



New Jersey Beach Profile Network

Ocean County

Manasquan Inlet
to Little Egg Inlet

NJBPN Profile #'s
156 - 234

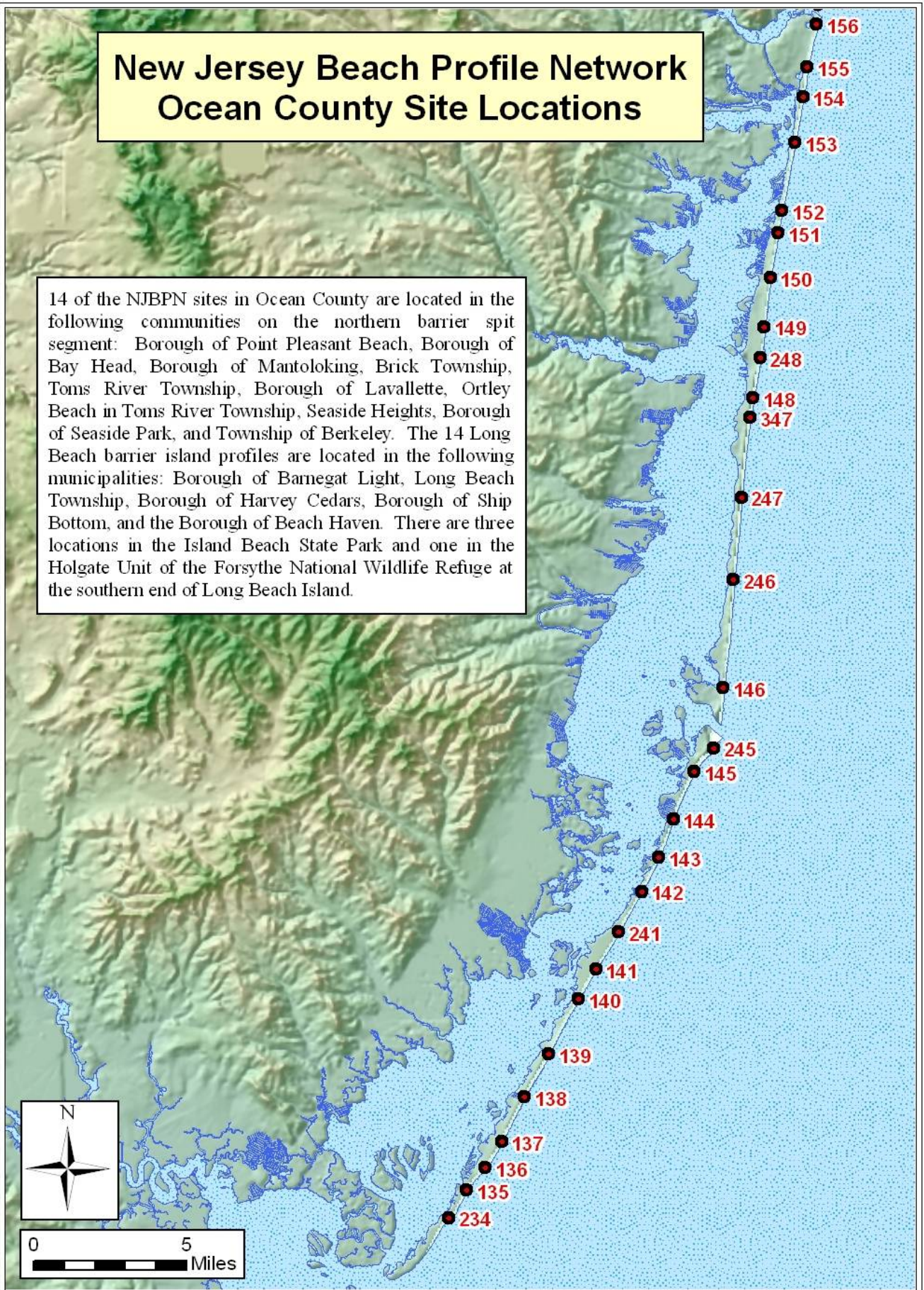


Figure 38. Locations of the 28 NJBPN profile stations in Ocean County, NJ.

Individual Site Descriptions:

Northern Ocean County experienced beach recovery approaching pre-Hurricane Sandy elevation or width, adding an average of 3.06 yds³/ft. in Northern Ocean County, but losing 15.79 yds³/ft. on average on Long Beach Island. The higher loss rate on LBI is most likely due to the redistribution of the sand placed on the three project segment beaches by the ACOE in 2013 and 2014. 24.75 yds³/ft. in new sand on the average was placed on the 14 LBI sites. Many dunes at the 28 locations surveyed are between 60 and 100% of what they were prior to the storm, with the higher percentage values again, found in the three ACOE project sites on LBI.

The US Army Corps of Engineers had completed three segments of its Long Beach Island project prior to Sandy. These included Surf City in 2007, Harvey Cedars in 2009 and Brant Beach in 2012. The berm width at 8.5 feet elevation (NAVD88 datum) was set at 100 feet accompanied by a dune with a crest elevation of 22 feet and a 25-foot width. There are 1:5 slopes landward and seaward to the existing beach and landward surfaces. The 22-foot elevation was designed to be high enough to prevent the 1% annual chance storm (100 year event) wave from over-topping the feature. The design worked as planned in all cases where the project had been completed. Comparable natural dunes with at least a 50-foot wide dry beach also prevented overwash especially in Barnegat Light Borough on the north end of Long Beach Island. There a re-alignment of the Barnegat Inlet south jetty in 1990 produced extensive beach accretion south into Loveladies greatly increasing the local storm protection.

Work continues to complete the LBI project as designed by the ACOE starting in 2000. The passage of PL 113-2 by Congress in January 2013 provided the ACOE with the authorization to complete all Authorized, but yet Unconstructed shore protection projects in New Jersey at 100% initial federal cost. The real estate issues continue to be an obstacle to moving forward on this work.

Point Pleasant Beach, Water Street and Maryland Avenue; #156 and #155;

Significant beach recovery took place, but no dune yet at Water Street. The restoration is relatively complete south of the boardwalk to the dunes. All recovery is due to natural migration of Sandy-generated deposits back toward the beach. Minimal additional sand added during 2014.

Bay Head, Johnson Avenue; #154;

The beach was enhanced by hauling as much overwash sand as possible back to restore the dunes. In addition the rock revetment started after the 1962 NE storm was extended south into Mantoloking to Cargee Street. No beach sand was pumped in beyond that hauled back from overwash deposits or moved back onto the shoreline naturally. The site lost some beach width, but maintained a sand volume equilibrium in 2014.

Mantoloking, 1117 Ocean Avenue; #153;

Route 35 work continued for months along with all types of utility work to restore the lost infrastructure. The NJ Dept. of Transportation (NJDOT) was the main sponsor of a steel vertical bulkhead constructed between the end of the rock revetment from Bay Head along the entire Mantoloking oceanfront, ending south in Brick Township. Completed at top elevation of 16.0 feet NAVD 88, this wall was initially buried in recovery sand making up a “dune” containing the wall as a core. This was promoted as a final line of defense for the NJ State highway 35. The new structure survived its first winter, but even minor storms such as the December 9, 2014 event exposed the wall for hundreds of feet as a vertical steel surface up to 10 feet high above the beach because wave action reached the structure and enhanced the erosion.

Brick Township, Public Beach #3, #152;

The steel wall extends south past this site as well, but has not been exposed since it was built. Extensive reconstruction continues on Route 35 south to Seaside Park.

Toms River Township (Normandy Beach, Ortley Beach), 1st Avenue and 8th Avenue; #151 and #149;

Overwash, dune loss and extensive structural damage occurred along this segment of Northern Ocean County. Ortley Beach was particularly hard hit. No tidal inlet breach occurred, but overwash took many homes as well as the dune and beach. Sand was hauled back to generate a dune and sand migrated back to the shoreline from Sandy-generated deposits offshore. Sand accumulation on the profiles continued during 2014 with between 8 and 10 yds³/ft. added to each one. The Normandy Beach site's shoreline retreated 20 feet while the Ortley Beach site advanced 30 feet.

Lavallette; White Avenue; #150;

Dune breaching was repaired with sand hauled back from inland and sand moved landward onto the beach naturally. The beach lost 8 yds³/ft. and the shoreline retreated 24 feet during 2014.

Seaside Heights; Franklin Avenue; #248;

Infrastructure was damaged, repaired than lost to fire. The beach saw sand move landward from offshore. Work was extensive to restore both storm damage and the fire losses during 2014, with beach gains amounting to 21.85 yds³/ft. and an 11-foot shoreline retreat.

Seaside Park; 4th Avenue; #148;

Recovery here was in the form of sand movement back to the shoreline and some dune rebuilding, which continued (19.42 yds³/ft.) adding less than a foot to the shoreline width.

Midway Beach (Berkeley Township); 6th Avenue; #347

The private dune here was wide and high enough to be an island of low damage in an otherwise devastated region. 8.36 yds³/ft. was added to the beach sand volume in 2014 with a 10-foot shoreline advance.

Island Beach State Park; Sites #247, #246, and #146;

Beach recovery from offshore sand deposits helped widen the beaches. Dune cuts were not mechanically restored and remain essentially as the storm left them. Beach sand volumes were all negative for 2014 and the shoreline position moved landward or did not change.

Barnegat Light Borough; 10th Street and 26th Street; #245 and #145;

Recovery was essentially complete since there had been little damage due to the southern orientation of the shoreline and the huge sand volume added since the jetty realignment in 1990. 10th Street lost 38.39 yds³/ft. while 26th gained 16.04 yds³/ft. The two shoreline positions performed in a similar manner with 10th Street retreating 26 feet and 26th Street advancing 23 feet.

Long Beach Township (Loveladies); La Baia Street; #144;

Loveladies recovered some beach material from offshore and restored dunes using sand hauled back to the beach. 2014 saw minimal further enhancement, but no loss either.

Harvey Cedars; 73rd Street and Tranquility Drive; #143 and #142;

The ACOE returned to place sand on the beach to restore the project to design specifications. During 2014 there was minor sand loss (-24.67 yds³/ft. and 22.18 yds³/ft.). Winter shoreline retreat was pretty extensive (-123 and -103 feet respectively).

Surf City; 20th Street; #241;

Surf City was the location of the initial Army Corps project effort in 2007. The project was restored to design specifications during 2013. During 2014, both the change in sand volume declined at this site and the shoreline position retreated due to impacts largely confined to the period between the fall 2013 survey and the spring 2014 review. The winter loss was 25.85 yds³/ft. while the spring loss was just 7.12 yds³/ft. The shoreline retreated 119 feet in the winter, but advanced 19 feet during the summer.

Ship Bottom; 8th Street; #141;

Recovery was limited to landward migration of offshore deposits created from beach and dune sand eroded in Sandy. The recovery documented last year was 54.22 yds³/ft. and was added to during the winter of 2013-2014 with 42.10 yds³/ft. The 91-foot shoreline advance last winter was improved by another 36 feet meaning that considerable sand volume returned from offshore or by moving south along the shoreline to Ship Bottom.

Long Beach Township (Brant Beach, 32nd St; #140; Beach Haven Crest, 81st St; #139; Spray Beach) Old Whaling Rd; #138;

Brant Beach was the most recent segment of LBI to receive the Army Corps beach replenishment project completed in early 2012. The ACOE restored this segment to design specifications adding 135.50 yds³/ft.

Sand hauled back to the beach from all sorts of sites where overwash transported it generating dunes from between 90% to 50% of the pre-Sandy proportions. Sand did return to the beaches from offshore, but did not continue in any extensive manner during 2014.

Beach Haven; Taylor Ave; #137 and Dolphin Ave; #136;

Both survey sites in Beach Haven suffered dune failure. Sand was hauled back to the beach to provide dune protection. The ACOE is planning to include Beach Haven to Holgate in future beach nourishment under the authorized LBI project. During 2014 both sites either lost a minor sand volume (-13.84 yds³/ft.) or gained a very small volume (2.13 yds³/ft.). Both shoreline positions retreated between 9 and 33 feet.

Long Beach Township (Holgate); Webster Ave; #135;

This location is also on the agenda for the ACOE to extend the Brant Beach project south to the terminal groin in Holgate. During 2014 the site gained 8.35 yds³/ft. with a modest advance in the shoreline position of 6 feet.

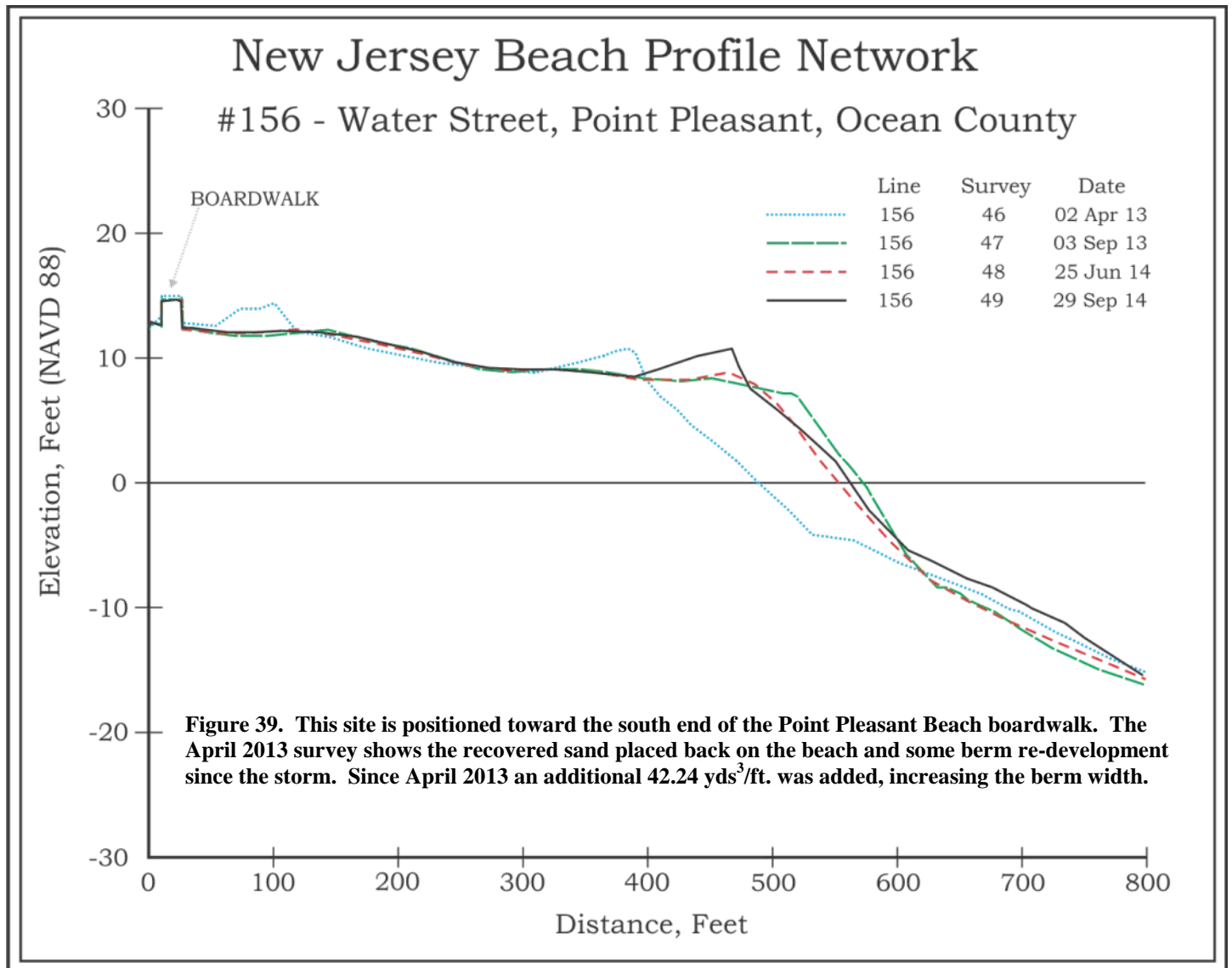
Forsythe Wildlife Refuge site; Located at the northern boundary; #234;

Total overwash occurred all along the refuge zone spread clean sand across the vegetation and into Barnegat Bay. Recovery will be slow while the shorebirds have a wide open habitat for some time. No tidal inlet breach occurred, so Long Beach Island retains its pre-Sandy dimensions. The site actually gained sand volume during the winter of 2013 to 2014 (30.95 yds³/ft.), but lost 25.93 yds³/ft. during the following summer. Shoreline position retreat was substantial at 117 feet over the entire year split 69 in the winter and 48 the following summer.

NJBPN 156 – Water Street, Point Pleasant



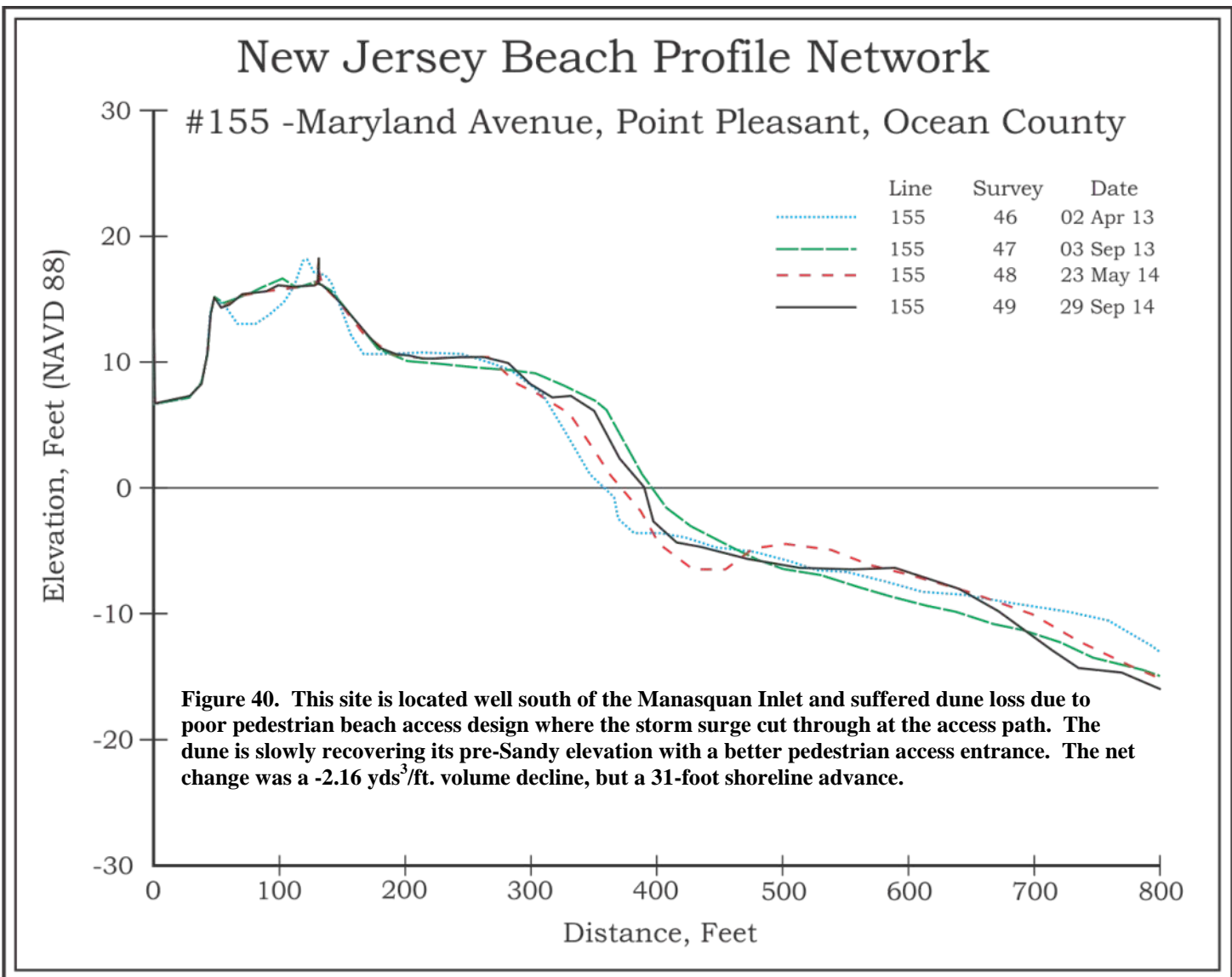
The photo on the left was taken September 3, 2013 and shows the backshore nearly a year after the storm as a result of local efforts in maintaining the shoreline. This beach is included in the proposed Federal shore protection project (Manasquan Inlet to Barnegat Inlet). By the fall of 2014, sand migration into the region accounted for a 42.24 yds³/ft. addition since April 2013 with a 73-foot shoreline advance seaward.



NJBPN 155 – Maryland Avenue, Point Pleasant



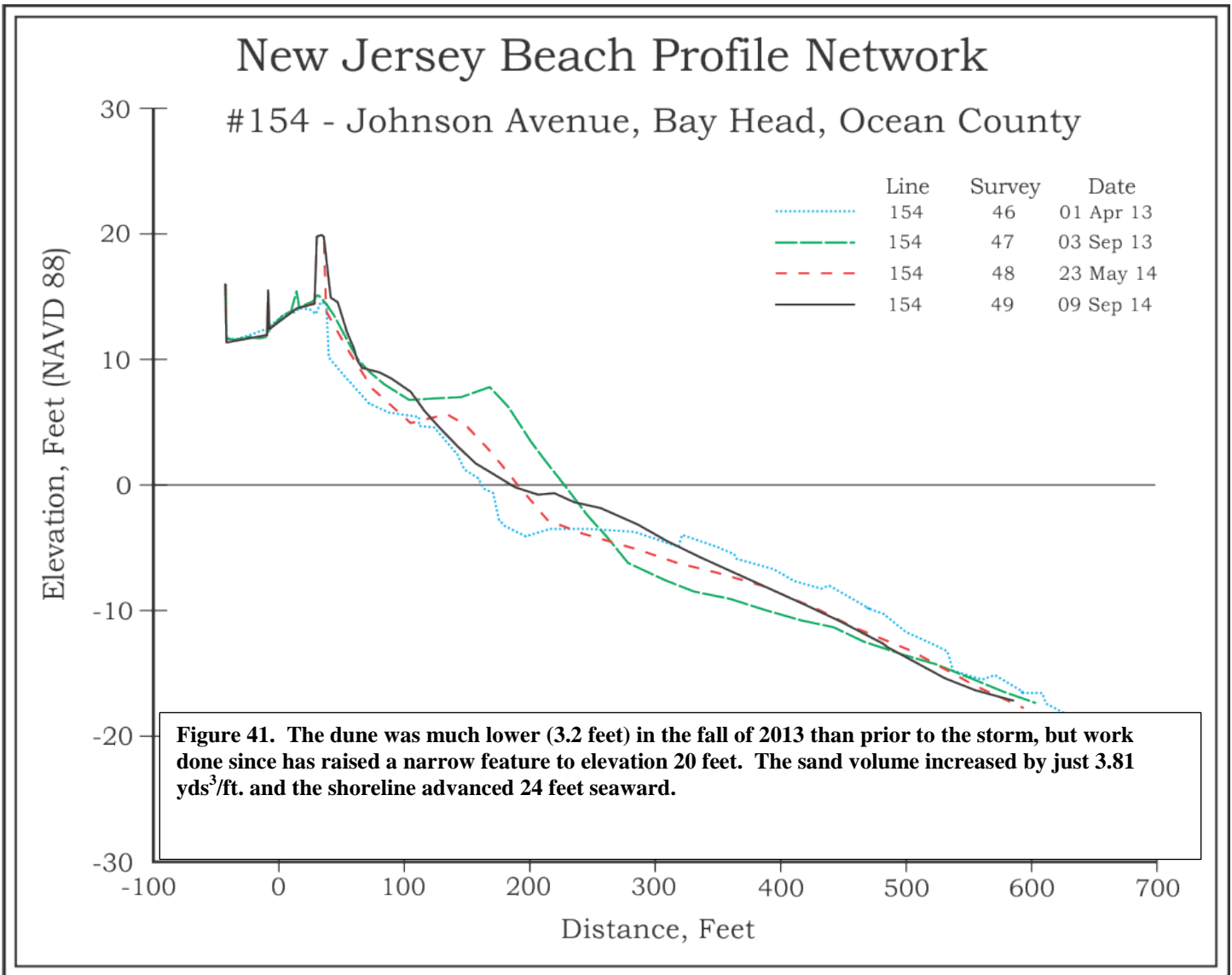
The photo on the left was taken September 3, 2013 and shows a debris-free beach with some wind-deposited sand at the dune toe. The beach continued to gain sand, losing some during the winter of 2013, but recovering not to the same position as seen in the fall of 2013.



NJBPN 154 – Johnson Avenue, Bay Head



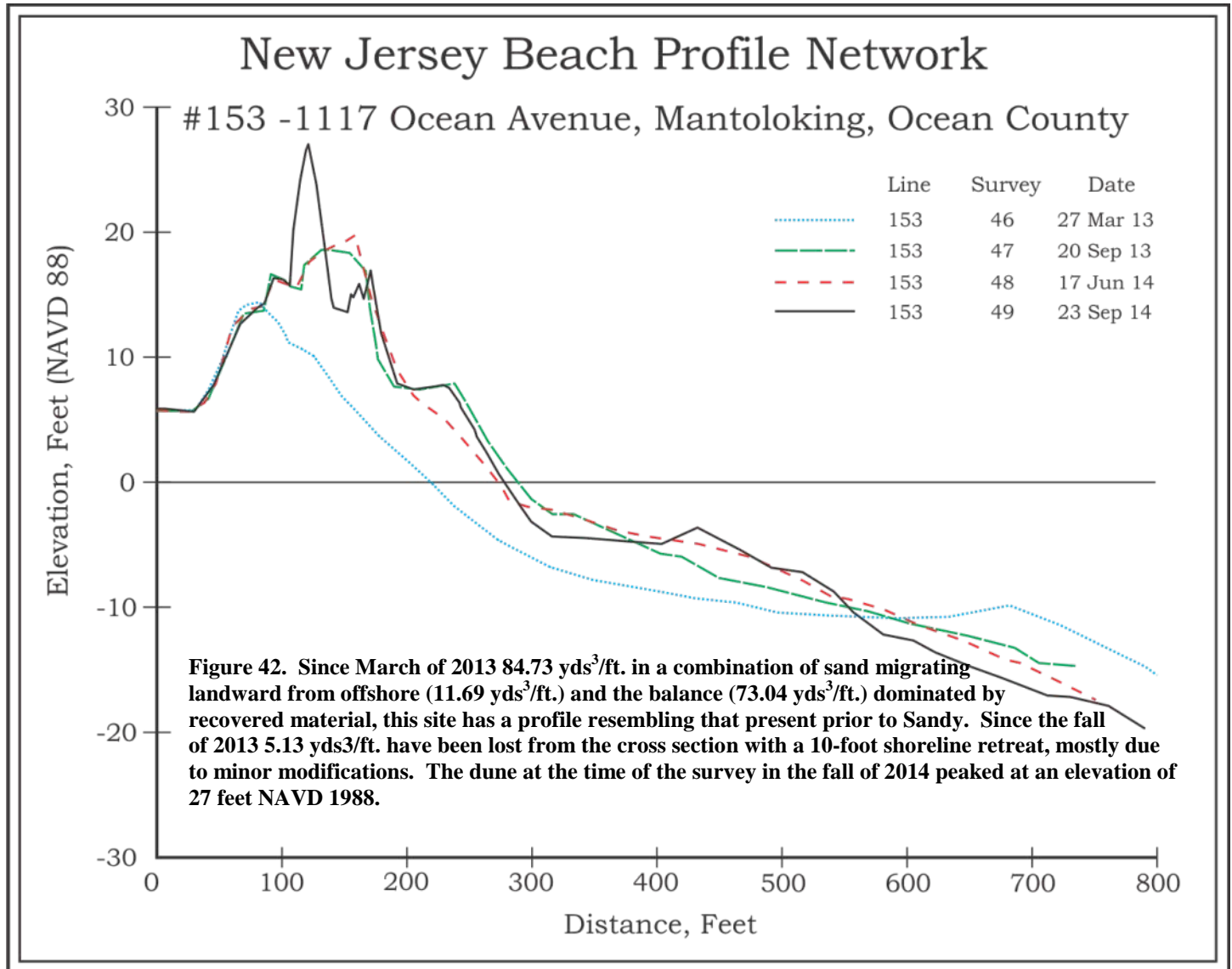
On the left, (September 3, 2013) sand recovered from the overwash deposits inland was returned to the beach to cover the rocks and raise the dune elevation. By September 29, 2014 the grass was planted and dune toe fencing was in place.



NJBPN 153 – 1117 Ocean Avenue, Mantoloking



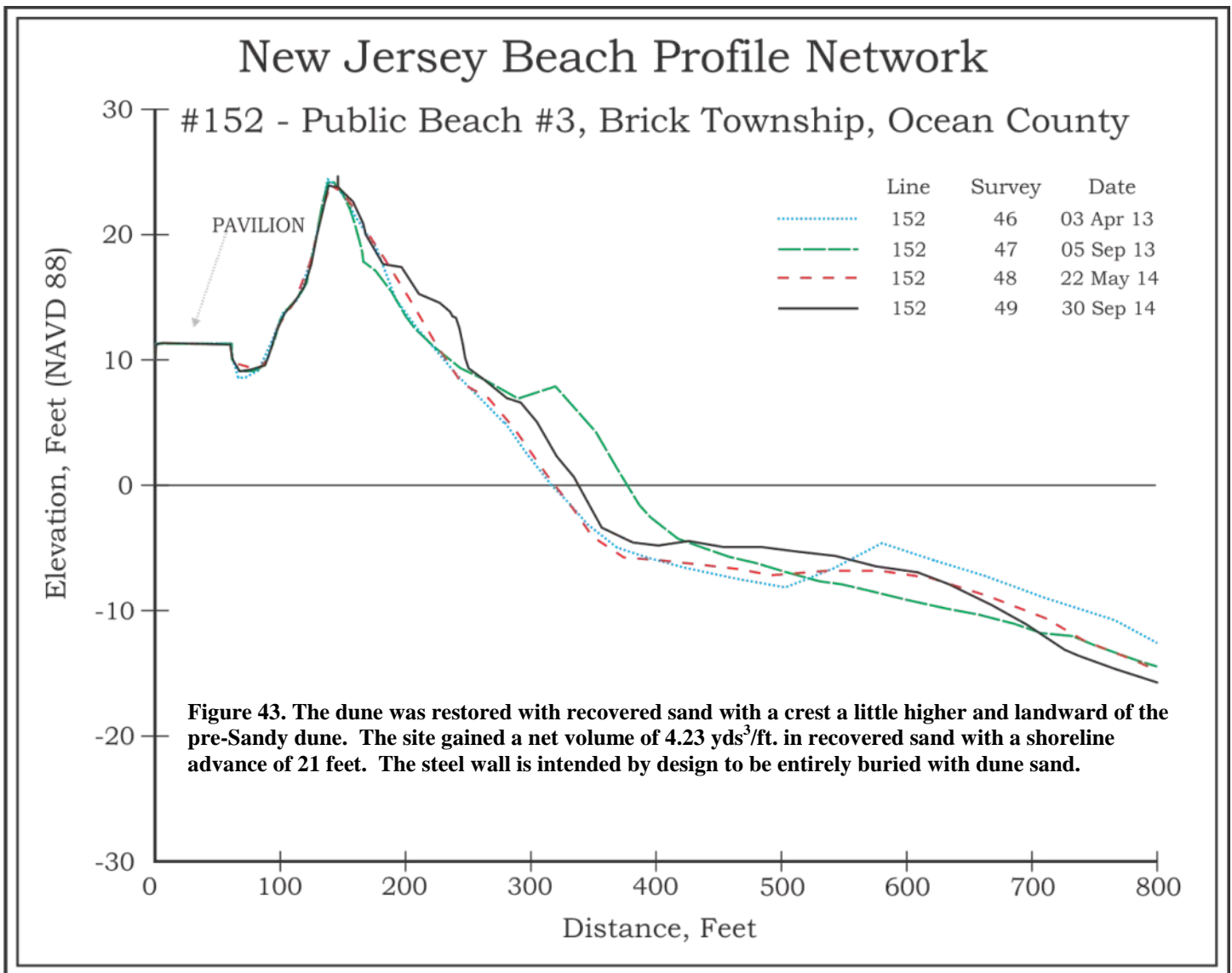
The photo on the left (September 20, 2013) shows the ridge of recovered sand from inland and that dredged from Barnegat Bay. Since then an elevation 16 foot steel wall has been installed within the core of the dune and buried with recovered sand plus that pushed up from the beach berm. Machines in the distance were at work performing these tasks on September 23rd.



NJBPN 152 – Public Beach #3, Brick Township



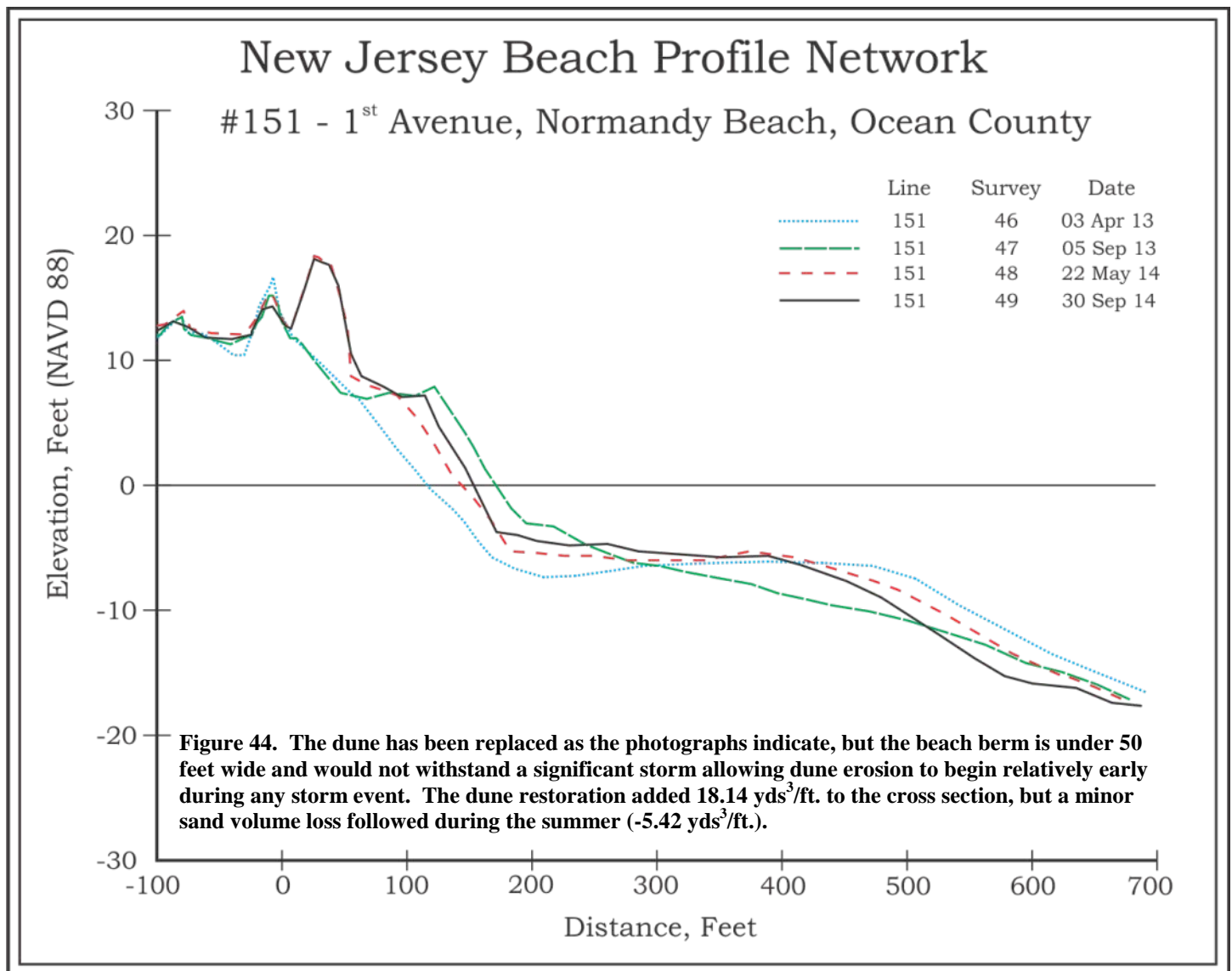
On the left (taken September 5, 2013) shows a restored dune cross section combined with a berm deposited over the summer of 2013. The fall view from September 30, 2014 shows work in progress installing the steel sheets making up the bulkhead extending south into Brick Township from near the Bay Head boundary in Mantoloking.



NJBPN 151 – 1st Avenue, Normandy Beach



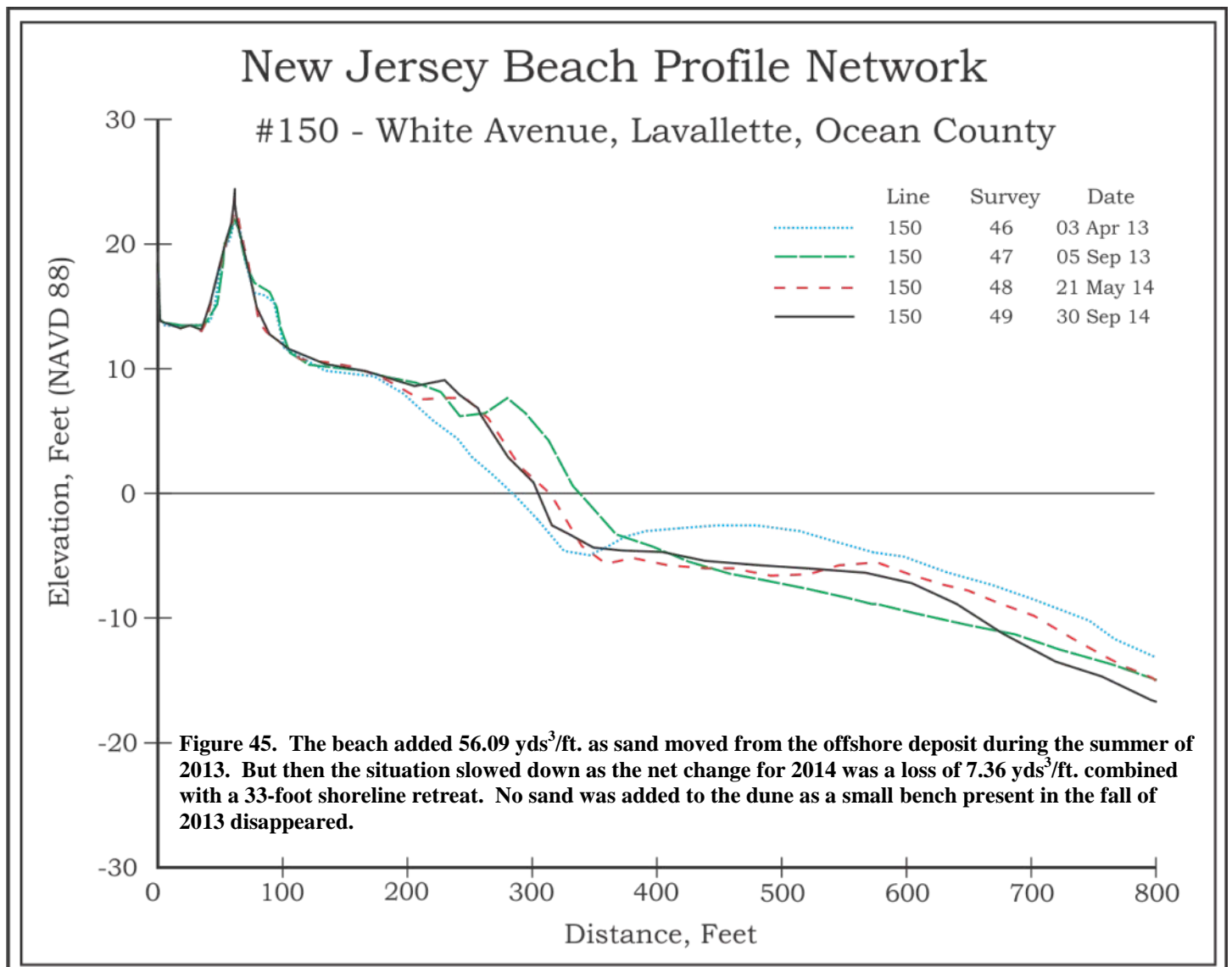
On the left (September 5, 2013), and nearly a year after Sandy, oceanfront homeowners were still in the clean-up process. The municipality pushed sand into a small continuous berm just seaward of the structures. The berm and ridge of sand were enhanced into a dune with fencing descending down to the beach which is still not very wide.



NJBPN 150 – White Avenue, Lavallette



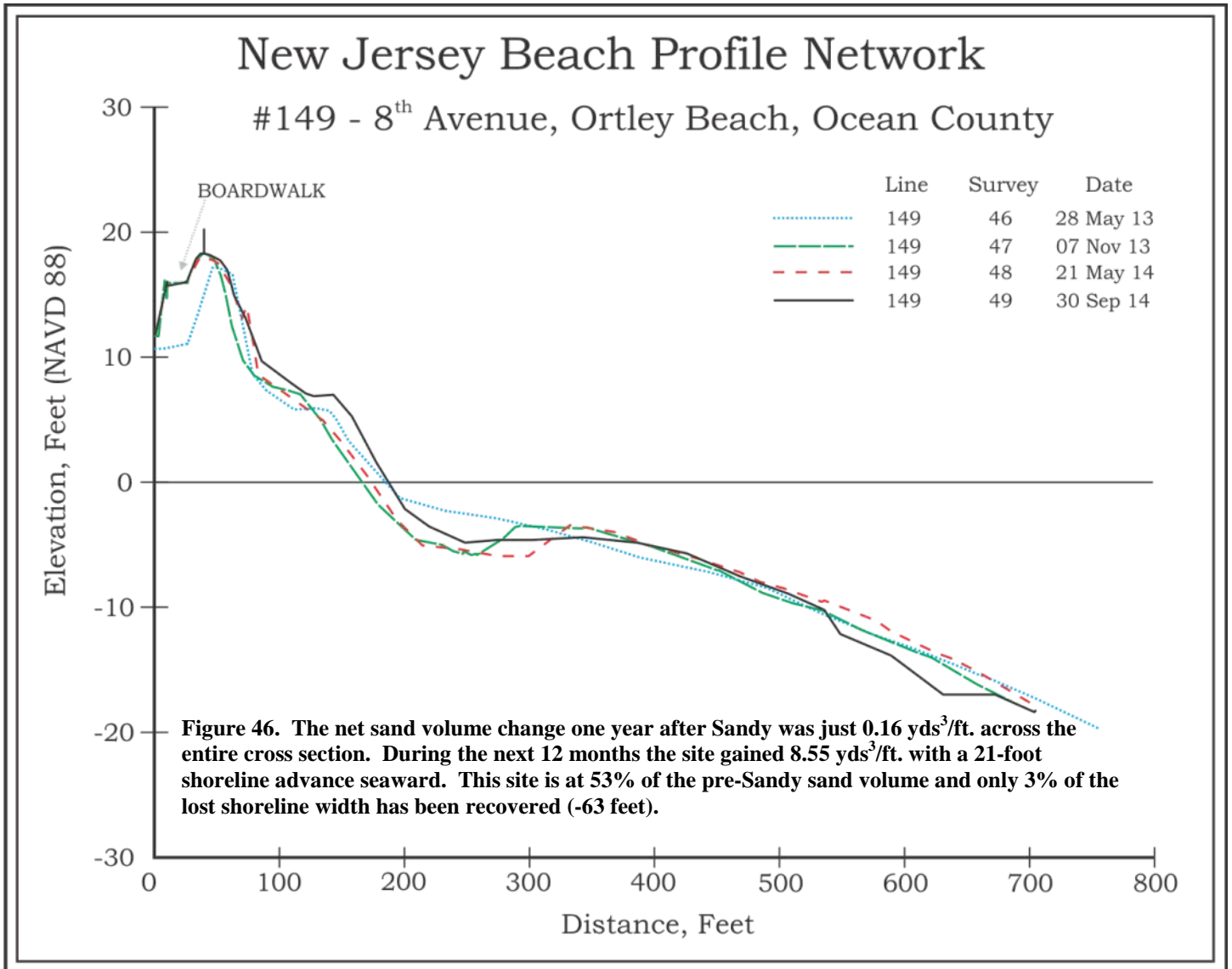
On the left (September 5, 2013), sand was pushed up against the boardwalk in an effort to maintain a continuous dune line. This effort did not continue into 2014 (September 30, 2014) as the beach was in its best condition width wise in the fall of 2013.



NJBPN 149 – 8th Avenue, Ortley Beach



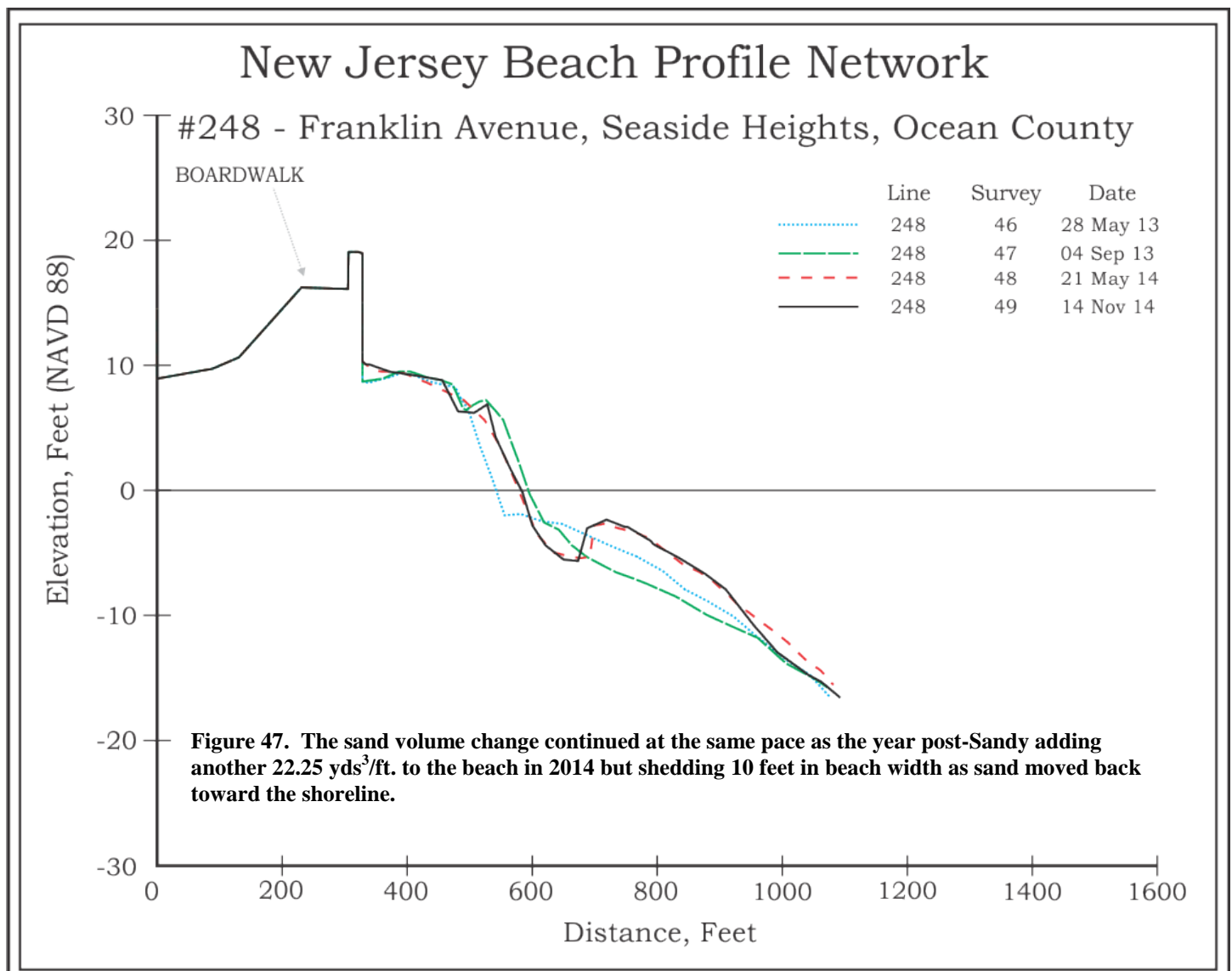
On the left, (taken November 7, 2013) the restored boardwalk was moved landward of its original position (about 25 feet) with a new dune composed of recovered sand. A year later (right) the dune has not been planted or further augmented, but the beach is a little wider.



NJBPN 248 – Franklin Avenue, Seaside Heights



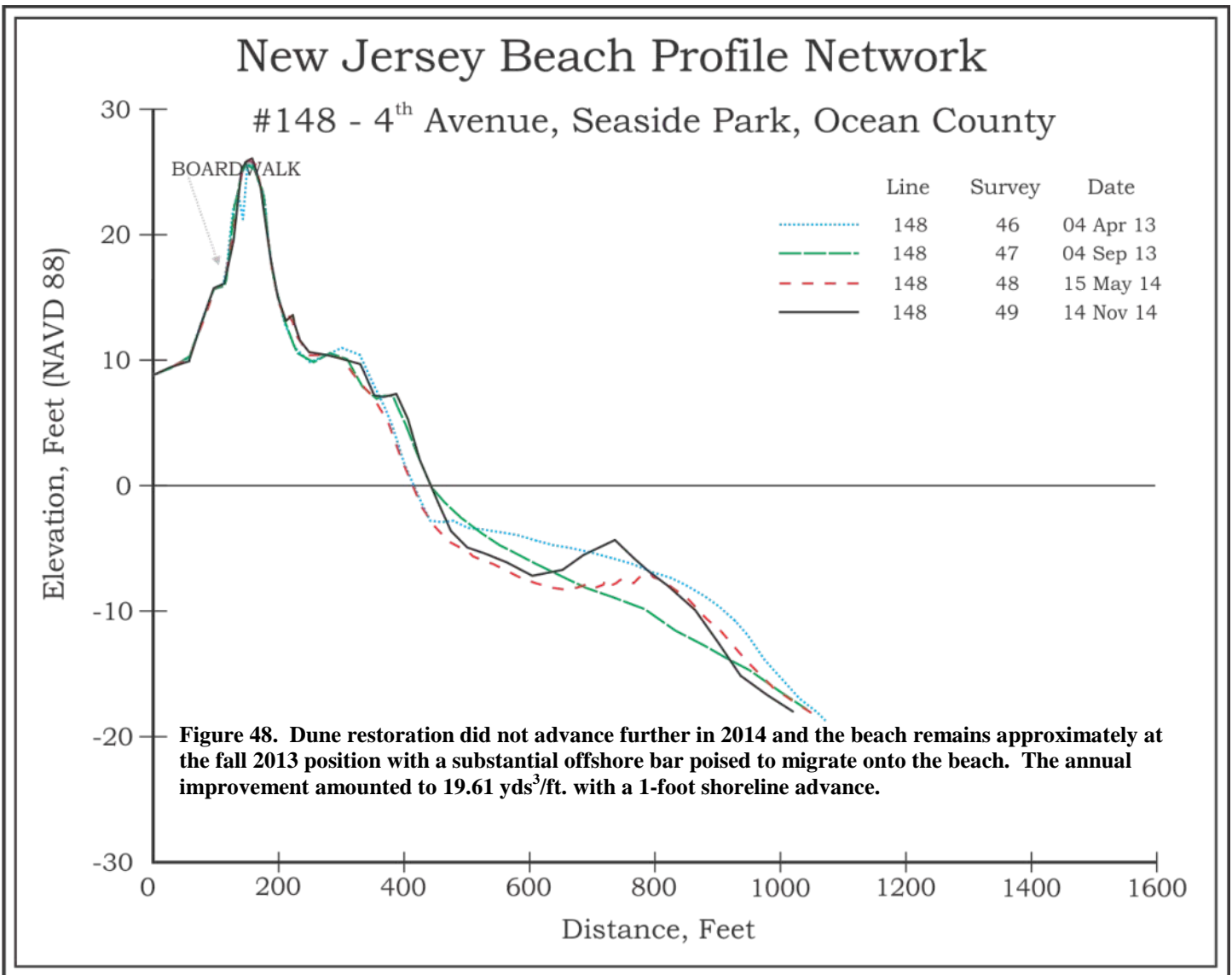
The photo on the left (taken September 4, 2013) shows the general location of the shoreline after nearly a year following the storm. Conditions did not change much during the subsequent year, but the beach is perhaps as wide as it was in the fall of 2013 if the big offshore bar shown below as part of survey #49 has migrated onto the beach.



NJBPN 148 – 4th Avenue, Seaside Park



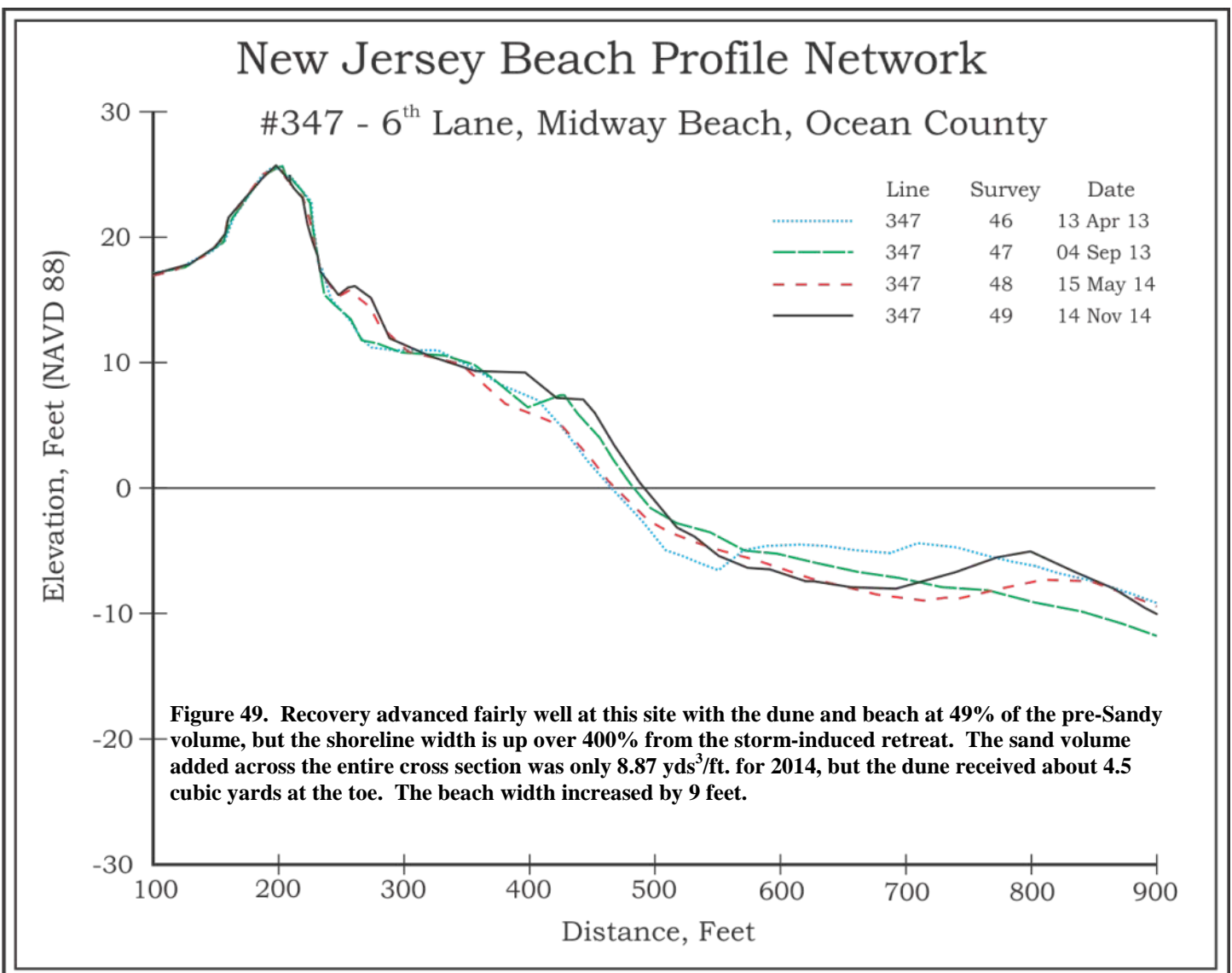
The photo on the left (taken September 4, 2013) shows the results of local efforts to restore the eroded dune and trap sand at a new dune fence system. In the subsequent year, the beach has remained constant with some minor growth in the dune.



NJBPN 347 (originally 147) – 6th Lane, Midway Beach



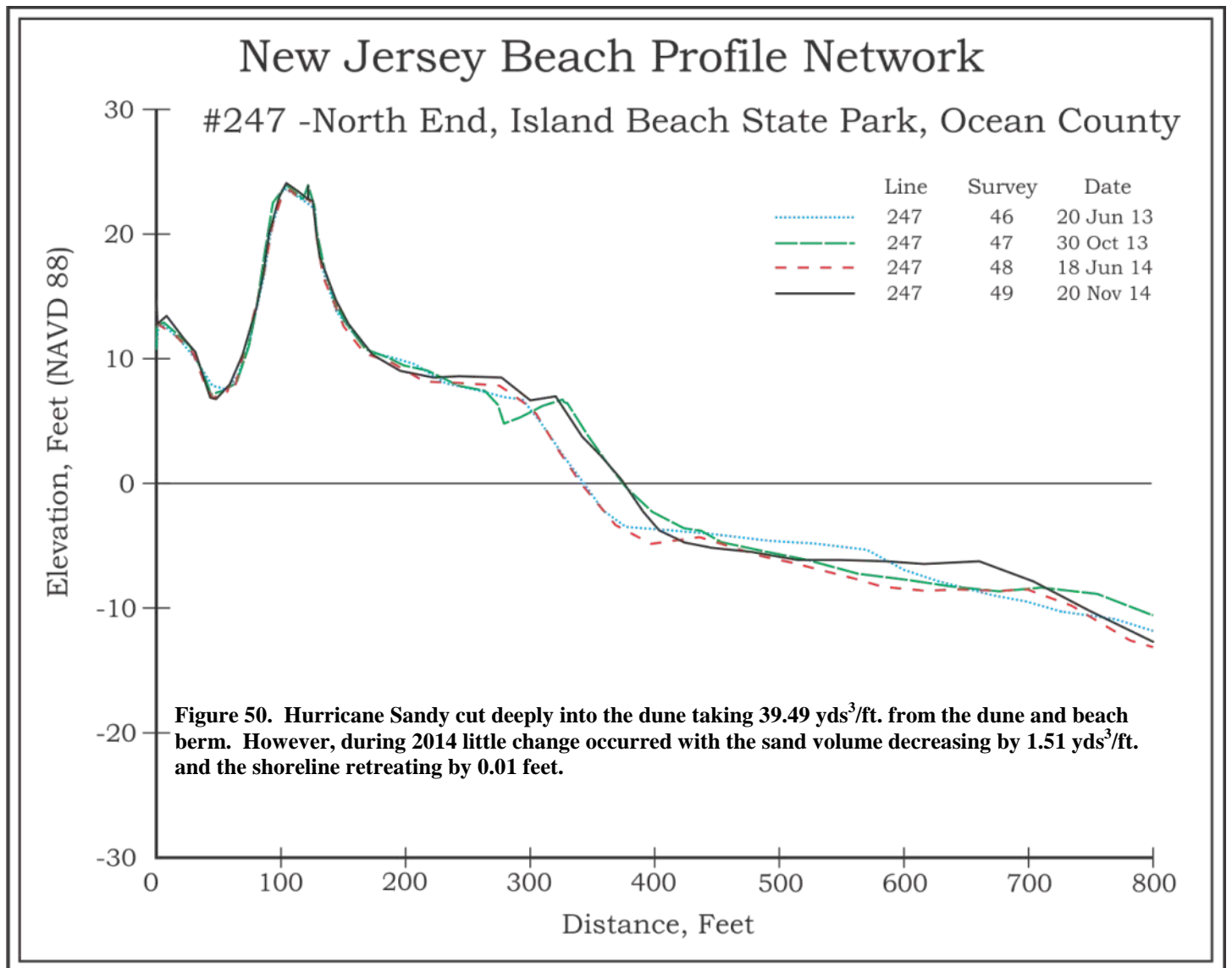
On the left (photo taken on September 4, 2013), sand fencing and dune grass plants were added to trap additional sand to allow natural dune growth. This site was a dramatic testimony to the effect local efforts in shore protection could have in preventing major storm damages. By the end of 2014 a foredune had developed at the seaward toe of the primary dune and the beach was a little wider.



NJBPN 247 – North End, Island Beach State Park



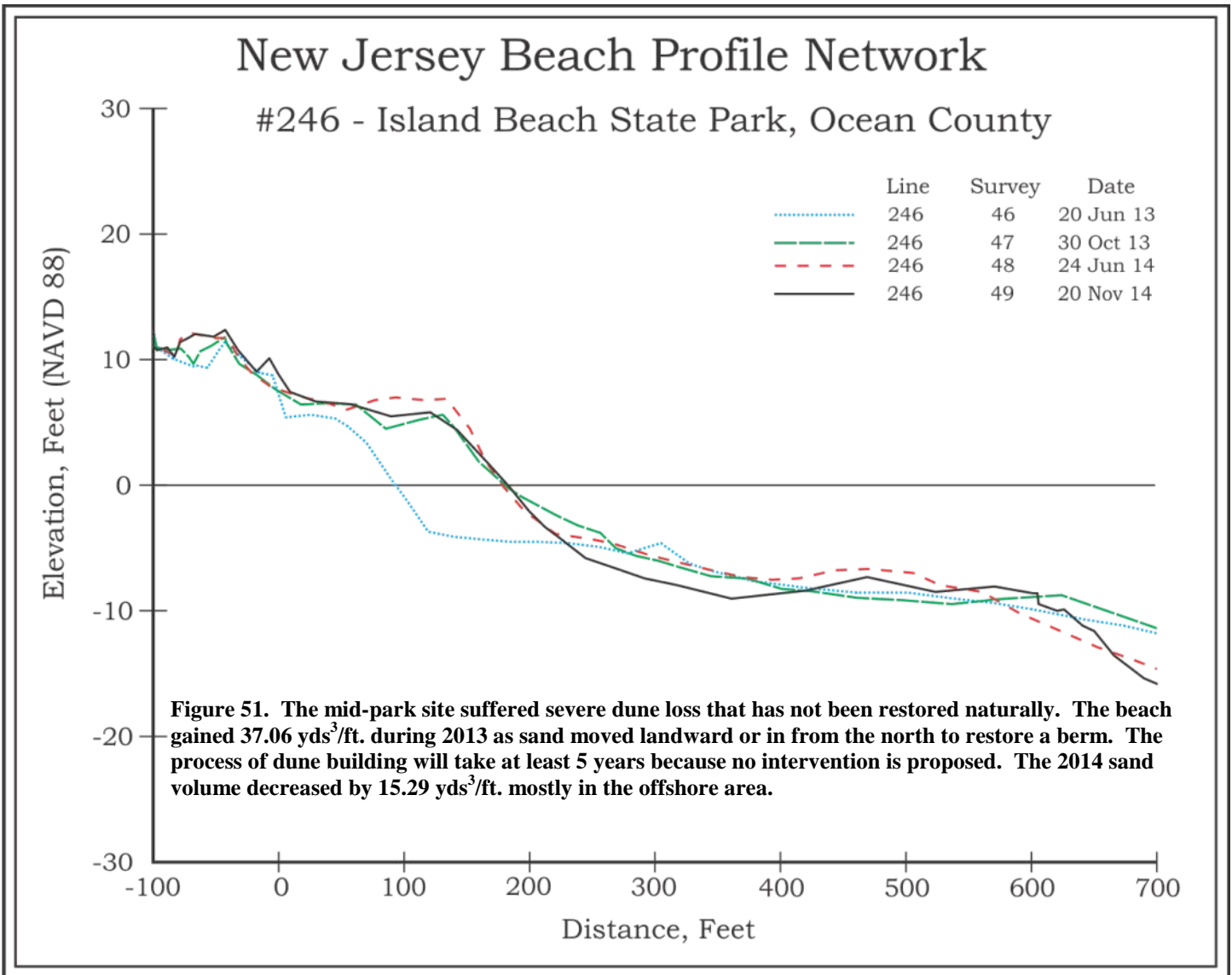
The left photo (taken October 30, 2013) shows the cut scarp in the dune system a year after Sandy that is demonstrated in the profile plots below. A year later, the scarp is still evident with some sand blown up the slope. The berm is approximately the same scale as in the fall of 2013.



NJBPN 246 – Parking Lot A7, Island Beach State Park



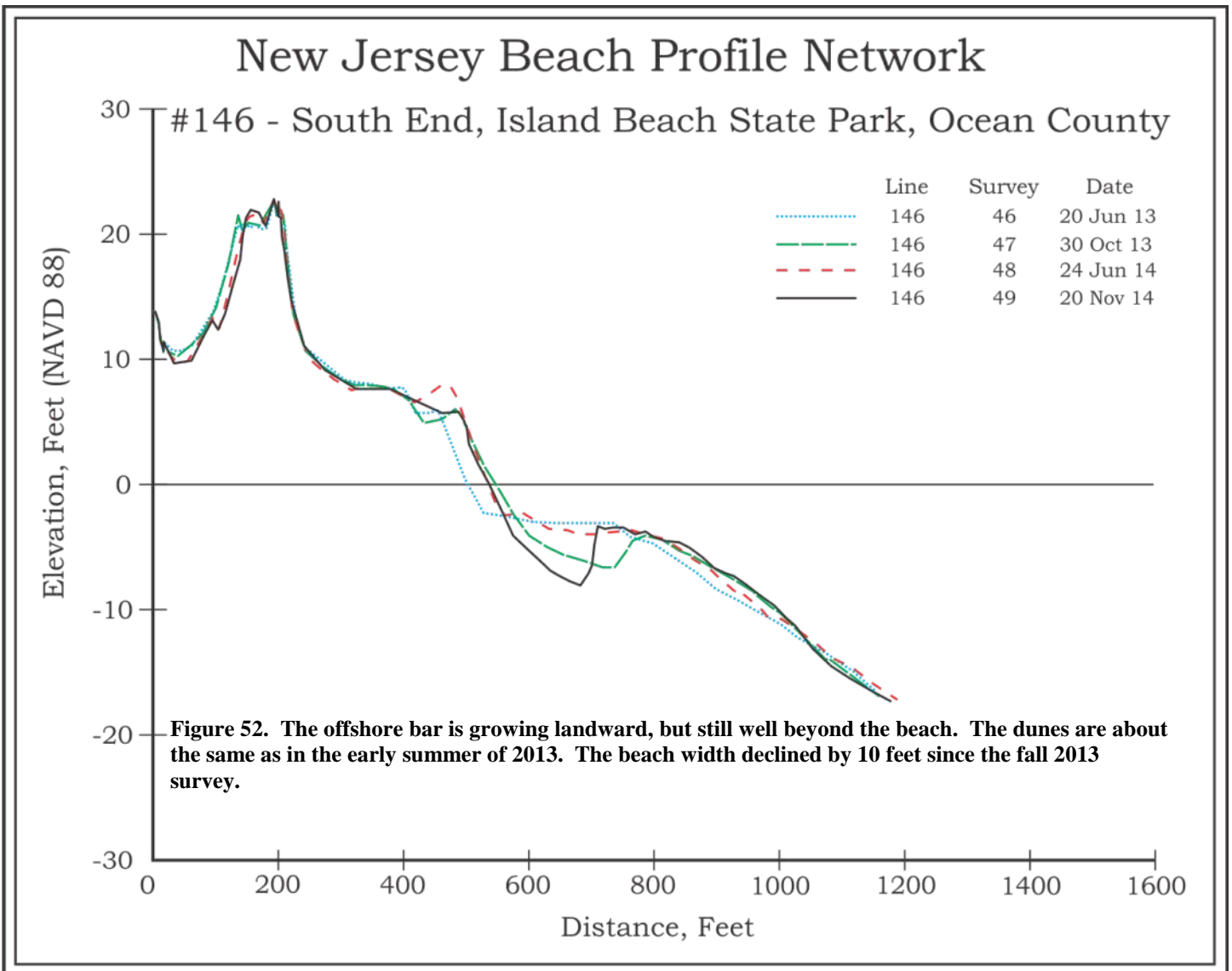
By October 30, 2013 sand had returned from offshore bringing a wider beach, but little progress in rebuilding the pre-Sandy dune. The second year of recovery added sand to the dune; generated a small foredune leaving the cross section wider by 87 feet as of October 2013 with only 1 foot added during 2014.



NJBPN 146 – South End, Island Beach State Park



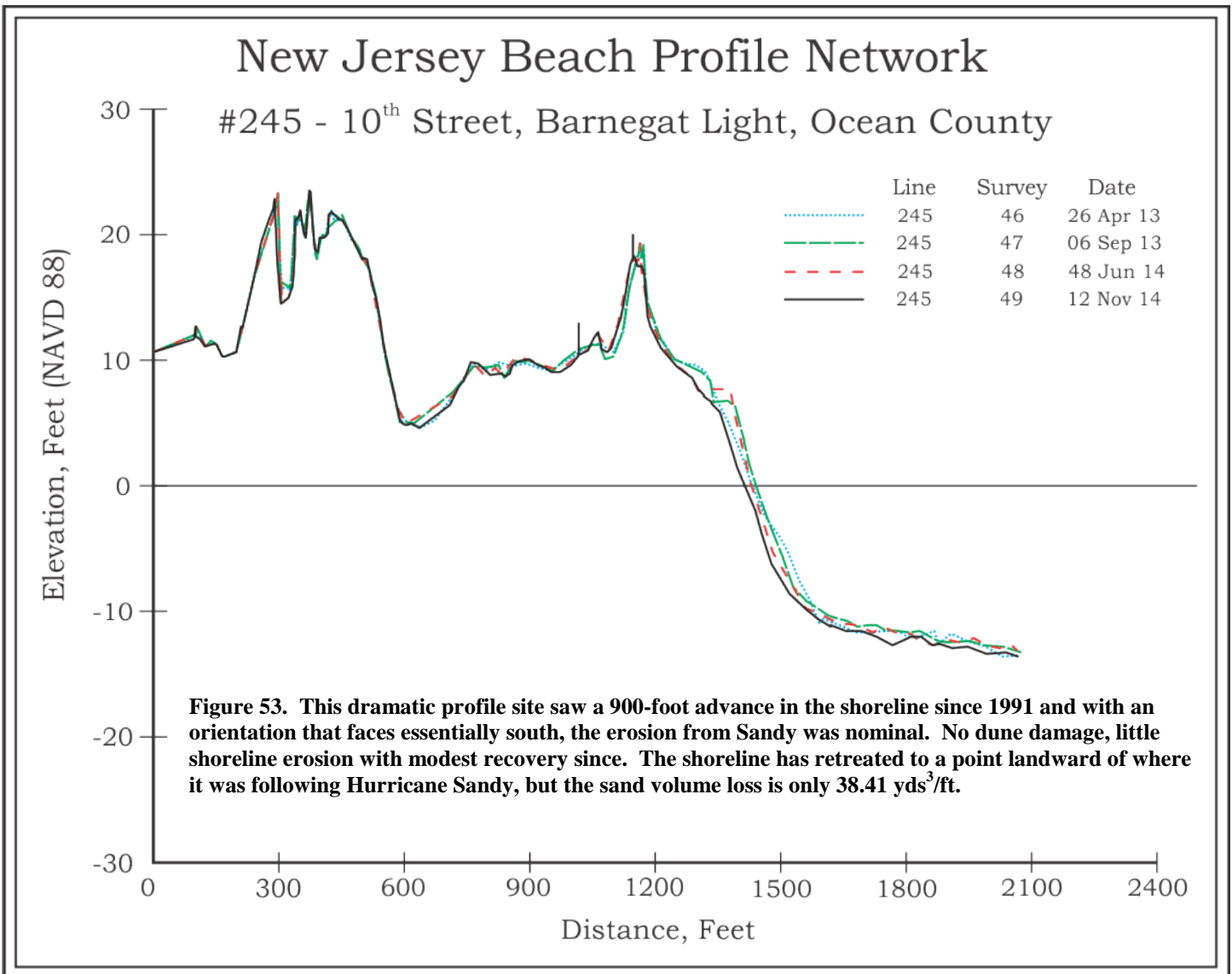
This site within the state protected area is less than a mile from the north Barnegat Inlet jetty. The left photograph, a year after Sandy (October 30, 2013) shows a wider beach and berm, but little growth in the dunes. This dune was cut less than the northern two sites, but natural recovery will be slow. Since the fall of 2013 the sand volume decreased by 8.38 yds³/ft. and the shoreline remained about the same.



NJBPN 245 – 10th Street, Barnegat Light



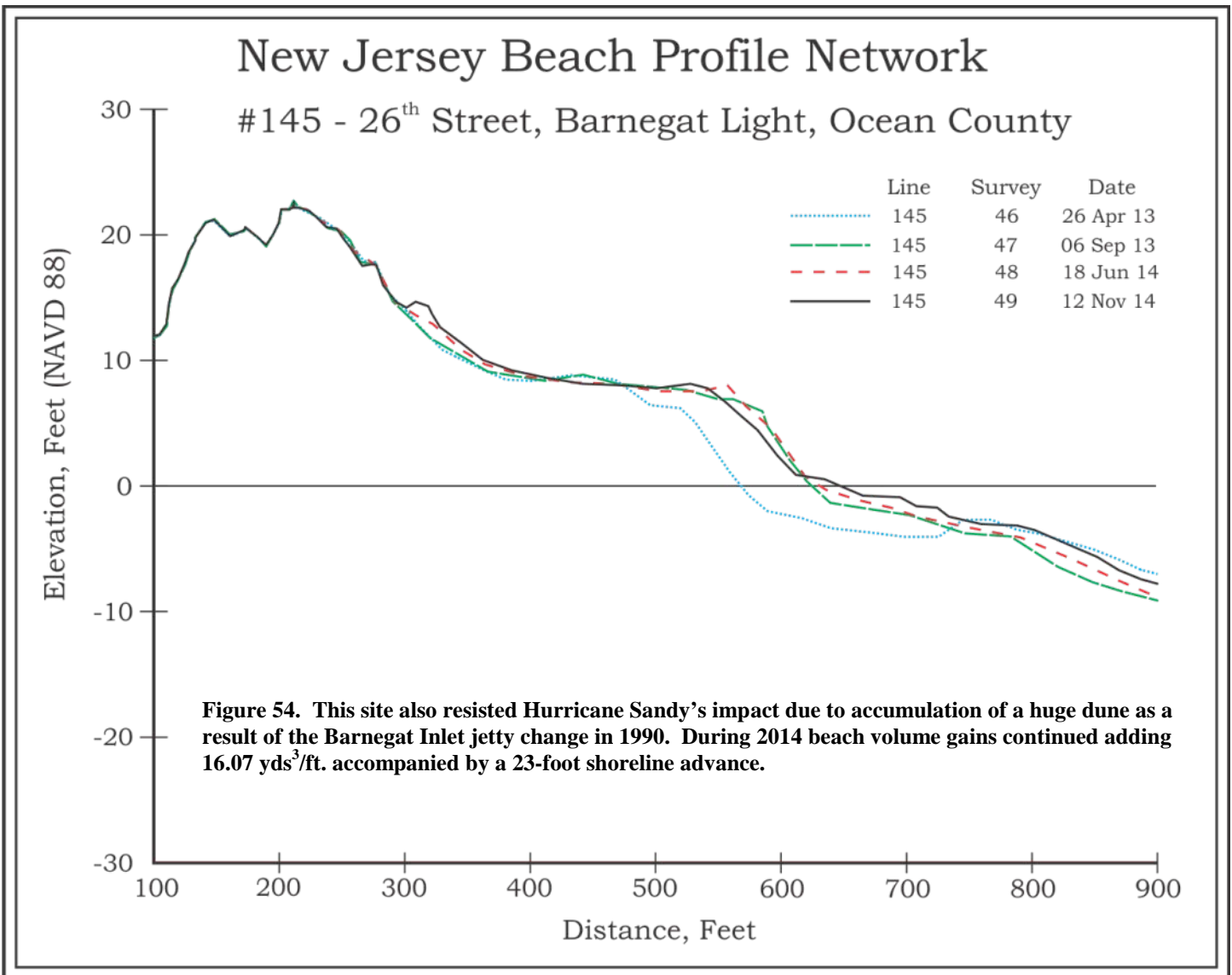
This site is located approximately 1500 feet south of the Barnegat Inlet south jetty and was established to monitor the changes at the inlet. The photo on the left (taken on September 6, 2013) shows that the vegetation recovered well and sand smoothed out the seaward slope. The vertical “pole” in both pictures is the mast of a fishing vessel that sank offshore in the 1980’s and now sticks up in the dunes 300 feet from the edge of the grass. This is a powerful image of the potential for shoreline accretion.



NJBPN 145 – 26th Street, Barnegat Light



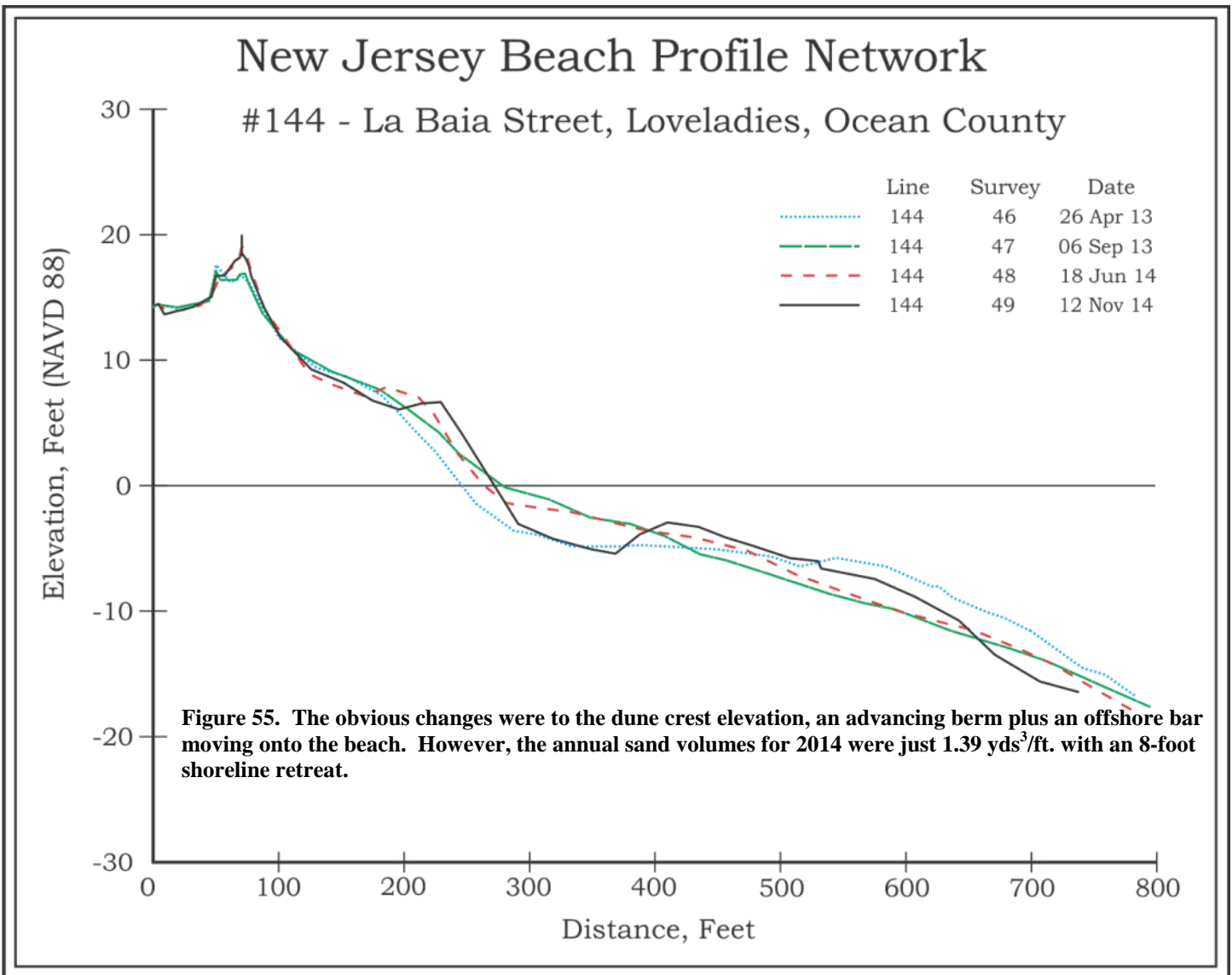
By September 6, 2013 the vegetation was spreading, sand was accumulating along the fencing and the berm had redeveloped naturally to 65% of that present pre-Sandy. This trend continued during 2014 adding a small foredune and some sand offshore.



NJBPN 144 – La Baia Street, Loveladies



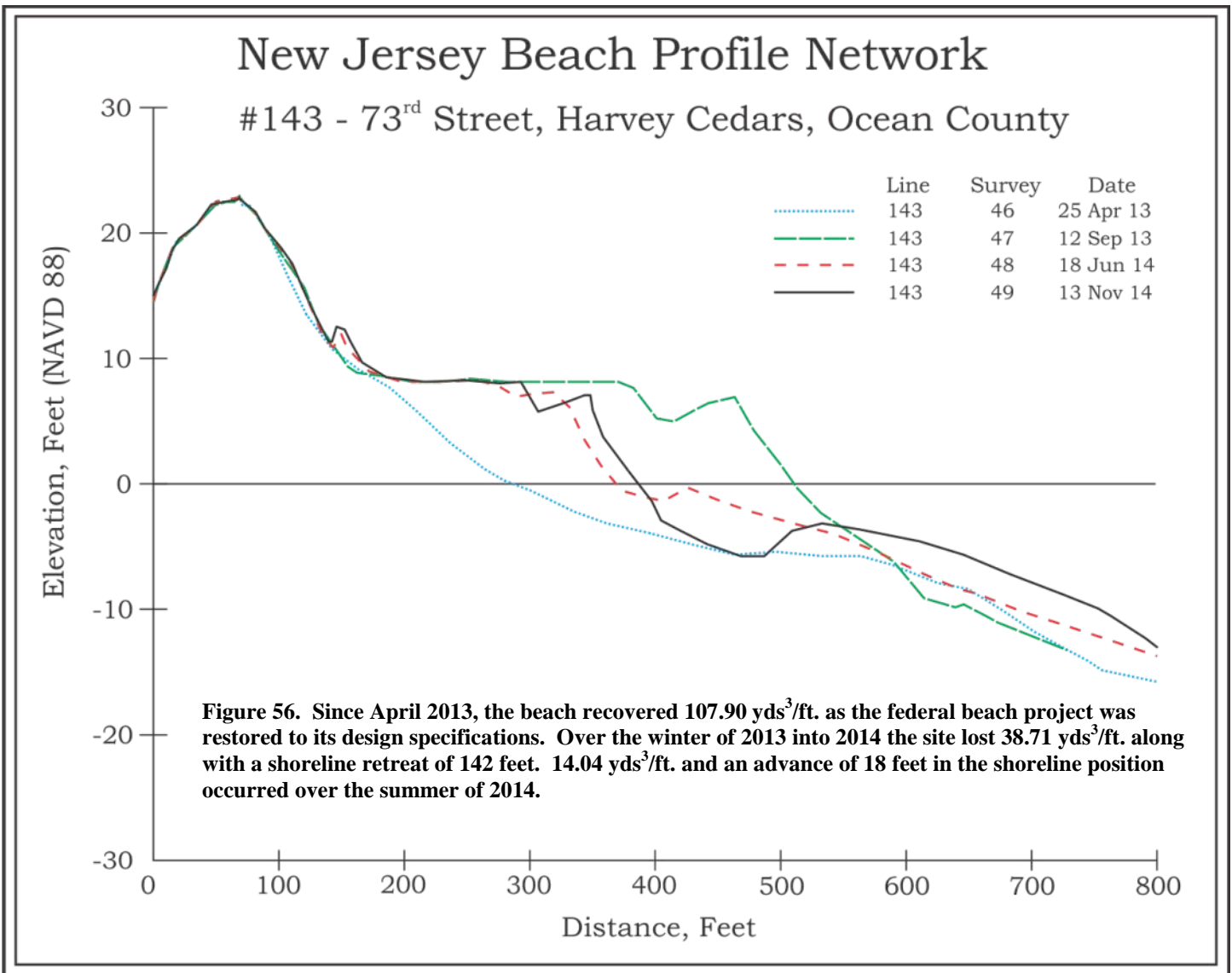
The right photograph was taken Sept. 6, 2013. A year later, the fencing appears to have accumulated some sand at the crest and developed a berm with more sand offshore in a bar.



NJBPN 143 – 73rd Street, Harvey Cedars



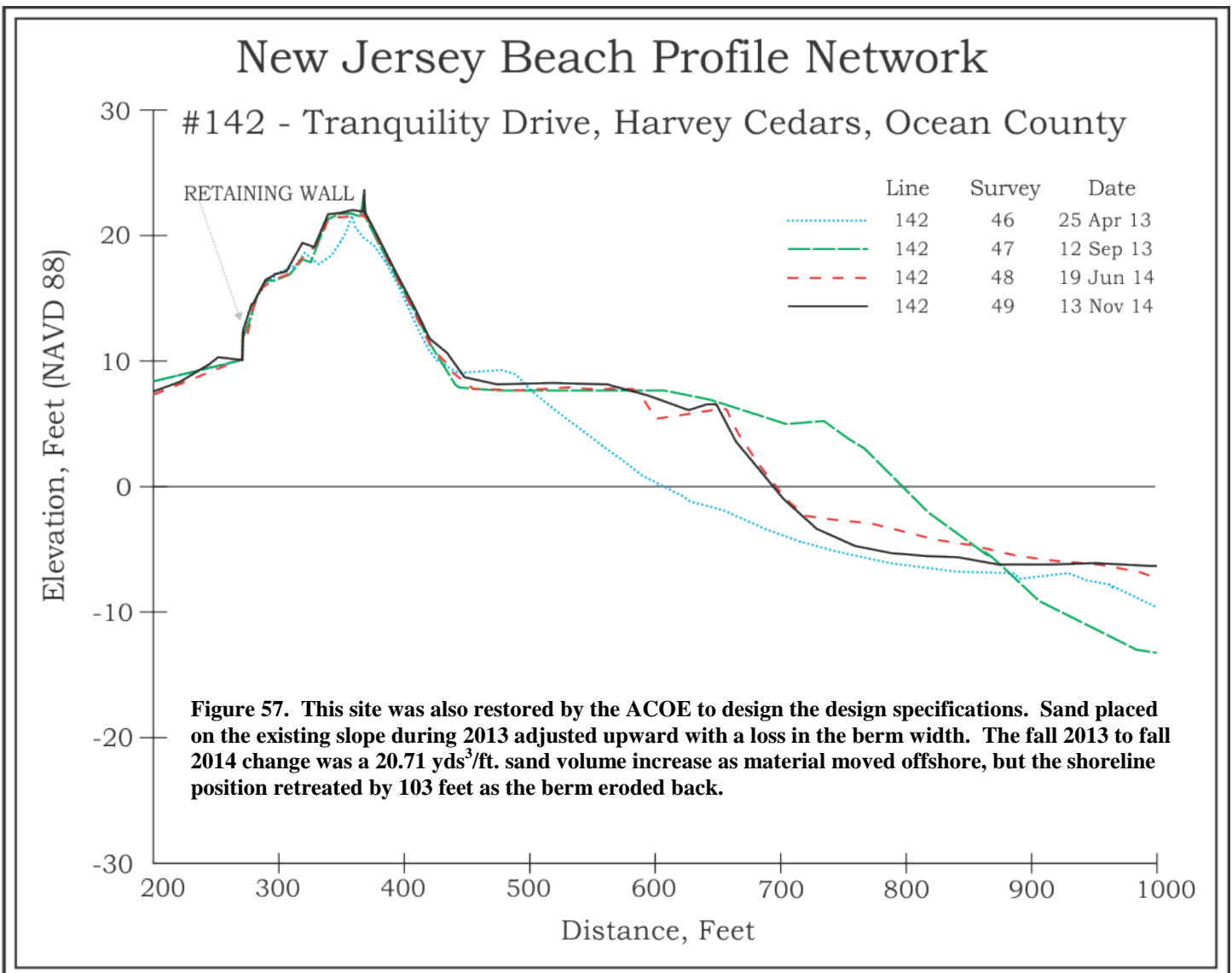
The photo on the left was taken September 12, 2013 looking north. A year later the dune grass was planted and sand had built up along the fence placed at the dune toe. This site had received sand as part of the 2010 USACE beach nourishment project for Long Beach Island. By the fall of 2013 sand had been pumped back onto this part of the ACOE project restoring the berm and grading out the last of the cut in the dunes.



NJBPN 142 – Tranquility Drive, Harvey Cedars



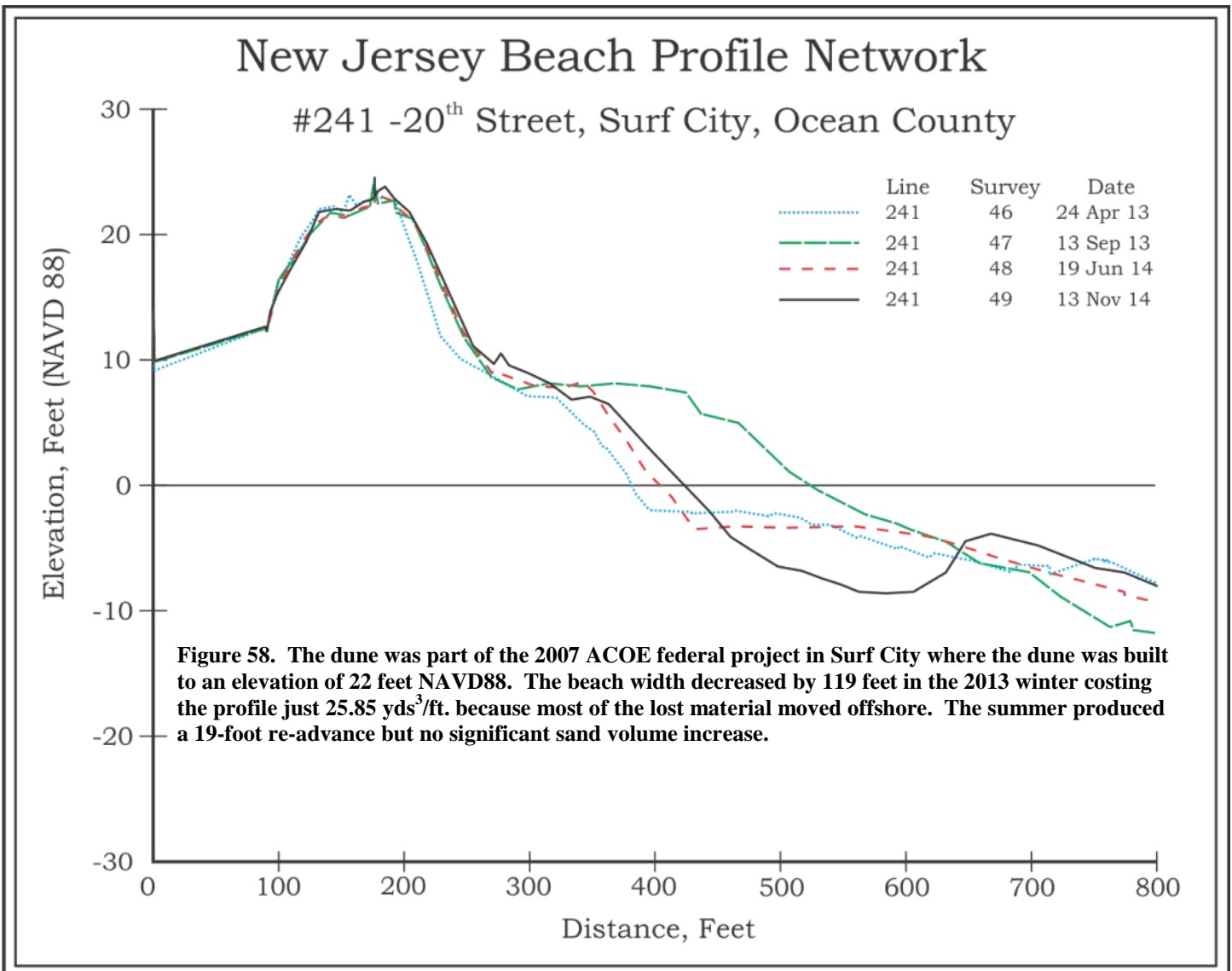
The Tranquility Drive site was included in the 2010 USACE beach nourishment project. The photo on the left (taken on September 12, 2013 – a year post-Sandy) shows the results of ACOE efforts in restoring the dune and berm to design template specifications. A year later (November 13, 2014) grass was in place and sand was accumulating at the dune toe.



NJBPN 241 – 20th Street – Surf City



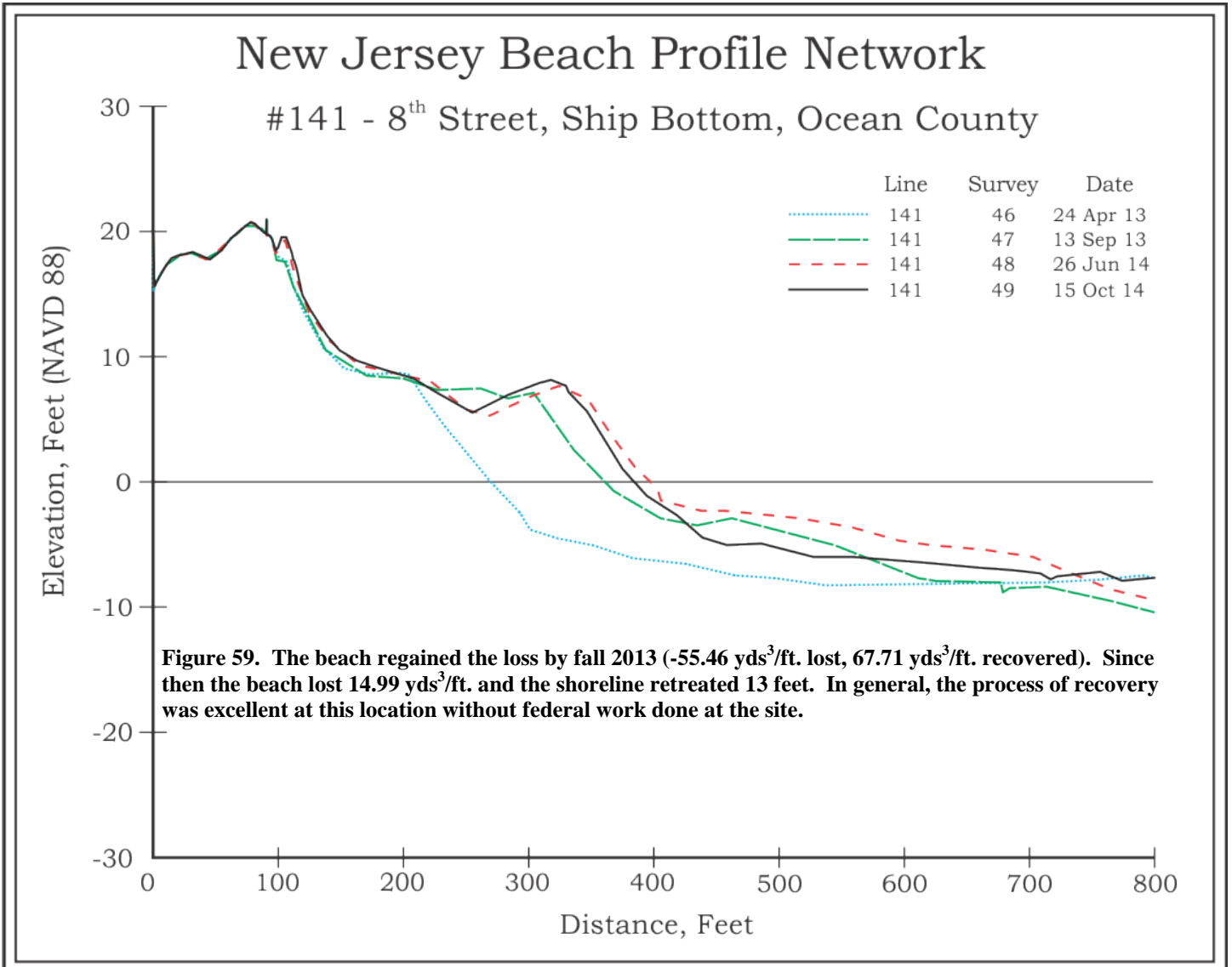
The photographs above were taken on September 13, 2013 (left) and November 13, 2014 (right). Both images show the view of 20th Street (site 241) looking south. This location in Surf City received a beach replenishment in 2007 and was in the process of being restored to design specifications in Sept. 2013. Serious loss impacted the new berm over the 2013 winter producing a shoreline retreat. However, sand did add to the dune.



NJBPN 141 – 8th Street, Ship Bottom



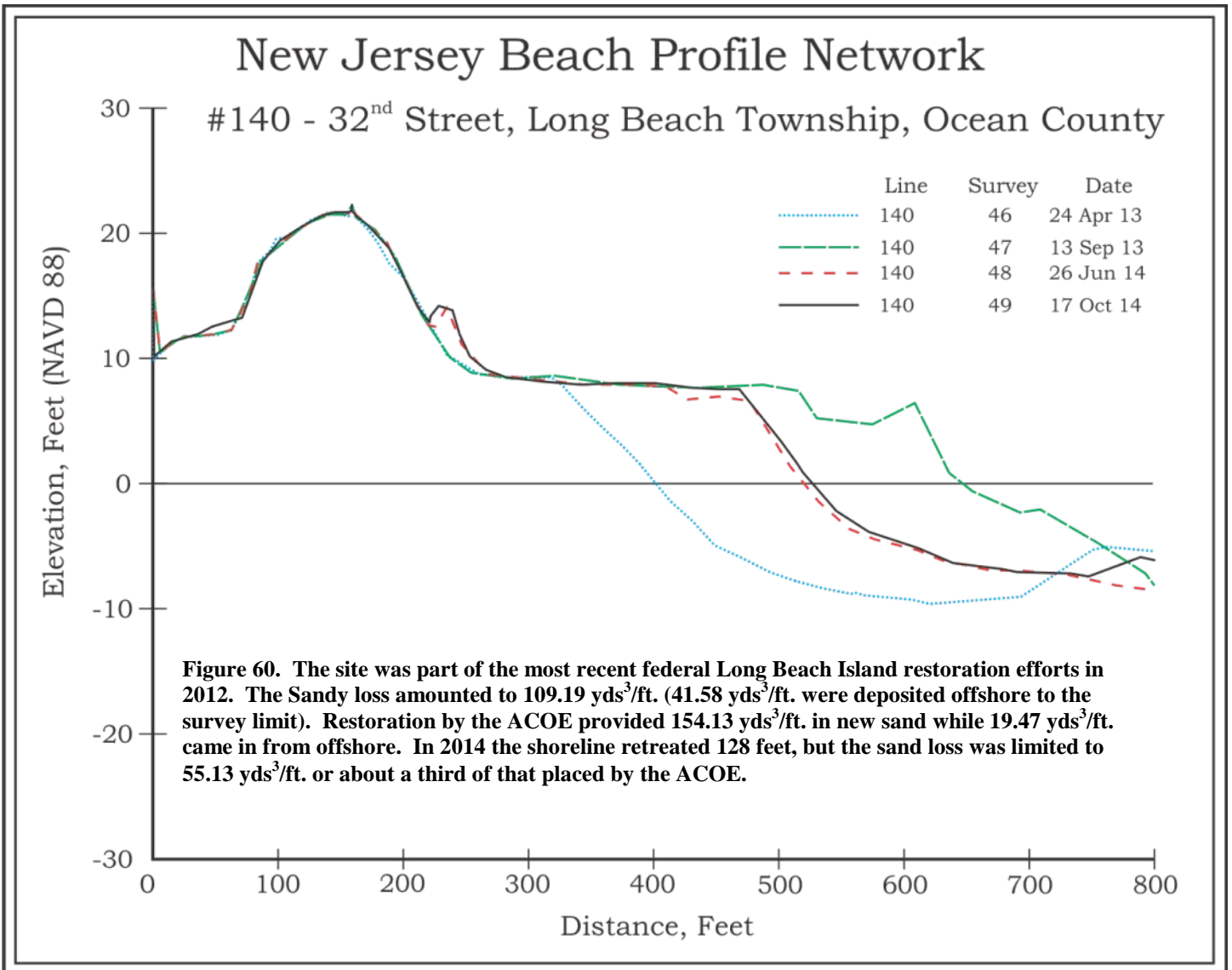
The photographs above were taken on September 13, 2013 (left) and October 15, 2014 (right). Both images show the view of 8th street (site 141) looking north. New fencing improved the seaward dune slope by capturing sand, the berm was a little higher and sand moved onto the berm from offshore.



NJBPN 140 – 32nd Street, Long Beach Township



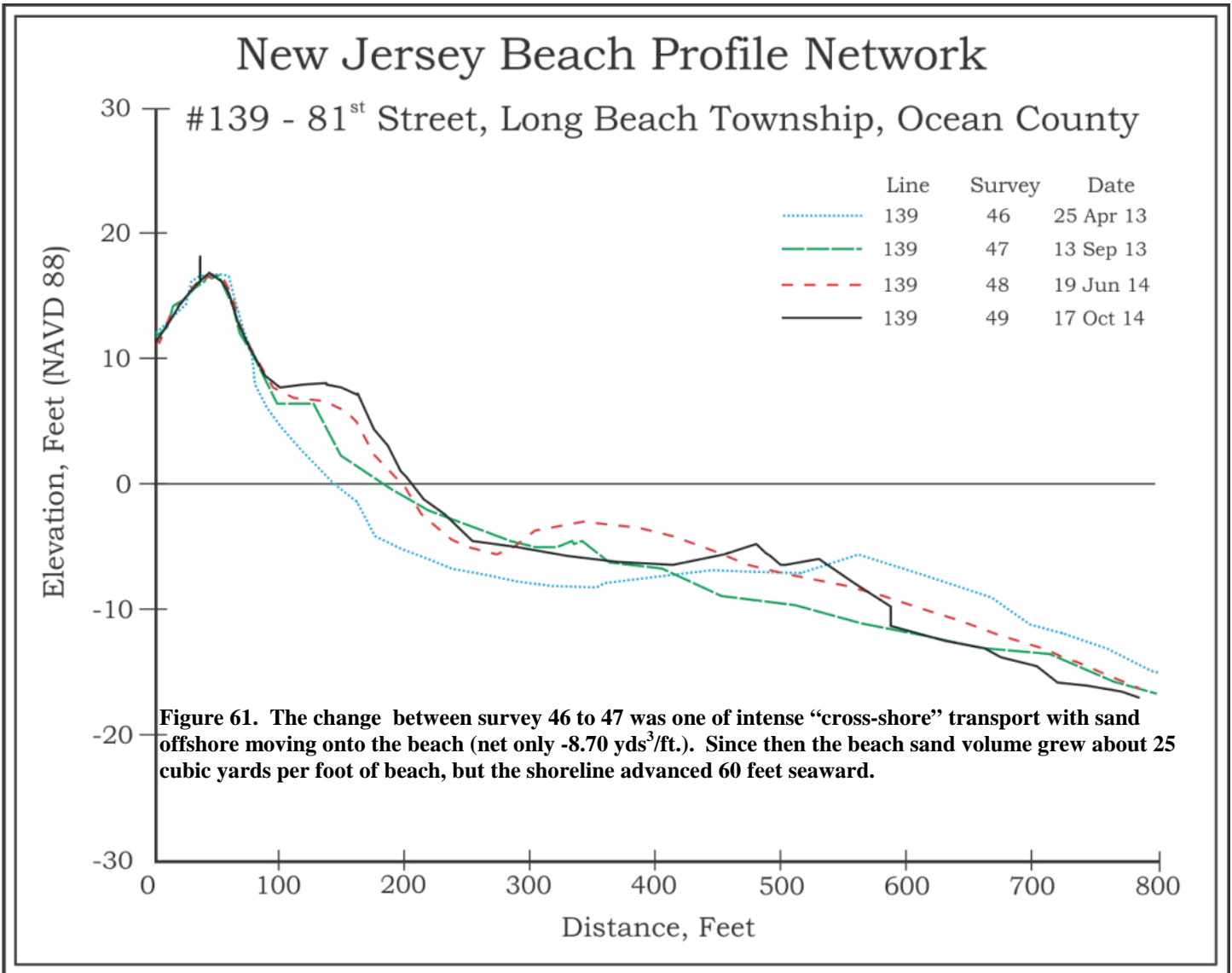
The photographs above were taken on September 13, 2013 (left) and October 17, 2014 (right). Both images show the view of 32nd street (site 140) looking north. This location in the Brant Beach section of Long Beach Township received beach replenishment in spring 2012 just in time. The ACOE completed recovery of their project by September 2013 and adjustments occurred over the next year. Most notably, the berm eroded back putting sand offshore. A small foredune developed at the dune toe.



NJBPN 139 – 81st Street, Long Beach Township



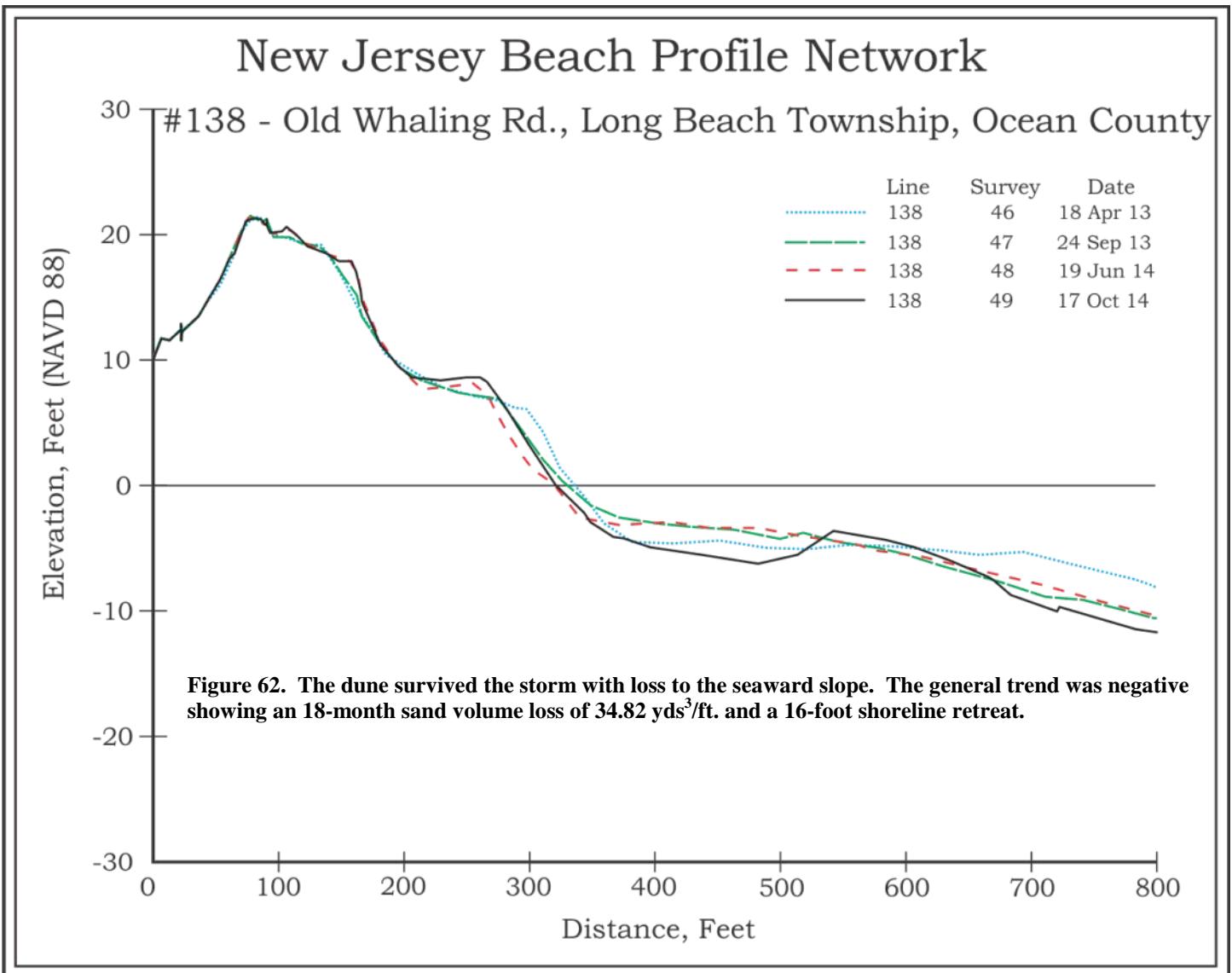
The photographs above were taken September 13, 2013 (left) and October 17, 2014 (right). Both images show the view of 81st street (site 139) looking south. Little has changed in this done since April 2013, but the berm has developed, doubling the width present in fall 2013.



NJBPN 138 – Old Whaling Road (124th Street), Long Beach Township



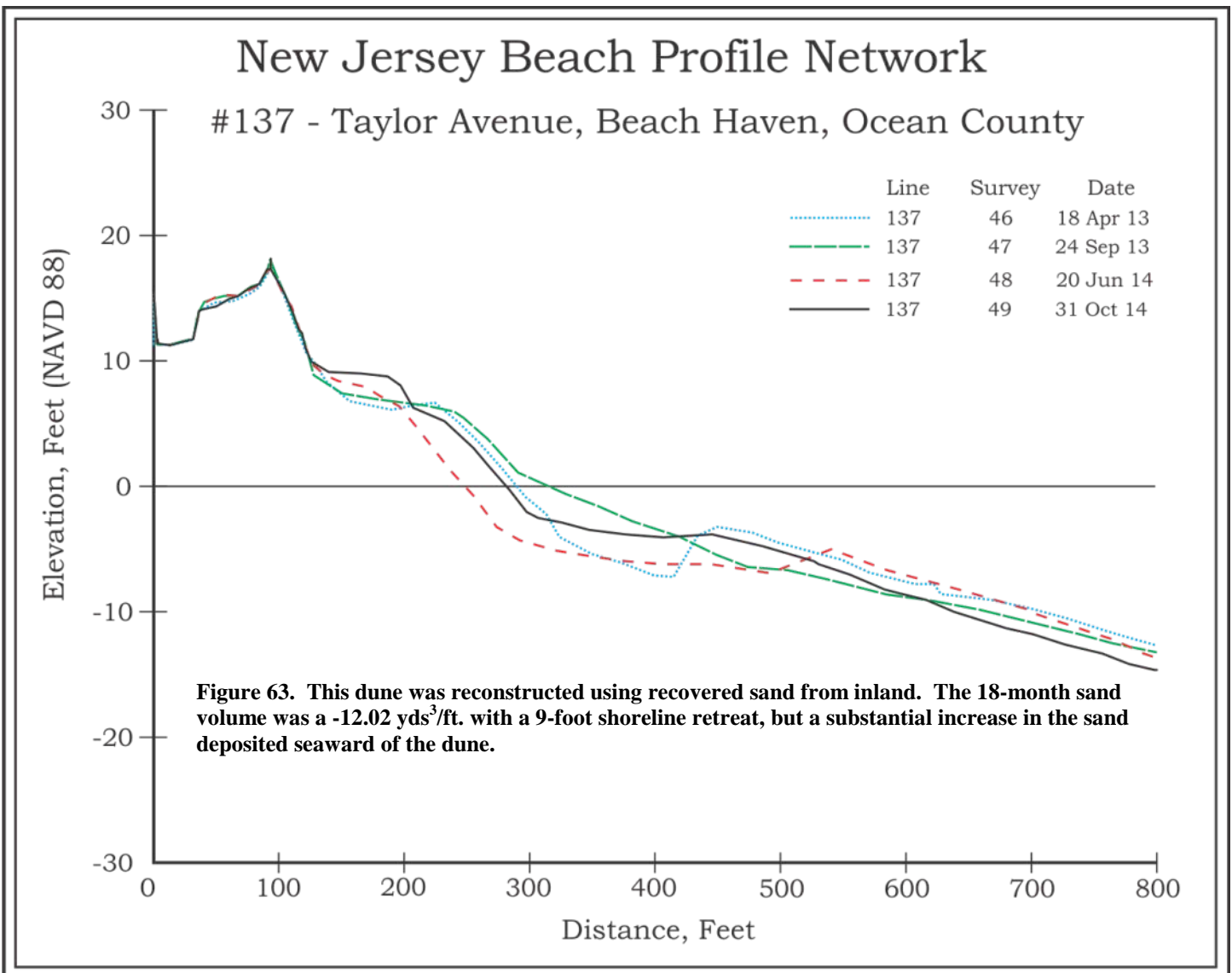
The photographs above were taken on September 24, 2013 (left) and October 17, 2014 (right). Both images show the view of Old Whaling Road (site 138) looking south. Small additions took place in the dune and on the berm since 2013.



NJBPN 137 – Taylor Avenue, Beach Haven



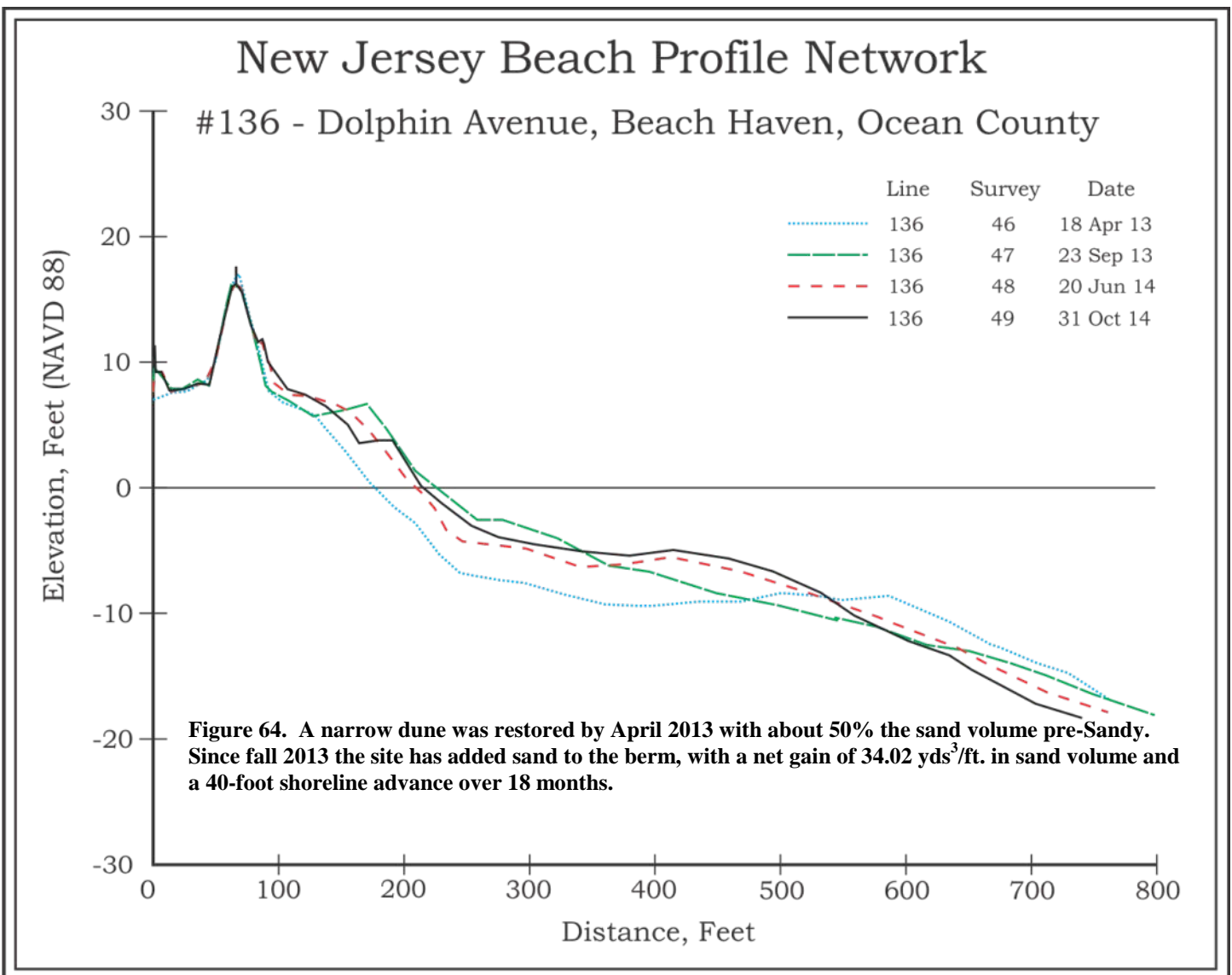
The photographs above were taken on September 24, 2013 (left) and October 31, 2014 (right). Both images show the view of Taylor Avenue looking north. A year after Sandy the dune had been substantially reconstructed from recovered sand hauled back to the beach. During 2014 the sand fence worked to collect a sizable “bench” of sand at the seaward dune toe near elevation 10.0 ft. While the berm was wider in late 2013, retreating 33 feet by fall 2014.



NJBPN 136 – Dolphin Avenue, Beach Haven



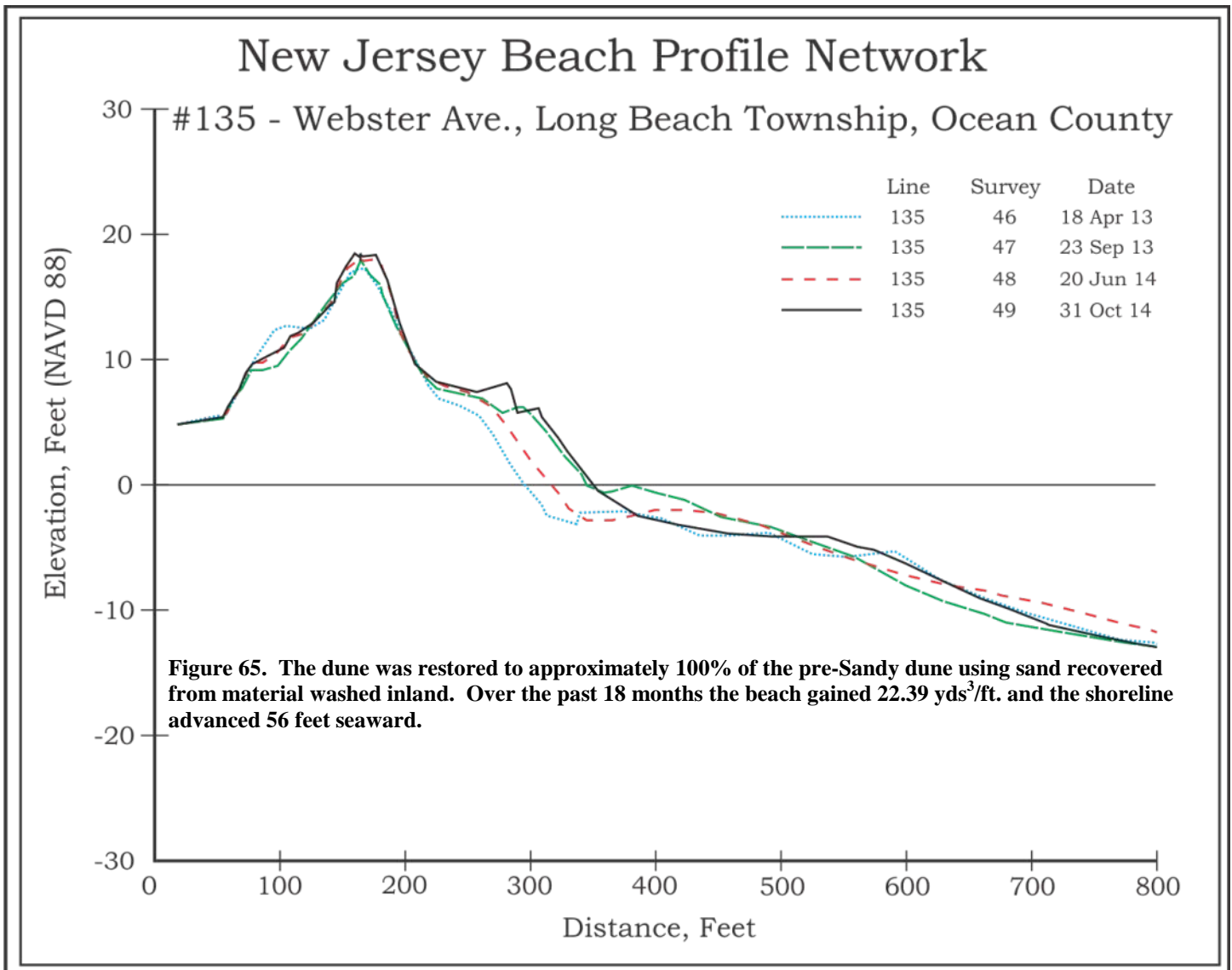
The photographs above were taken on September 24, 2013 (left) and October 31, 2014 (right). Both images show the view of Dolphin Avenue (site 136) looking north. The lost dune was replaced by a smaller feature using sand hauled back to the beach from inland deposits. Growth since fall 2013 was confined to the lower seaward dune slope and offshore.



NJBPN 135 – Webster Avenue, Long Beach Township



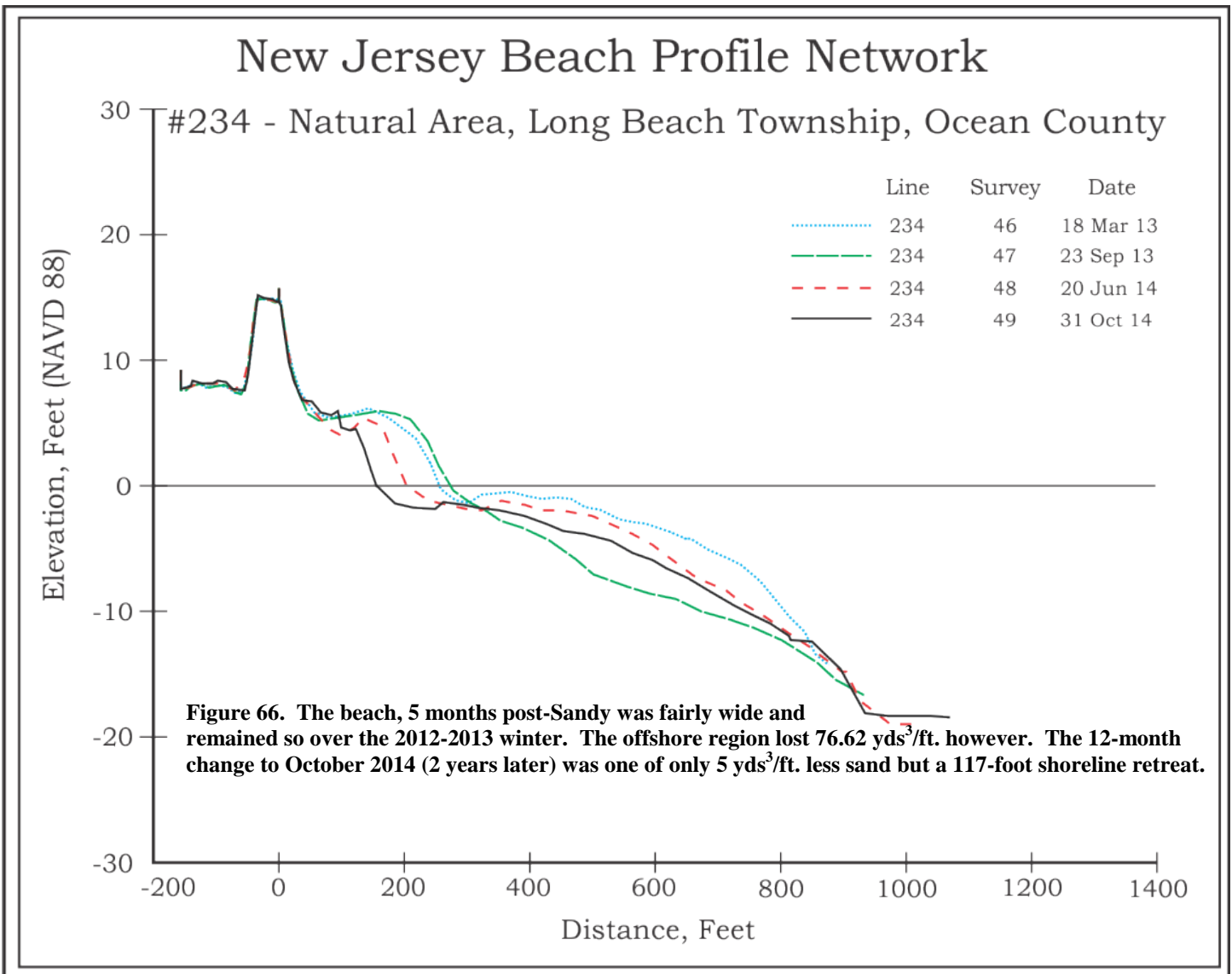
The photographs above were taken on September 23, 2013 (left) and October 31, 2014 (right). Both images show the view of Webster Avenue in Beach Haven (site 135) looking south. The dune was derived from material hauled back from inland and has been enhanced a bit with wind transport during the past 18 months. The beach is wider as sand moved onshore or south to the site.



NJBPN 234 – Forsythe National Wildlife Refuge, Holgate Entrance, Long Beach Township



The photographs above were taken on September 23, 2013 (left) and October 31, 2014 (right). Both images show the view looking north at the beach-buggy entrance to the Forsythe Refuge (site 234). Sand was pushed south to create a “dune” following complete overwash by the storm surge flattening all elevation features on the refuge property. The post-storm statistics on this site were very different as huge volumes of sand accumulated south of what is the terminal rock groin on LBI. This sand did not stay in place long making this site appear highly erosional (exposed waste rock and concrete in right picture).



Summary & Conclusions

The beach conditions changed differently in Ocean County than those seen in Monmouth County where the New York District Corps of Engineers brought 21 miles of that County's shoreline back to design conditions. The data presented in the 2013 report was duplicated just for Ocean County simply due to the positive skew put into any natural accretion by the ACOE work in the other three NJ counties. The right two columns show percentage of beach/dune recovered to elevation zero (NAVD88) and the change in shoreline position (the elevation zero point on each cross section). The percentages come from the observed beach volume lost during sand (column 2) and the shoreline retreat (column 3). The survey prior to Hurricane Sandy was used as the baseline for columns 4, 5 and 6. The four ACOE project locations are highlighted in orange.

Table 1 – Ocean County Sand Volumes & Shoreline Changes 2 Years Following Sandy

LOCATION	Beach Loss	Shoreline	Beach Volume	Beach Volume	2014 Shoreline	Beach	Shoreline	
Comparisons with pre-Sandy Beach & Shoreline Data	During Sandy	Storm Retreat	by Fall 2013	by Fall 2014	Relative to pre-S	Recovery	Recovery	
	cu yds/ft.	feet	cu yds/ft.	cu yds/ft.	feet	Percent	Percent	
Water Street, Pt. Pleasant	-109.55	-130	-66.92	-32.22	-57	71%	56%	
Maryland Avenue, Pt. P.	-30.35	-54	-10.73	-30.82	-23	-2%	57%	
Johnson Avenue, Bay Head	-60.00	-86	-25.83	-33.32	-62	44%	28%	
1117 Ocean Avenue, Mant.	-94.03	-92	-9.30	-10.02	-33	89%	64%	
Public Beach #3, Brick Twp.	-50.95	-66	-13.95	-4.42	-46	91%	30%	
1st Avenue, Normandy	-74.33	-58	-38.98	-17.65	-22	76%	62%	
White Avenue, Lavallette	-45.49	-92	-16.66	-38.15	-72	16%	22%	
8th Avenue, Ortley Beach	-30.62	-63	-44.52	-14.50	-61	53%	3%	
Franklin Avenue, Seaside Hgt	-32.32	-69	-15.28	-12.08	-28	63%	59%	
4th Avenue, Seaside Park	-28.74	-26	-18.14	-15.47	2	46%	108%	
6th Lane, Midway	-21.01	-6	-7.77	-10.67	19	49%	417%	
IBSP North Site	-39.45	-26	-64.41	-27.78	-53	30%	-104%	
IBSP Mid Site	-72.21	-83	-58.13	-31.66	-50	56%	40%	
IBSP South Site	-73.38	-180	-28.78	-49.05	-85	33%	53%	
10th Street, Barnegat Light	-33.18	-21	-27.74	-21.41	-56	35%	-167%	
26th Street, Barnegat Light	-46.01	-87	-18.55	-8.33	-8	82%	91%	
La Baia Street, Loveladies	-52.83	-117	-33.46	-26.62	-93	50%	21%	
73rd Street, HC	-61.38	-119	46.52	-2.90	-21	95%	82%	
Tranquility Drive, HC	-14.52	-35	72.26	15.69	52	208%	249%	
20th Street, Surf City	-32.46	-44	23.40	-7.59	-2	77%	95%	
8th Street, Ship Bottom	-55.46	-78	12.25	0.52	37	101%	147%	
32nd Street, LBTwp	-109.19	-164	44.94	9.24	-39	108%	76%	
81st Street, LBTwp	-50.84	-27	-40.36	12.76	26	125%	196%	
Old Whaling Road, LBTwp	8.05	19	4.96	13.63	4	169%	121%	
Taylor Avenue, Beach Haven	14.17	36	31.99	2.55	27	118%	175%	
Dolphin Avenue, Beach Haven	-49.75	-44	-4.82	-19.38	-4	61%	91%	
Webster Avenue, Holgate	-40.26	-93	-13.56	-7.54	-39	81%	42%	
Forsythe Refuge	119.23	128	123.90	13.09	28	111%	122%	
Average Volume Changes (without ACOE work)	-41.67	-59.89	-7.06	-12.65	-23.54	68.74%	72.27%	
			83.1%	69.7%	60.7%			
ACOE Work Complete						Recovery including ACOE work	76.4%	79.9%
						Northern Ocean County Recovery	51.2%	64.0%
						Long Beach Island Recovery	106.7%	116.0%

The impact of the ACOE effort can be seen in the 7% increase in beach recovery and the 8% increase in the amount of shoreline advance has on the 28 sites. Northern Ocean County did not fare as well, regaining just 51.2% of the sand volume lost on average versus almost 69% for LBI without the ACOE effort being counted. Shoreline recovery was likewise 8% less than it was on LBI without consideration of the ACOE work. The worst sites performance wise were Maryland Ave. in Point Pleasant Beach, Lavallette, Ortley Beach and the 3 Island Beach State Park sites (due to no human intervention).