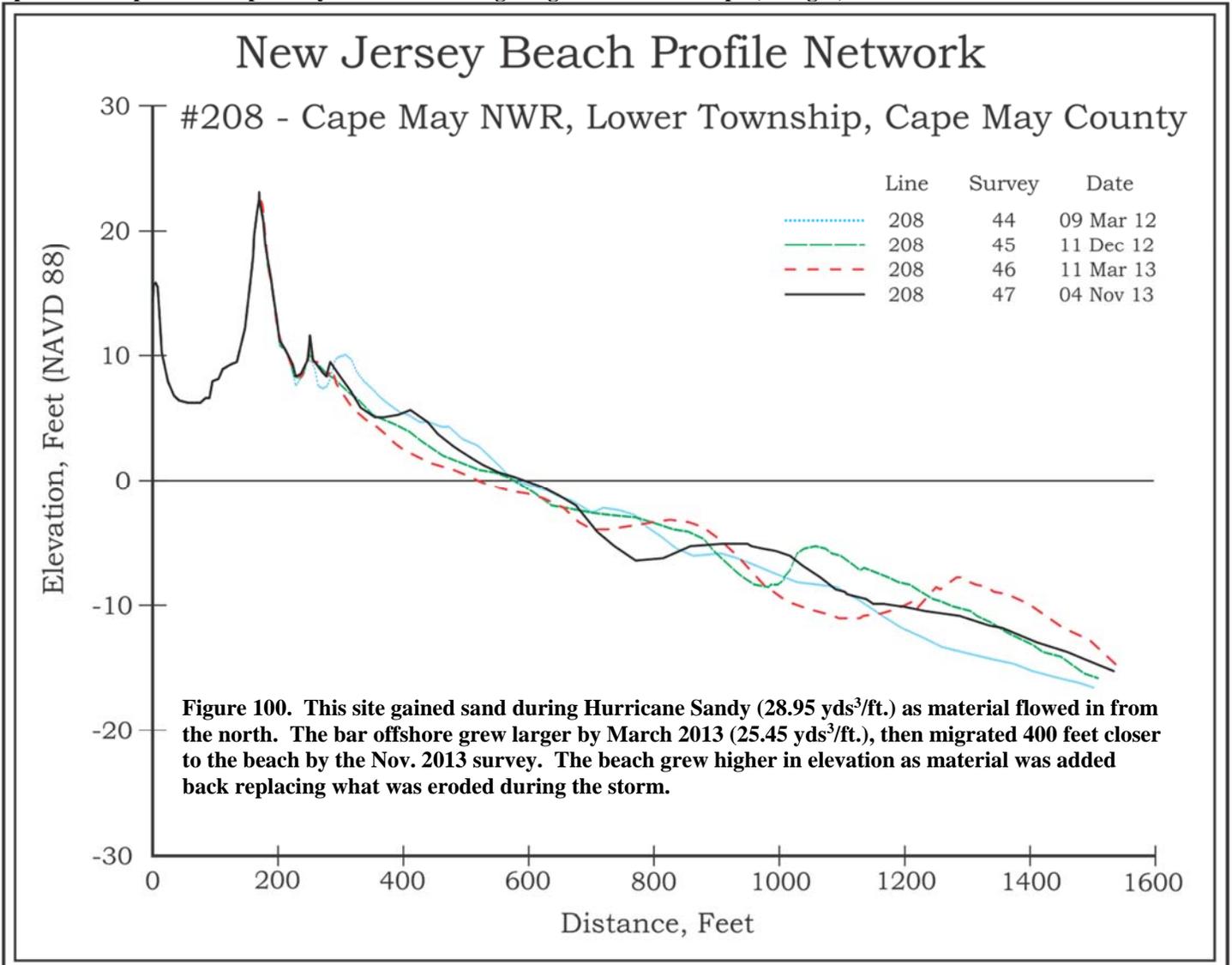
Left photo was taken November 29, 2012 and the right photo on November 6, 2013. Wave bores moved material up to the dunes generating a deposit at the dune toe, but sand was scoured from the beach and moved seaward generating an offshore bar.



NJBPN 208 – Cape May National Wildlife Refuge, Lower Township



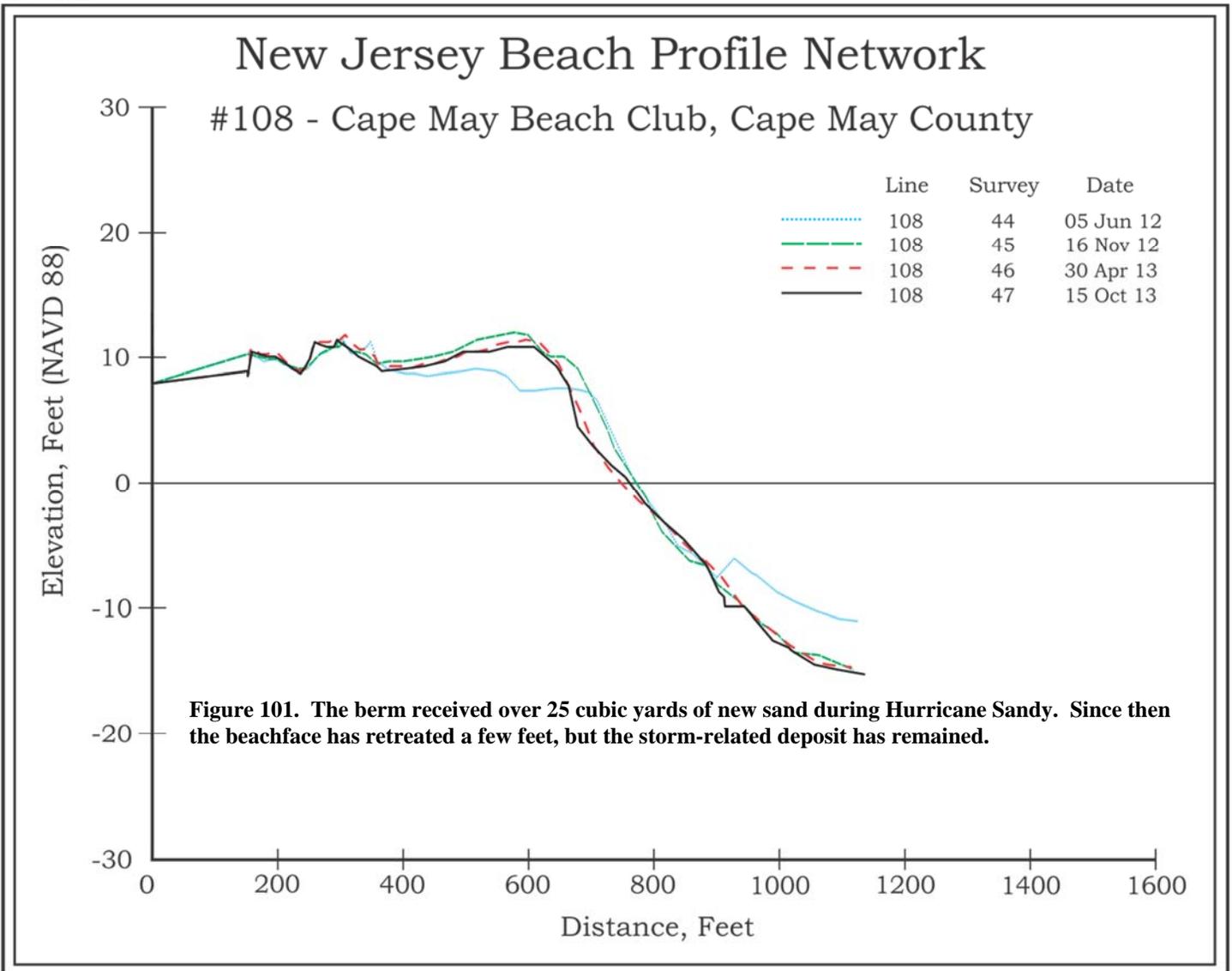
Left December 11, 2012 right November 4, 2013. Sandy removed the small foredune, washing sand in among the primary dunes at the edge of the beach. Sand was eroded from the beach and transported offshore depositing in a bar. This bar grew larger, further seaward by March 2013, finally migrating back toward the beach 400 feet by November 2013. Sand was blown up to the scarp cut in the primary dunes re-building the gentle seaward slope (on right).



NJBPN 108 - Cape May Beach Club, Cape May City



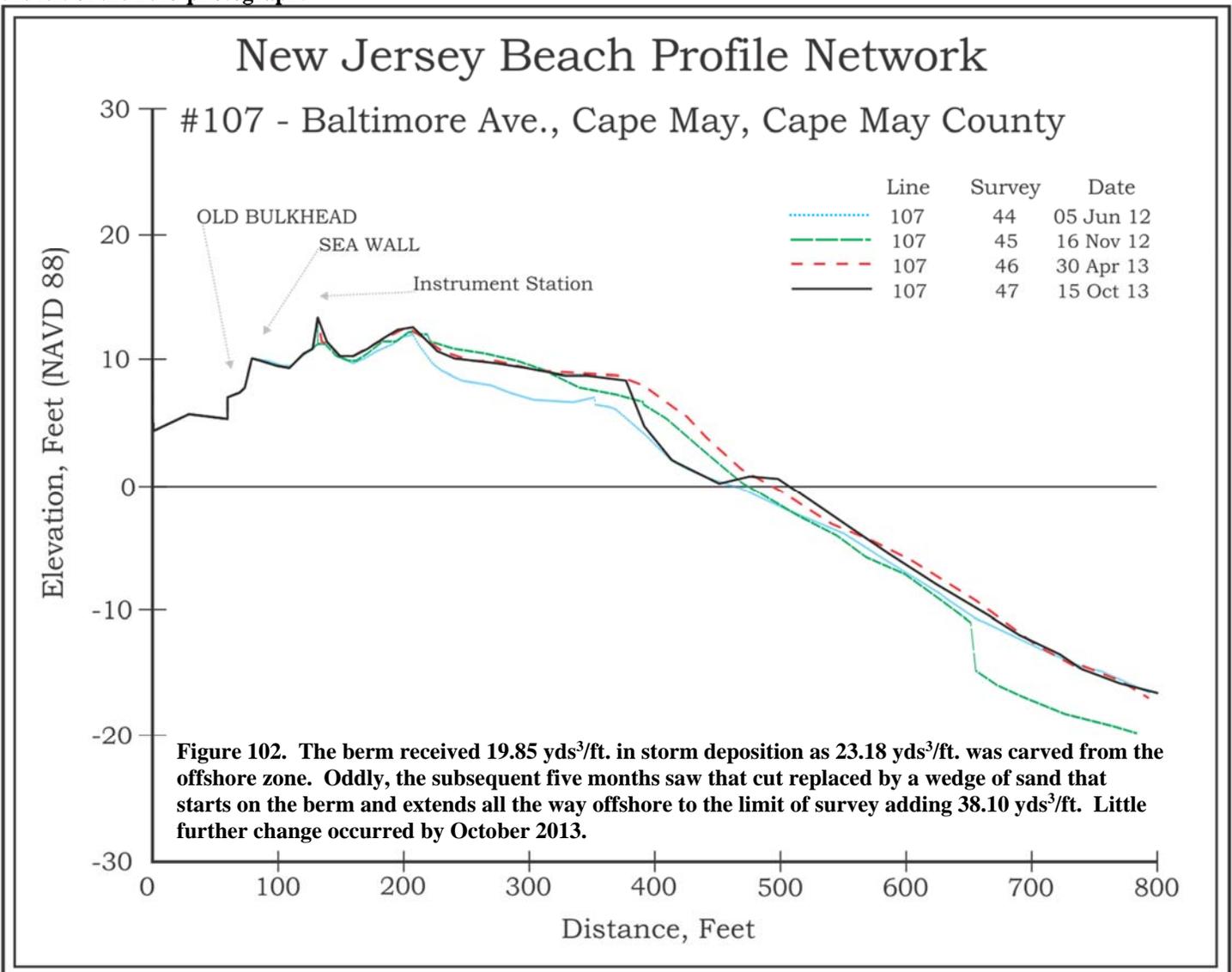
The left photo was taken on November 16, 2012, while the right photo was taken October 15, 2013. Here the most interesting impact of Sandy was the 26.04 yds³/ft. that was deposited on the berm from sources offshore during the hurricane. Subsequent surveys showed that this material was in place to stay. The beachface shows a sharp berm crest at a ten-foot elevation.



NJBPN 107 - Baltimore Avenue, Cape May City



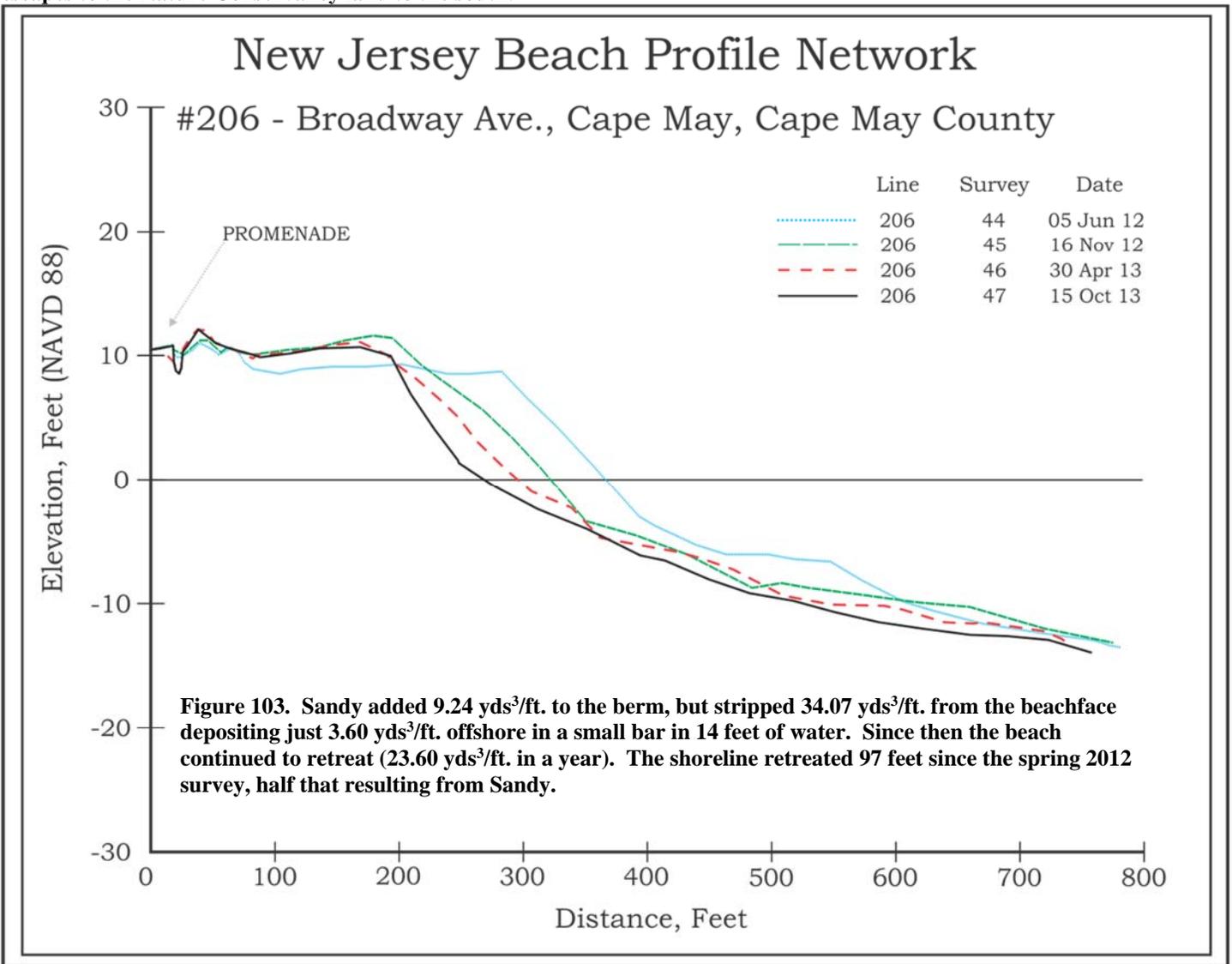
The left picture was taken on November 16, 2012, the right on October 15, 2013. The berm is higher by 3 feet in places due to sand deposited during Hurricane Sandy. Offshore material has migrated onto the lower beachface creating the flat terrace on the left of the 2013 photograph.



NJBPN 206 - Broadway Avenue, Cape May City



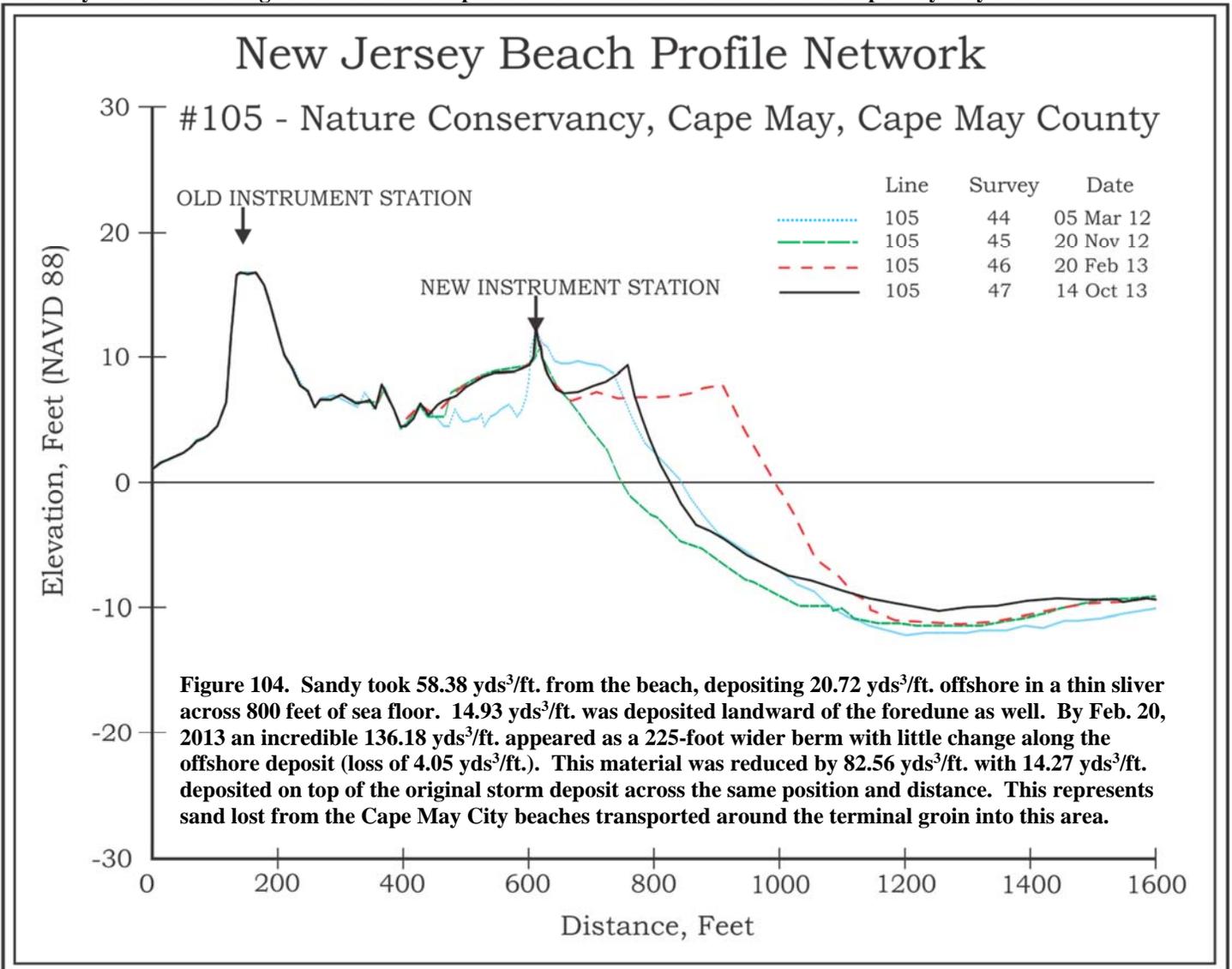
The left photo was taken on November 16, 2012, while the right was taken on October 15, 2013. This southern Cape May City beach is narrower as a result of Sandy, but the berm is higher. Since the storm the beachface has slowly retreated as sand escapes to the Nature Conservancy land to the south.



NJBPN 105 - Nature Conservancy, Cape May



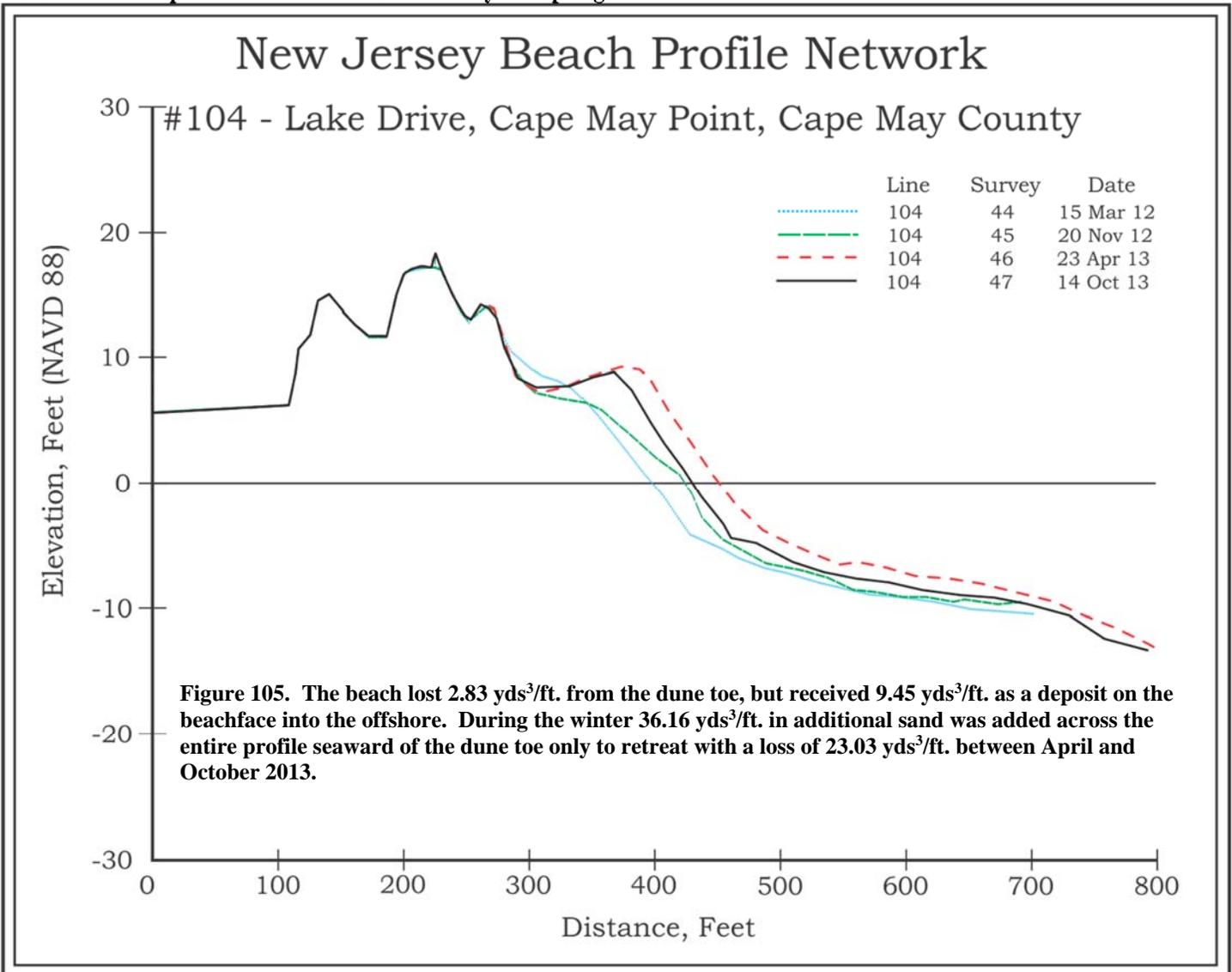
The left picture was taken November 20, 2012 the right on October 14, 2013. Both views are to the southwest toward Cape May Point along the natural area beach. The post-Sandy beach is back to the width prior to the storm, but the profile from February 2013 shows a large volume of sand deposited from material eroded from the Cape May City shoreline.



NJBPN 104 - Lake Drive, Cape May Point



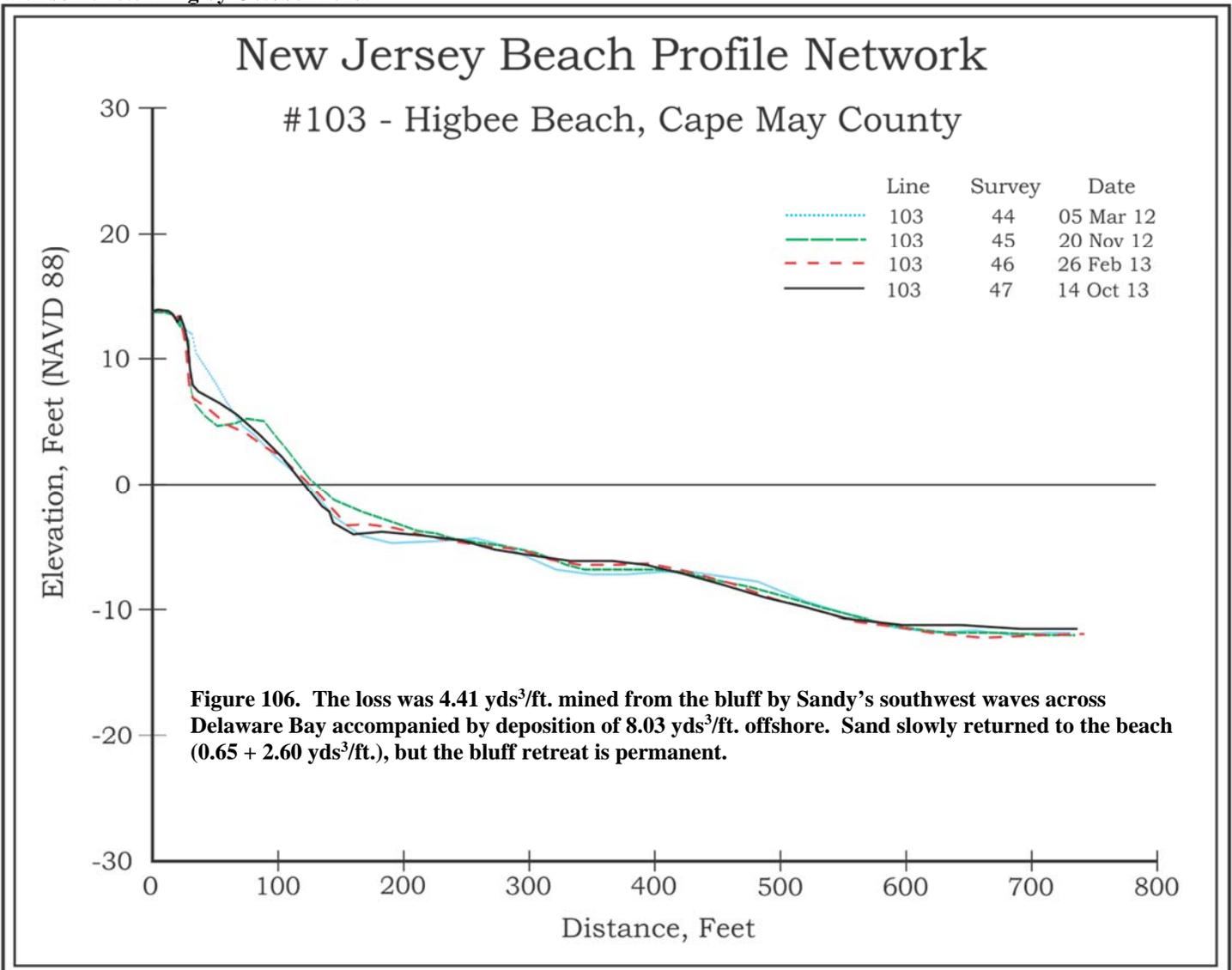
The left picture was taken November 20, 2012 and the right photo on October 14, 2013. The beach has become wider since Hurricane Sandy due to southerly littoral transport from Cape May City's beach restoration as well as brought in from AOCE work completed in the Nature Conservancy this spring.



NJBPN 103 - Higbee Beach State Park, Lower Township



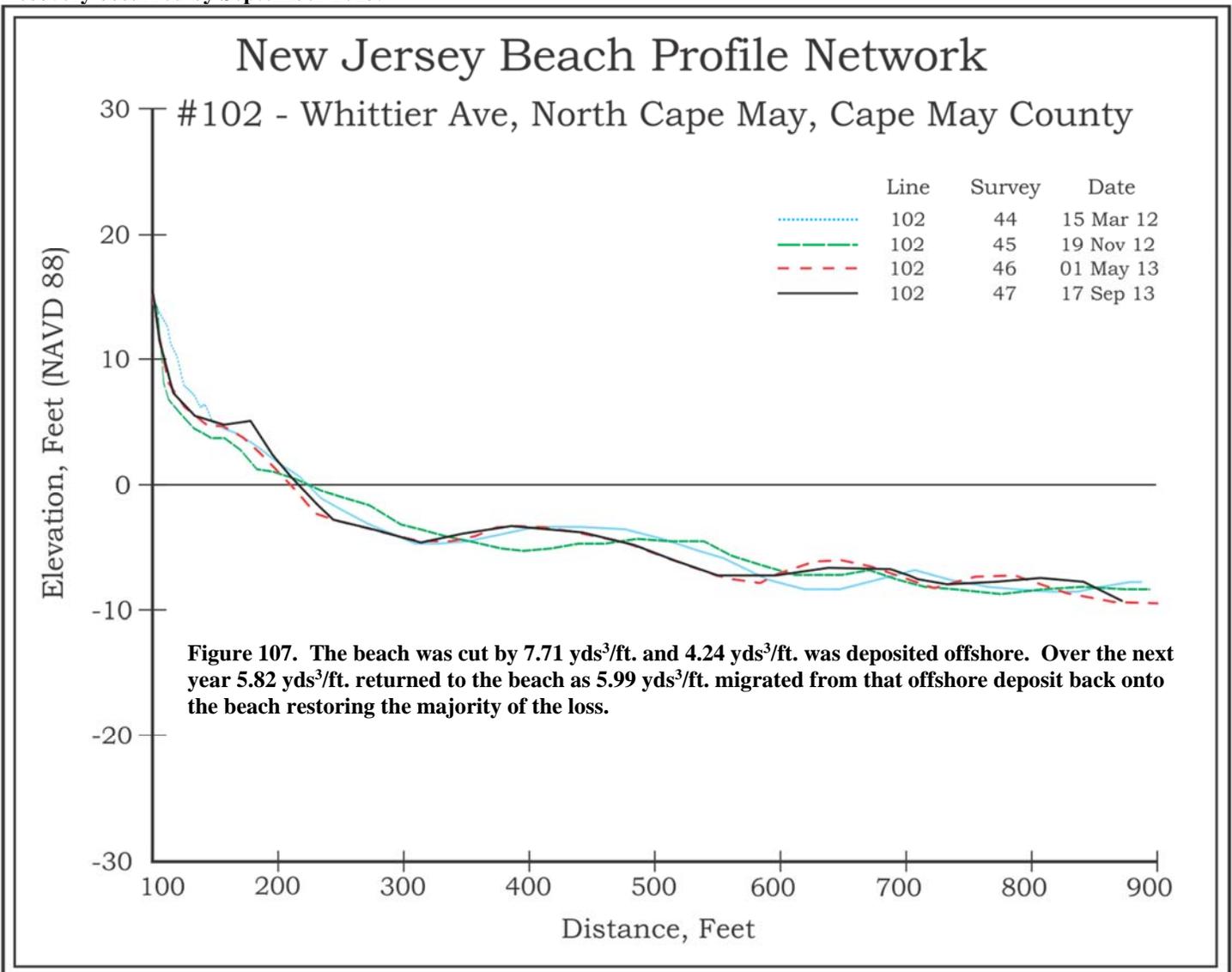
The left picture was taken November 20, 2012 and the right photo on October 14, 2013. This Delaware Bay site saw strong wave action from the southwest as the Hurricane Sandy eye came ashore in Atlantic County. Wind direction reversal generated 6-foot high waves on Delaware Bay that cut into the bluff at Higbee Beach. Sand was moved offshore into the bay with some returning by October 2013.



NJBPN 102 - Whittier Avenue, North Cape May



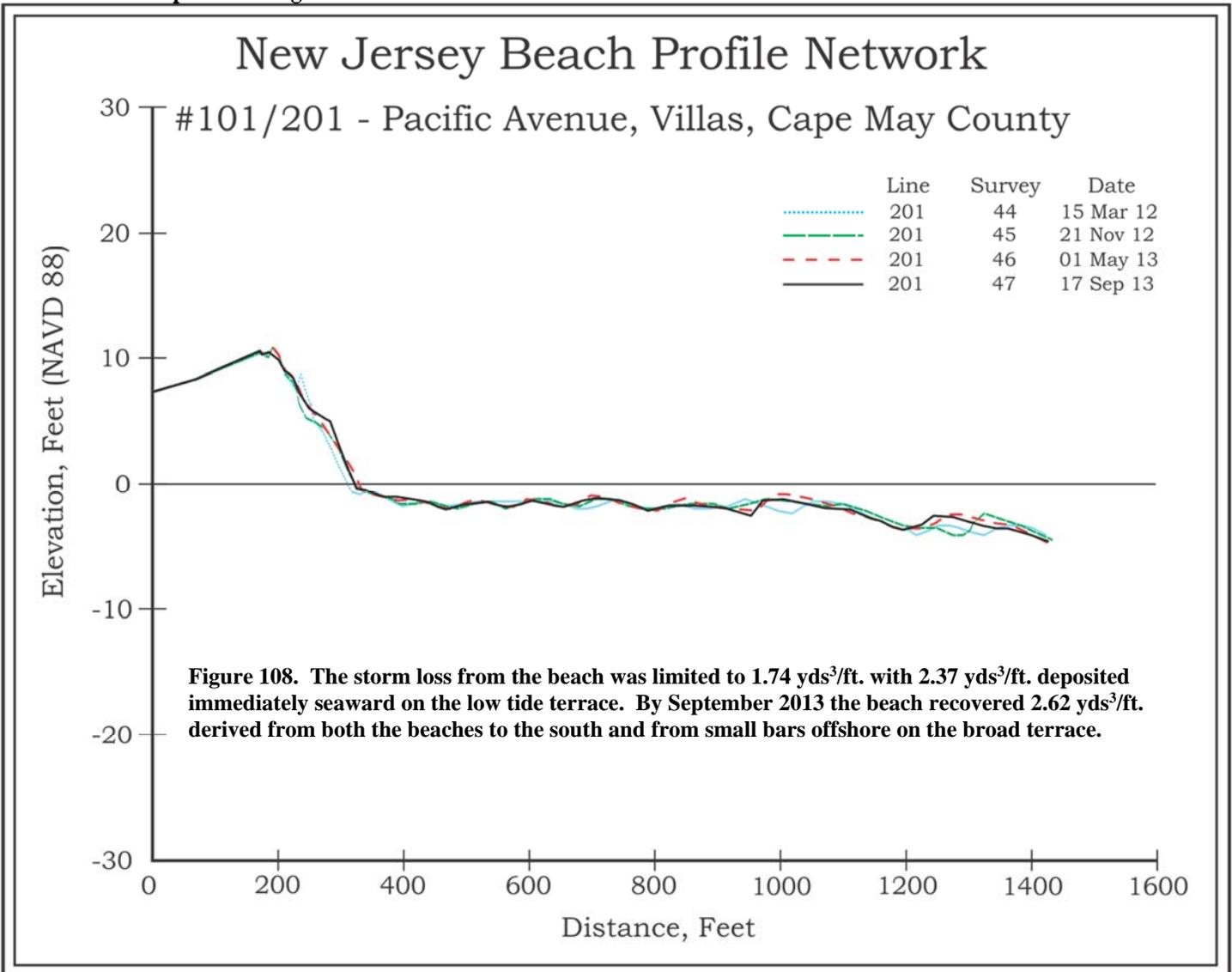
The left photo was taken on November 19, 2012 while the right photo was taken on September 17, 2013. The beach suffered extensive dune erosion and loss of beach material with deposition on the terrace just beyond the base of the beachface. Recovery occurred by September 2013.



NJBPN 201 - Pacific Avenue, Villas



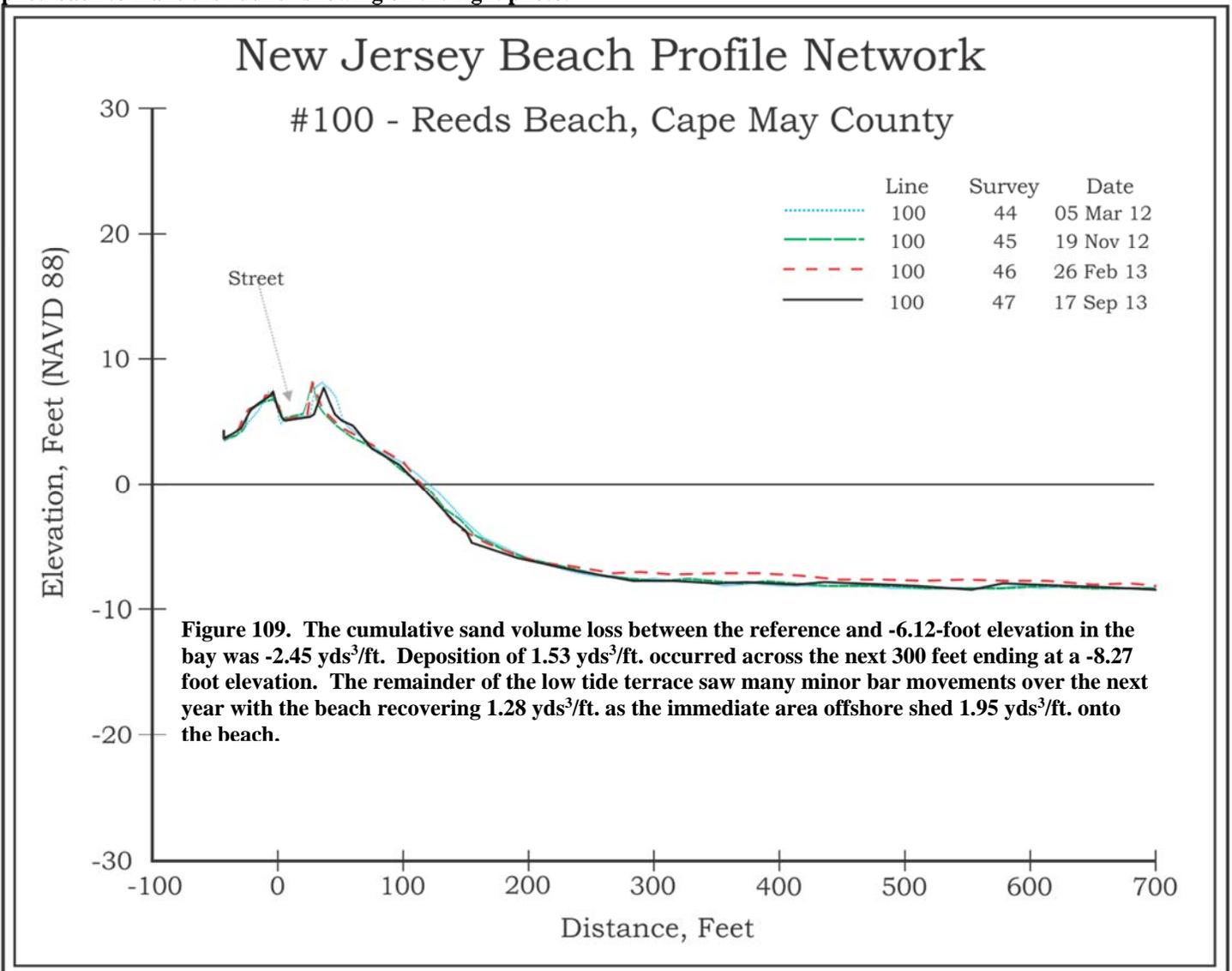
The left view was taken March 7, 2012 while the right photo was taken September 17, 2013. At this site the damage was less to the beachface in spite of strong waves from the southwest.



NJBPN 100 - Reeds Beach, Middle Township



The left photograph was taken November 19, 2012 and the right picture was taken on September 17, 2013. At Reeds Beach the strong SW waves washed the entire dune landward across the road into the marsh. Sand was recovered from the road and piled back to make the “dune” showing on the right photo.



Summary and Conclusions of Cape May County:

Cape May County suffered beach erosion during Hurricane Sandy that varied greatly by location and initial beach conditions. In fact, the Wildwoods and Cape May City beaches actually gained sand volume either at higher elevations at the toe of the dunes or across the entire profile in two cases. Southerly transport of large volumes of sand were seen at the southern end of each island, but particularly where Cape May City abuts the Nature Conservancy land. The beach gain at site #105 registered a volume increase consistent with a major beach fill, not a seasonal or storm-generated change.

The northeast corner of each barrier island was impacted the hardest, particularly Ocean City's Gardens district; Strathmere less so; 10th Street in Avalon suffered the usual losses, with damage to the North Wildwood NJ State/locally sponsored beach project (site #111). South of that site, Sandy actually added sand to the beaches all the way to Cape May Point.

The northeast storm events following Hurricane Sandy actually took more sand volume from these beaches. One in November after Sandy and one in October 2013 (named Saturn) were universally damaging to the width of the county beaches so that recovery was dependent on the summer sand migration back from the offshore locations where the storms deposited the material.

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).

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)

Final design and contract preparation continue for the start of construction on an authorized, but not constructed project prior to Hurricane Sandy on the Corson's Inlet to Townsend's Inlet that will include the southern portion of Ocean City and the Corson's Inlet State Park. Work also 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 effect a sand "recycling" program, termed "Back Passing". The final element in the future is the revitalization of a single 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 separately funded and may utilize Delaware Bay dredge material placed about 10 miles away over years of time from a variety of lower Delaware Bay ship channel dredging projects.

APPENDIX – COUNTY ANNUAL BEACH VOLUME AND SHORELINE CHANGES

TABLE 3				
MONMOUTH COUNTY				
ANNUAL BEACH VOLUME CHANGES				
SPRING 2012 - SPRING 2013 & FALL 2012 - FALL 2013				
		Survey		
		44 - 46		45 - 47
PROFILE SITE		S2012-S2013		F2012 - F2013
LOCATION		(volume expressed as cubic yards per foot)		
187:	Cliffwood Beach Park	-7.23		-6.10
286:	Union Beach	-5.02		7.04
185:	Port Monmouth, Spy House Museum	-2.00		-2.77
285:	Gateway National R. A., Gunnison Beach	9.34		27.39
284:	Gateway National R. A., Parking Lot E	0.40		63.47
184:	Highland Beach, Gateway Entrance	21.71		74.07
183:	Highland Beach, Via Ripa St.	13.92		58.46
282:	Sea Bright, Shrewsbury Way	2.06		20.03
182:	Sea Bright, North of Route 520	102.23		95.93
181:	Sea Bright, Municipal Beach	34.82		103.02
180:	Sea Bright, Sunset Court	65.28		101.91
179:	Monmouth Beach, Cottage Rd.	-63.02		181.39
178:	Monmouth Beach, Beach Club	-119.41		140.83
177:	Long Branch, 404 Ocean Ave.	-51.42		-23.41
176:	Long Branch, Seven Presidents Park	-17.82		-16.55
175:	Long Branch, North Broadway Ave.	14.82		-33.85
174:	Long Branch, Morris Ave.	-15.60		-17.74
173:	Long Branch, West End Ave.	-29.01		-12.62
272:	Long Branch 805 Ocean Ave.	-34.07		-38.50
171:	Elberon, Pullman Ave.	2.29		30.48
170:	Deal, Roosevelt Ave.	3.05		11.85
169:	Deal, Darlington Ave.	-18.65		-0.98
168:	Allenhurst, Corlies Ave.	-44.97		-38.66
267:	Asbury Park, 7th Ave.	4.30		-31.28
167:	Asbury Park, 3rd Ave.	13.20		-8.78
166:	Ocean grove, Ocean Pathway	-4.31		-13.52
165:	Bradley Beach, McCabe Ave.	30.51		-15.36
164:	Avon-By-The-Sea, Sylvania Ave.	-24.09		-10.84
163:	Belmar, 5th Ave.	-28.42		-18.01
162:	Belmar, 18th Ave.	26.79		-15.94
161:	Spring Lake, Brighton Ave.	-11.19		0.30
160:	Spring Lake, Salem Ave.	8.05		-30.27
159:	Sea Girt, New York Ave.	-35.72		-25.99
158:	Sea Girt, Trenton Ave.	-27.60		-3.64
157:	Manasquan, Riddle Way	39.78		11.97
256:	Manasquan, Pompano Ave.	23.05		17.70

TABLE 4			
MONMOUTH COUNTY			
ANNUAL SHORELINE CHANGES			
SPRING 2012 - SPRING 2013 & FALL 2012 - FALL 2013			
		Survey	
		44 - 46	45 - 47
PROFILE SITE		S2012-S2013	F2012 - F2013
LOCATION		(shoreline change expressed in feet)	
187:	Cliffwood Beach Park	2.4	-7.1
286:	Union Beach	2.2	-3.2
185:	Port Monmouth, Spy House Museum	-0.9	-13.8
285:	Gateway National R. A., Gunnison Beach	-33.4	-138.7
284:	Gateway National R. A., Parking Lot E	20.6	57.3
184:	Highland Beach, Gateway Entrance	-29.2	52.8
183:	Highland Beach, Via Ripa St.	-71.4	20.6
282:	Sea Bright, Shrewsbury Way	-156.1	7.2
182:	Sea Bright, North of Route 520	54.5	73.3
181:	Sea Bright, Municipal Beach	2.0	90.8
180:	Sea Bright, Sunset Court	32.3	89.1
179:	Monmouth Beach, Cottage Rd.	-137.1	199.5
178:	Monmouth Beach, Beach Club	-172.9	144.3
177:	Long Branch, 404 Ocean Ave.	-137.6	-67.3
176:	Long Branch, Seven Presidents Park	-101.3	-66.4
175:	Long Branch, North Broadway Ave.	-54.0	-31.2
174:	Long Branch, Morris Ave.	-68.9	-33.8
173:	Long Branch, West End Ave.	-83.8	-13.7
272:	Long Branch 805 Ocean Ave.	-6.19	-66.0
171:	Elberon, Pullman Ave.	-9.5	48.1
170:	Deal, Roosevelt Ave.	-23.3	60.7
169:	Deal, Darlington Ave.	-29.6	-20.1
168:	Allenhurst, Corlies Ave.	-92.8	-17.9
267:	Asbury Park, 7th Ave.	-59.5	-54.2
167:	Asbury Park, 3rd Ave.	-58.0	-16.7
166:	Ocean grove, Ocean Pathway	-70.3	-34.4
165:	Bradley Beach, McCabe Ave.	-19.9	-20.7
164:	Avon-By-The-Sea, Sylvania Ave.	-23.5	-1.9
163:	Belmar, 5th Ave.	-43.1	-4.7
162:	Belmar, 18th Ave.	-12.8	2.0
161:	Spring Lake, Brighton Ave.	-60.7	2.3
160:	Spring Lake, Salem Ave.	-27.5	-16.9
159:	Sea Girt, New York Ave.	-71.5	-62.9
158:	Sea Girt, Trenton Ave.	-57.2	-77.8
157:	Manasquan, Riddle Way	-53.3	-29.5
256:	Manasquan, Pompano Ave.	-46.2	-6.6

TABLE 5						
MONMOUTH COUNTY						
SEASONAL BEACH VOLUME CHANGES						
	Survey	44-45	45-46	46-47	44-47	
PROFILE SITE		S12-F12	F12-S13	S13-F13	S12-F13	
LOCATION	(volume expressed as cubic yards per foot of beachfront)					
187: Cliffwood Beach Park		-7.08	-0.25	-5.85	-13.12	
286: Union Beach		2.09	-7.11	14.09	9.06	
185: Port Monmouth, Spy House Museum		2.60	-4.60	1.77	-0.04	
285: Gateway National R. A., Gunnison Beach		-0.20	8.95	17.93	25.28	
284: Gateway National R. A., Parking Lot E		-14.58	15.09	48.47	48.72	
184: Highland Beach, Gateway Entrance		6.41	14.36	59.64	82.19	
183: Highland Beach, Via Ripa St.		1.40	11.96	46.42	61.53	
282: Sea Bright, Shrewsbury Way		-5.17	7.29	15.56	11.83	
182: Sea Bright, North of Route 520		-2.77	106.63	-11.66	-90.39	
181: Sea Bright, Municipal Beach		-14.83	49.37	53.62	89.53	
180: Sea Bright, Sunset Court		-5.45	82.94	18.95	88.79	
179: Monmouth Beach, Cottage Rd.		-42.97	-20.01	201.44	138.51	
178: Monmouth Beach, Beach Club		-79.17	-40.07	181.20	61.56	
177: Long Branch, 404 Ocean Ave.		-40.28	-11.09	-12.31	-63.43	
176: Long Branch, Seven Presidents Park		-8.67	-7.69	-9.33	-26.40	
175: Long Branch, North Broadway Ave.		43.40	-28.71	-5.97	9.65	
174: Long Branch, Morris Ave.		-14.24	-2.39	-16.21	-31.20	
173: Long Branch, West End Ave.		-25.81	-5.64	-7.27	-35.09	
272: Long Branch 805 Ocean Ave.		-4.37	-29.20	-11.06	-42.67	
171: Elberon, Pullman Ave.		-8.45	12.64	17.71	19.83	
170: Deal, Roosevelt Ave.		-14.16	17.19	-4.99	-1.92	
169: Deal, Darlington Ave.		-3.06	-15.65	14.16	-2.96	
168: Allenhurst, Corlies Ave.		16.56	-64.62	12.87	-25.08	
267: Asbury Park, 7th Ave.		16.66	-10.80	-19.91	-15.11	
167: Asbury Park, 3rd Ave.		-2.71	7.83	-20.14	-6.89	
166: Ocean grove, Ocean Pathway		0.05	-4.36	-9.20	-12.93	
165: Bradley Beach, McCabe Ave.		-6.33	23.45	-43.57	-14.64	
164: Avon-By-The-Sea, Sylvania Ave.		-2.79	-20.43	7.17	-14.54	
163: Belmar, 5th Ave.		8.93	-35.96	10.71	-9.56	
162: Belmar, 18th Ave.		12.72	12.99	-30.30	-2.96	
161: Spring Lake, Brighton Ave.		2.36	-13.27	13.99	2.69	
160: Spring Lake, Salem Ave.		8.50	3.04	-32.04	-21.71	
159: Sea Girt, New York Ave.		17.22	-53.48	20.66	-8.65	
158: Sea Girt, Trenton Ave.		-3.95	-22.35	20.62	-7.56	
157: Manasquan, Riddle Way		3.03	36.99	-24.85	14.63	
256: Manasquan, Pompano Ave.		-19.31	32.43	-18.25	4.92	

TABLE 6						
MONMOUTH COUNTY						
SEASONAL SHORELINE CHANGES						
	Survey	44-45	45-46	46-47	44-47	
PROFILE SITE		S12-F12	F12-S13	S13-F13	S12-F13	
LOCATION		(shoreline change expressed in feet)				
187: Cliffwood Beach Park		-1.3	3.6	-10.8	-8.4	
286: Union Beach		7.9	-5.76	2.6	4.73	
185: Port Monmouth, Spy House Museum		8.8	-9.7	-4.1	-5.0	
285: Gateway National R. A., Gunnison Beach		113.0	-146.4	7.7	-25.7	
284: Gateway National R. A., Parking Lot E		-1.4	22.0	35.2	55.8	
184: Highland Beach, Gateway Entrance		-46.3	17.1	35.7	6.5	
183: Highland Beach, Via Ripa St.		-29.9	-41.4	62.0	-9.4	
282: Sea Bright, Shrewsbury Way		-88.0	-68.1	75.3	-80.7	
182: Sea Bright, North of Route 520		-11.1	65.6	7.7	62.2	
181: Sea Bright, Municipal Beach		15.5	-13.5	104.3	106.2	
180: Sea Bright, Sunset Court		8.5	23.8	65.3	97.6	
179: Monmouth Beach, Cottage Rd.		-43.8	-93.2	292.7	155.6	
178: Monmouth Beach, Beach Club		-86.3	-86.6	230.9	58.0	
177: Long Branch, 404 Ocean Ave.		-49.5	-88.1	20.8	-116.8	
176: Long Branch, Seven Presidents Park		-7.6	-93.7	27.3	-74.0	
175: Long Branch, North Broadway Ave.		5.3	-59.4	28.2	-25.9	
174: Long Branch, Morris Ave.		-13.7	-55.2	21.4	-47.5	
173: Long Branch, West End Ave.		-21.3	-62.5	48.8	-35.0	
272: Long Branch 805 Ocean Ave.		24.89	-31.08	-34.9	-41.1	
171: Elberon, Pullman Ave.		-9.2	-0.3	48.5	39.0	
170: Deal, Roosevelt Ave.		-25.3	2.0	58.6	35.4	
169: Deal, Darlington Ave.		13.7	-43.2	23.1	-6.5	
168: Allenhurst, Corlies Ave.		30.8	-123.5	105.7	12.9	
267: Asbury Park, 7th Ave.		21.4	-80.9	26.7	-32.8	
167: Asbury Park, 3rd Ave.		26.4	-84.4	67.7	9.7	
166: Ocean grove, Ocean Pathway		23.6	-93.9	59.5	-10.8	
165: Bradley Beach, McCabe Ave.		28.3	-48.2	27.5	7.6	
164: Avon-By-The-Sea, Sylvania Ave.		3.2	-26.7	24.8	1.3	
163: Belmar, 5th Ave.		5.5	-48.6	43.9	0.8	
162: Belmar, 18th Ave.		16.6	-29.5	31.4	18.6	
161: Spring Lake, Brighton Ave.		1.4	-62.1	64.4	3.7	
160: Spring Lake, Salem Ave.		4.8	-32.3	15.4	-12.1	
159: Sea Girt, New York Ave.		76.9	-148.4	85.6	14.0	
158: Sea Girt, Trenton Ave.		54.8	-112.0	34.2	-23.0	
157: Manasquan, Riddle Way		-29.7	-23.7	-5.9	-59.2	
256: Manasquan, Pompano Ave.		-15.2	-31.0	24.4	-21.8	

TABLE 7				
OCEAN COUNTY				
ANNUAL BEACH VOLUME CHANGES				
SPRING 2012 - SPRING 2013 & FALL 2012 - FALL 2013				
		Survey		
		44 - 46		45 - 47
PROFILE SITE		S2012-S2013		F2012 - F2013
LOCATION		(volume expressed as cubic yards per foot)		
156:	Point Pleasant, Water St.	-88.31		-74.51
155:	Point Pleasant, Maryland Ave.	-11.16		-5.74
154:	Bay Head, Johnson Ave.	-31.35		-36.74
153:	Mantoloking, 1117 Ocean Ave.	-65.74		11.28
152:	Brick Township, Public Beach	-0.67		2.18
151:	Normandy Beach, 1st Ave	-35.48		-27.69
150:	Lavallette, White Ave.	18.23		-15.62
149:	Ortley Beach, 8th Ave.	-0.68		0.16
248:	Seaside, Franklin Ave.	-20.57		-11.24
148:	Seaside Park, 4th Ave.	28.80		-14.37
347:	Berkeley Township, 6th Ave.	13.70		-5.85
247:	Island Beach State Park, North	-13.53		-3.77
246:	Island Beach State Park, Middle	-68.02		-12.42
146:	Island Beach State Park, South	-9.18		38.80
245:	Barnegat Light, 10th St.	2.27		-11.20
145:	Barnegat Light, 26th St.	-14.62		-32.32
144:	Loveladies, La Baia St.	-10.88		-18.16
143:	Harvey Cedars, 73rd St.	-48.13		68.17
142:	Harvey Cedars, Tranquility Drive	32.96		86.03
241:	Surf City, 20th St.	11.70		36.60
141:	Ship Bottom, 8th St.	-45.85		5.99
140:	Long Beach Township, 32nd St.	-46.72		74.98
139:	Long Beach Township, 81st St.	21.13		4.91
138:	Long Beach Township, Old Whaling Rd.	69.58		36.47
137:	Beach Haven, Taylor Ave.	29.77		35.53
136:	Beach Haven, Dolphin Ave.	-42.72		-3.85
135:	Long Beach Township, Webster Ave.	-35.95		-27.66
234:	Long Beach Township, Border w/ Refuge	93.28		44.97

TABLE 8				
OCEAN COUNTY				
ANNUAL SHORELINE CHANGES				
SPRING 2012 - SPRING 2013 & FALL 2012 - FALL 2013				
		Survey		
		44 - 46		45 - 47
PROFILE SITE		S2012-S2013		F2012 - F2013
LOCATION		(shoreline change expressed in feet)		
156:	Point Pleasant, Water St.	-114.23		-46.71
155:	Point Pleasant, Maryland Ave.	-63.74		-15.88
154:	Bay Head, Johnson Ave.	-83.50		-19.74
153:	Mantoloking, 1117 Ocean Ave.	-102.95		-21.83
152:	Brick Township, Public Beach	-78.93		-6.25
151:	Normandy Beach, 1st Ave	-50.07		-3.03
150:	Lavallette, White Ave.	-35.74		-38.55
149:	Ortley Beach, 8th Ave.	-78.63		-82.00
248:	Seaside, Franklin Ave.	-83.13		-17.52
148:	Seaside Park, 4th Ave.	-43.16		1.05
347:	Berkeley Township, 6th Ave.	-35.45		10.37
247:	Island Beach State Park, North	-84.65		-26.96
246:	Island Beach State Park, Middle	-139.55		31.61
146:	Island Beach State Park, South	-119.60		105.09
245:	Barnegat Light, 10th St.	1.48		-30.06
145:	Barnegat Light, 26th St.	-68.84		-30.64
144:	Loveladies, La Baia St.	-69.19		-84.77
143:	Harvey Cedars, 73rd St.	-94.22		102.76
142:	Harvey Cedars, Tranquility Drive	18.34		155.04
241:	Surf City, 20th St.	-22.62		98.08
141:	Ship Bottom, 8th St.	-83.10		13.23
140:	Long Beach Township, 32nd St.	-149.48		82.08
139:	Long Beach Township, 81st St.	-28.45		3.63
138:	Long Beach Township, Old Whaling Rd.	31.97		13.18
137:	Beach Haven, Taylor Ave.	18.76		59.54
136:	Beach Haven, Dolphin Ave.	-27.94		4.54
135:	Long Beach Township, Webster Ave.	-83.67		-44.56
234:	Long Beach Township, Border w/ Refuge	98.18		145.43

TABLE 9

OCEAN COUNTY

SEASONAL BEACH VOLUME CHANGES

	Survey	44-45	45-46	46-47	44-47
PROFILE SITE		S12-F12	F12-S13	S13-F13	S12-F13
LOCATION		(volume expressed as cubic yards per foot of beachfront)			
156: Point Pleasant, Water St.		18.64	-106.72	30.36	-58.17
155: Point Pleasant, Maryland Ave.		2.25	-7.71	-0.78	-7.08
154: Bay Head, Johnson Ave.		10.17	-42.09	4.57	-26.22
153: Mantoloking, 1117 Ocean Ave.		5.15	-59.76	71.41	10.81
152: Brick Township, Public Beach		1.09	-2.16	2.56	3.53
151: Normandy Beach, 1st Ave		0.92	-35.50	5.64	-27.31
150: Lavallette, White Ave.		10.63	8.68	-26.95	-5.67
149: Ortley Beach, 8th Ave.		-3.64	8.40	-4.25	-4.31
248: Seaside, Franklin Ave.		6.89	-27.37	16.09	-4.43
148: Seaside Park, 4th Ave.		2.42	27.34	-41.61	-12.43
347: Berkeley Township, 6th Ave.		0.70	17.41	-23.27	-7.87
247: Island Beach State Park, North		-2.43	-11.00	7.76	-5.89
246: Island Beach State Park, Middle		-19.65	-50.08	36.94	-30.51
146: Island Beach State Park, South		-46.40	36.18	2.08	-5.95
245: Barnegat Light, 10th St.		22.98	-20.68	9.43	11.64
145: Barnegat Light, 26th St.		28.38	-43.37	9.75	-3.89
144: Loveladies, La Baia St.		5.34	-16.55	-5.29	-12.63
143: Harvey Cedars, 73rd St.		-15.37	-33.13	104.24	54.79
142: Harvey Cedars, Tranquility Drive		9.99	22.61	62.38	96.22
241: Surf City, 20th St.		12.25	-1.78	35.18	48.94
141: Ship Bottom, 8th St.		0.43	-50.74	54.22	6.78
140: Long Beach Township, 32nd St.		14.98	-61.45	135.50	89.82
139: Long Beach Township, 81st St.		6.99	12.27	-8.70	12.90
138: Long Beach Township, Old Whaling Rd.		14.84	54.11	-17.59	51.32
137: Beach Haven, Taylor Ave.		-4.54	35.07	0.34	30.32
136: Beach Haven, Dolphin Ave.		-7.95	-34.70	30.82	-12.25
135: Long Beach Township, Webster Ave.		5.78	-41.69	14.02	-21.89
234: Long Beach Township, Border w/ Refuge		-32.75	124.89	-76.62	13.80
VOLUME CHANGES for OCEAN CO.	Survey	44-45	45-46	46-47	44-47
		(cu yds/ft)	(cu yds/ft)	(cu yds/ft)	(cu yds/ft)
SUM of SAND VOLUMES for 28 SITES		48.05	-299.47	428.24	184.37
AVERAGE SAND VOLUME per SITE		1.72	-10.70	15.29	6.58
Northern Ocean Co. Sand Volume Change		33.12	-280.54	78.49	-175.54
Average Northern Ocean Co. Volume Change		2.37	-20.04	5.61	-12.54
Long Beach Island Sand Volume Change		61.33	-55.11	347.67	365.86
Average Long Beach Island Volume Change		4.38	-3.94	24.83	26.13

TABLE 10
OCEAN COUNTY
SEASONAL SHORELINE CHANGES

	Survey	44-45	45-46	46-47	44-47
PROFILE SITE		S12-F12	F12-S13	S13-F13	S12-F13
LOCATION		(shoreline change expressed in feet)			
156: Point Pleasant, Water St.		15.88	-130.11	83.40	-30.83
155: Point Pleasant, Maryland Ave.		-9.96	-53.97	37.91	-25.84
154: Bay Head, Johnson Ave.		2.30	-85.80	66.06	-17.44
153: Mantoloking, 1117 Ocean Ave.		-11.11	-91.85	70.01	-32.94
152: Brick Township, Public Beach		-12.73	-66.20	59.95	-18.98
151: Normandy Beach, 1st Ave		8.33	-58.40	55.38	5.30
150: Lavallette, White Ave.		56.06	-91.79	53.24	17.51
149: Ortley Beach, 8th Ave.		-15.51	-63.11	-18.88	-97.51
248: Seaside, Franklin Ave.		-14.23	-68.90	51.38	-31.75
148: Seaside Park, 4th Ave.		-17.40	-25.76	26.81	-16.36
347: Berkeley Township, 6th Ave.		-29.09	-6.36	16.73	-18.72
247: Island Beach State Park, North		-25.84	-58.81	31.85	-52.80
246: Island Beach State Park, Middle		-82.89	-56.66	88.28	-51.28
146: Island Beach State Park, South		-180.07	60.46	44.62	-74.98
245: Barnegat Light, 10th St.		39.98	-38.49	8.43	9.92
145: Barnegat Light, 26th St.		18.00	-86.84	56.21	-12.64
144: Loveladies, La Baia St.		48.22	-117.41	32.64	-36.55
143: Harvey Cedars, 73rd St.		25.20	-119.43	222.19	127.96
142: Harvey Cedars, Tranquility Drive		52.86	-34.52	189.56	207.91
241: Surf City, 20th St.		21.12	-43.75	141.83	119.21
141: Ship Bottom, 8th St.		-5.37	-77.72	90.96	7.86
140: Long Beach Township, 32nd St.		14.47	-163.96	246.04	96.56
139: Long Beach Township, 81st St.		5.83	-34.28	37.92	9.47
138: Long Beach Township, Old Whaling Rd.		12.66	19.31	-6.13	25.84
137: Beach Haven, Taylor Ave.		-17.07	35.83	23.71	42.47
136: Beach Haven, Dolphin Ave.		16.28	-44.22	48.75	20.82
135: Long Beach Township, Webster Ave.		9.80	-93.48	48.92	-34.76
234: Long Beach Township, Border w/Refuge		-29.99	128.16	17.27	115.45
SHORELINE CHANGES for OCEAN CO	Survey	44-45	45-46	46-47	44-47
		(feet)	(feet)	(feet)	(feet)
SUM of SHORELINE CHANGES for 28 SITES		-104.27	-1468.06	1825.04	252.90
AVERAGE SHORELINE CHANGE per SITE		-3.72	-52.43	65.18	9.03
Northern Ocean Co. Shoreline Change		▲ -136.19	▲ -857.72	▲ 622.12	▲ -371.64
Average Northern Ocean Co. Shoreline Change		-9.73	-61.27	44.44	-26.55
Long Beach Island Shoreline Change		▲ 211.99	▲ -670.80	▲ 1158.30	▲ 699.52
Average Long Beach Island Shoreline Change		15.14	-47.91	82.74	49.97

TABLE 11				
ATLANTIC COUNTY				
ANNUAL BEACH VOLUME CHANGES				
SPRING 2012 - SPRING 2013 & FALL 2012 - FALL 2013				
			Survey	
		44 - 46		45 - 47
PROFILE SITE		S2012-S2013		F2012 - F2013
LOCATION		(volume expressed as cubic yards per foot)		
134: Brigantine, Green Acres		-39.99		-74.27
133: Brigantine, 4th Street North		80.93		45.20
132: Brigantine, 15th Street South		32.04		-13.00
131: Brigantine, 43rd Street South		-20.26		-18.84
230: Atlantic City, Rhode Island Ave.		-26.08		120.41
130: Atlantic City, North Carolina Ave.		-23.70		13.83
129: Atlantic City, Raleigh Ave.		-41.26		36.15
128: Ventnor City, Dorset Ave.		22.22		37.73
127: Margate City, Benson Ave.		-30.09		28.27
126: Longport, 17th St.		-3.29		11.76

TABLE 12				
ATLANTIC COUNTY				
ANNUAL SHORELINE CHANGES				
SPRING 2012 - SPRING 2013 & FALL 2012 - FALL 2013				
			Survey	
		44 - 46		45 - 47
PROFILE SITE		S2012-S2013		F2012 - F2013
LOCATION		(shoreline change expressed in feet)		
134: Brigantine, Green Acres		-28.9		-42.1
133: Brigantine, 4th Street North		103.1		141.1
132: Brigantine, 15th Street South		14.6		12.7
131: Brigantine, 43rd Street South		-15.8		-117.7
230: Atlantic City, Rhode Island Ave.		288.5		193.9
130: Atlantic City, North Carolina Ave.		-68.5		-9.3
129: Atlantic City, Raleigh Ave.		-80.2		21.3
128: Ventnor City, Dorset Ave.		58.9		91.6
127: Margate City, Benson Ave.		-52.0		18.8
126: Longport, 17th St.		-67.8		34.9

TABLE 13					
ATLANTIC COUNTY					
SEASONAL BEACH VOLUME CHANGES					
	Survey	44-45	45-46	46-47	44-47
PROFILE SITE		S12-F12	F12-S13	S13-F13	S12-F13
LOCATION	(volume expressed as cubic yards per foot of beachfront)				
134: Brigantine, Green Acres		18.78	-58.80	-15.44	-55.76
133: Brigantine, 4th Street North		5.51	75.16	-29.07	50.77
132: Brigantine, 15th Street South		5.89	26.23	-39.95	-6.90
131: Brigantine, 43rd Street South		13.19	-31.63	12.42	-6.60
230: Atlantic City, Rhode Island Ave.		-30.46	1.12	155.86	8.54
130: Atlantic City, North Carolina Ave.		12.92	-36.51	49.64	26.27
129: Atlantic City, Raleigh Ave.		-2.22	-38.60	73.85	33.49
128: Ventnor City, Dorset Ave.		34.83	-12.51	50.68	72.29
127: Margate City, Benson Ave.		-32.99	3.73	24.63	-5.48
126: Longport, 17th St.		2.95	-6.21	18.44	14.68

TABLE 14					
ATLANTIC COUNTY					
SEASONAL SHORELINE CHANGES					
	Survey	44-45	45-46	46-47	44-47
PROFILE SITE		S12-F12	F12-S13	S13-F13	S12-F13
LOCATION	(shoreline change expressed in feet)				
134: Brigantine, Green Acres		1.7	-30.6	-11.5	-40.4
133: Brigantine, 4th Street North		-54.5	157.6	-16.5	86.6
132: Brigantine, 15th Street South		-62.9	77.5	-64.8	-50.2
131: Brigantine, 43rd Street South		-18.6	2.8	-120.6	-136.3
230: Atlantic City, Rhode Island Ave.		309.1	-20.6	214.4	502.9
130: Atlantic City, North Carolina Ave.		41.9	-110.4	101.1	32.6
129: Atlantic City, Raleigh Ave.		-42.9	-37.3	58.5	-21.6
128: Ventnor City, Dorset Ave.		36.5	22.4	69.2	128.1
127: Margate City, Benson Ave.		-47.8	-4.1	22.9	-29.1
126: Longport, 17th St.		-24.1	-43.7	78.6	10.8

TABLE 15				
CAPE MAY COUNTY				
ANNUAL BEACH VOLUME CHANGES				
SPRING 2012 - SPRING 2013 & FALL 2012 - FALL 2013				
		Survey		
		44 - 46		45 - 47
PROFILE SITE		S2012-S2013		F2012 - F2013
LOCATION		(volume expressed as cubic yards per foot)		
225: Ocean City, Gardens Rd.		115.39		77.88
125: Ocean City, 6th St.		208.54		138.00
124: Ocean City, 20th St.		-19.91		-19.96
223: Ocean City, 34th St.		-42.02		-18.04
122: Ocean City, 56th St.		2.21		-9.26
222: Ocean City, 59th St.		-24.43		31.10
221: Corson's Inlet Park, Ocean City		61.31		34.52
121: Strathmere, Williams Rd.		7.93		-9.05
120: Sea Isle City, 1st St.		-24.68		-10.66
119: Sea Isle City, 25th St.		20.51		17.01
118: Sea Isle City, 57th St.		3.32		3.75
117: Sea Isle City, 80th St.		-21.66		-40.27
216: Avalon, 9th St.		-15.77		-22.75
116: Avalon, 23rd St.		14.75		-39.85
115: Avalon, 35th St.		35.70		15.91
114: Avalon, 70th St.		-43.31		-61.32
113: Stone Harbor, 90th St.		-48.89		31.75
212: Stone Harbor, 121st St.		38.46		5.87
112: Stone Harbor, South Pointe		** NO LONGER ACTIVE **		
111: North Wildwood, 15th Ave.		-83.56		-58.40
110: Wildwood, Cresse Ave.		6.44		0.54
109: Lower Township, Raleigh Ave.		-39.46		-3.62
208: Lower Township, U.S.C.G. Base		14.46		-9.58
108: Cape May, Beach Club		-18.54		-24.09
107: Cape May, Baltimore Ave.		34.25		26.45
206: Cape May, Broadway Ave.		-42.10		-45.60
105: Cape May, Nature Conservancy		110.17		67.51
104: Cape May Point, Lake Dr.		45.46		16.61
103: Higbee Beach State Park		-2.58		-2.84
102: North Cape May, Whittier		-7.16		5.40
201: Villas, Pacific Ave.		8.23		-0.02
100: Reeds Beach, Beach Ave.		7.88		-0.44

TABLE 16				
CAPE MAY COUNTY				
ANNUAL SHORELINE CHANGES				
SPRING 2012 - SPRING 2013 & FALL 2012 - FALL 2013				
		Survey		
		44 - 46		45 - 47
PROFILE SITE		S2012-S2013		F2012 - F2013
LOCATION		(shoreline change expressed in feet)		
225:	Ocean City, Gardens Rd.	150.2		131.7
125:	Ocean City, 6th St.	240.3		105.7
124:	Ocean City, 20th St.	42.1		-104.2
223:	Ocean City, 34th St.	-108.5		-38.3
122:	Ocean City, 56th St.	-88.3		24.6
222:	Ocean City, 59th St.	-32.0		37.2
221:	Corson's Inlet Park, Ocean City	18.0		112.1
121:	Strathmere, Williams Rd.	-54.3		32.7
120:	Sea Isle City, 1st St.	-76.9		22.1
119:	Sea Isle City, 25th St.	37.7		-125.4
118:	Sea Isle City, 57th St.	26.5		-63.8
117:	Sea Isle City, 80th St.	12.1		-59.8
216:	Avalon, 9th St.	-18.6		-1.3
116:	Avalon, 23rd St.	56.3		-18.1
115:	Avalon, 35th St.	83.0		106.7
114:	Avalon, 70th St.	-44.8		-89.3
113:	Stone Harbor, 90th St.	-93.1		9.2
212:	Stone Harbor, 121st St.	38.8		-26.9
112:	Stone Harbor, South Pointe	** NO LONGER ACTIVE **		
111:	North Wildwood, 15th Ave.	-163.0		-113.7
110:	Wildwood, Cresse Ave.	-57.6		32.1
109:	Lower Township, Raleigh Ave.	-69.3		-44.7
208:	Lower Township, U.S.C.G. Base	-61.4		16.2
108:	Cape May, Beach Club	-20.8		-11.5
107:	Cape May, Baltimore Ave.	30.4		31.7
206:	Cape May, Broadway Ave.	-69.8		-53.2
105:	Cape May, Nature Conservancy	150.3		75.6
104:	Cape May Point, Lake Dr.	52.9		5.6
103:	Higbee Beach State Park	2.1		-9.9
102:	North Cape May, Whhittier	-12.8		-8.2
201:	Villas, Pacific Ave.	18.4		-2.3
100:	Reeds Beach, Beach Ave.	-5.3		-3.4

TABLE 17							
CAPE MAY COUNTY							
SEASONAL BEACH VOLUME CHANGES							
	Survey	44-45	45-46	46-47	44-47		
PROFILE SITE		S12-F12	F12-S13	S13-F13	S12-F13		
LOCATION		(volume expressed as cubic yards per foot of beachfront)					
225: Ocean City, Gardens Rd.		24.29	91.44	-13.79	101.67		
125: Ocean City, 6th St.		6.64	193.10	-61.23	150.37		
124: Ocean City, 20th St.		1.43	-20.66	0.20	-18.22		
223: Ocean City, 34th St.		-18.97	-22.60	5.17	-37.43		
122: Ocean City, 56th St.		2.16	-2.14	-5.20	-4.82		
222: Ocean City, 59th St.		-40.81	17.78	15.23	-9.26		
221: Corson's Inlet Park, Ocean City		26.19	34.27	0.66	64.96		
121: Strathmere, Williams Rd.		-24.03	28.25	-43.60	-33.04		
120: Sea Isle City, 1st St.		4.99	-32.38	21.10	-5.17		
119: Sea Isle City, 25th St.		13.26	7.17	9.50	30.29		
118: Sea Isle City, 57th St.		7.52	-3.73	7.47	10.92		
117: Sea Isle City, 80th St.		-6.14	-15.51	-24.71	-46.36		
216: Avalon, 9th St.		-23.31	16.74	-42.84	-58.31		
116: Avalon, 23rd St.		4.34	-4.77	-52.68	-37.28		
115: Avalon, 35th St.		18.92	14.21	2.94	38.57		
114: Avalon, 70th St.		24.14	-72.55	10.35	-34.23		
113: Stone Harbor, 90th St.		-4.38	-44.56	75.85	29.08		
212: Stone Harbor, 121st St.		-3.62	42.31	-36.49	2.06		
112: Stone Harbor, South Pointe		** NO LONGER ACTIVE **					
111: North Wildwood, 15th Ave.		-52.10	-31.22	-27.26	-110.59		
110: Wildwood, Cresse Ave.		22.83	-20.54	19.88	24.65		
109: Lower Township, Raleigh Ave.		-24.67	-14.00	10.91	-28.19		
208: Lower Township, U.S.C.G. Base		28.95	-13.86	3.32	19.10		
108: Cape May, Beach Club		-4.61	-14.40	-9.65	-29.78		
107: Cape May, Baltimore Ave.		-3.42	37.81	-11.24	23.02		
206: Cape May, Broadway Ave.		-20.79	-20.96	-23.89	-66.55		
105: Cape May, Nature Conservancy		-22.84	133.00	-65.44	44.73		
104: Cape May Point, Lake Dr.		8.39	36.52	-22.93	25.27		
103: Higbee Beach State Park		3.85	-6.44	3.62	0.95		
102: North Cape May, Whittier Ave.		-6.95	-0.48	4.92	-1.28		
201: Villas, Pacific Ave.		4.73	3.48	-3.49	4.73		
100: Reeds Beach, Beach Ave.		-0.80	8.70	-9.13	-1.23		

TABLE 18

CAPE MAY COUNTY

SEASONAL SHORELINE CHANGES

	Survey	44-45	45-46	46-47	44-47
PROFILE SITE		S12-F12	F12-S13	S13-F13	S12-F13
LOCATION		(shoreline change expressed in feet)			
225: Ocean City, Gardens Rd.		-5.0	155.3	-23.5	126.7
125: Ocean City, 6th St.		1.1	239.2	-133.5	106.8
124: Ocean City, 20th St.		65.1	-23.0	-81.2	-39.1
223: Ocean City, 34th St.		-39.4	-69.1	30.7	-77.7
122: Ocean City, 56th St.		-33.6	-54.7	79.3	-9.0
222: Ocean City, 59th St.		-27.5	-4.5	41.7	9.7
221: Corson's Inlet Park, Ocean City		-57.2	75.2	36.9	54.9
121: Strathmere, Williams Rd.		-133.8	79.6	-46.9	-101.2
120: Sea Isle City, 1st St.		-28.5	-48.4	70.5	-6.4
119: Sea Isle City, 25th St..		52.8	-15.1	-110.3	-72.6
118: Sea Isle City, 57th St..		-7.0	33.5	-97.3	-70.8
117: Sea Isle City, 80th St..		23.9	-11.8	-48.0	-35.9
216: Avalon, 9th St.		-61.4	42.8	-44.1	-62.7
116: Avalon, 23rd St.		-2.4	58.6	-76.8	-20.5
115: Avalon, 35th St.		52.1	31.0	75.7	158.8
114: Avalon, 70th St.		34.2	-79.0	-10.3	-55.1
113: Stone Harbor, 90th St.		-20.7	-72.4	81.6	-11.5
212: Stone Harbor, 121st St.		7.3	31.6	-58.5	-19.6
112: Stone Harbor, South Pointe			** NO LONGER ACTIVE **		
111: North Wildwood, 15th Ave.		-68.4	-94.6	-19.1	-182.1
110: Wildwood, Cresse Ave.		-59.7	2.1	30.0	-27.6
109: Lower Township, Raleigh Ave.		-34.4	-34.9	-9.8	-79.1
208: Lower Township, U.S.C.G. Base		-4.0	-57.5	73.7	12.2
108: Cape May, Beach Club		1.7	-22.5	11.0	-9.8
107: Cape May, Baltimore Ave.		12.2	18.2	13.5	43.9
206: Cape May, Broadway Ave.		-43.8	-26.0	-27.3	-97.0
105: Cape May, Nature Conservancy		-92.2	242.5	-166.8	-16.6
104: Cape May Point, Lake Dr.		25.9	27.0	-21.5	31.4
103: Higbee Beach State Park		8.2	-6.1	-3.8	-1.7
102: North Cape May, Whittier Ave.		1.2	-14.0	5.8	-7.0
201: Villas, Pacific Ave.		14.0	4.4	-6.7	11.7
100: Reeds Beach, Beach Ave.		-4.1	-1.2	-2.2	-7.4