Welcome to the 11th Annual State of the Shore Media Event

CLAIRE ANTONUCCI

Executive Director and Director of Education
New Jersey Sea Grant Consortium

CLAIRE ANTONUCCI

Each year since 2003, the New Jersey Sea Grant Consortium's *State of the Shore Report* has marked the beginning of another summer season at the Jersey Shore. This year the report marks a first. The summer of 2013 will forever be New Jersey's first summer after Sandy, the most devastating storm to hit our state that the majority of us have ever known.

The reports contained herein remind us there is nothing like a storm to demonstrate the power of nature and just how vulnerable our coast is. Sandy damaged or destroyed countless homes and cars, turned boardwalks and other shore landmarks into scrap and reshaped, or even erased beaches. A day doesn't go by that you don't learn of a storm-related change or hear a new story of loss and devastation. The extent of Sandy's damage is far from fully known or understood, and despite our best efforts, it may never be.

If nothing else, Superstorm Sandy should renew our respect for nature and its awesome power. So should the more common Nor'easters, flood tides and storm surges that we also experience. We can only plan and prepare for the effects of these forces. The hard truth is that we will never conquer them. We also need to step up our efforts to respond to a changing climate. While the formation of Superstorm Sandy cannot be directly tied to climate change, the effects of a warming climate including higher sea levels and rising ocean temperatures certainly had a role in the level of devastation. These realizations may well be among the most important lessons we can take away from Superstorm Sandy.

The storm should also remind us that we need to be mindful of the impact we have on our coastal environment. New Jersey has been endowed with 130 miles of ocean coast. It provides us with countless advantages including wonderful places to live, work and play. As we have learned from Sandy, these advantages come with some risk and much responsibility. In New Jersey, we are fortunate to have tremendous institutional resources including Stevens Institute of Technology and the Richard Stockton College of New Jersey working to advance understanding of these risks as well as guide informed policy for a better prepared and resilient future. With these resources and others at the disposal of our leaders, New Jersey's citizens and visitors should have every confidence that a "New" New Jersey will emerge that will be better prepared to deal with future storms and, even during this post-Sandy summer, able to offer them the joys of time spent on the beautiful beaches and bays of the Jersey coast.

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STATE of the SHORE Report

JON K. MILLER, Ph.D.
Research Assistant Professor, Stevens Institute of Technology
Coastal Processes Specialist, New Jersey Sea Grant Extension Program

ELIZABETH A. LIVERMONT
Ph.D. Candidate, Stevens Institute of Technology

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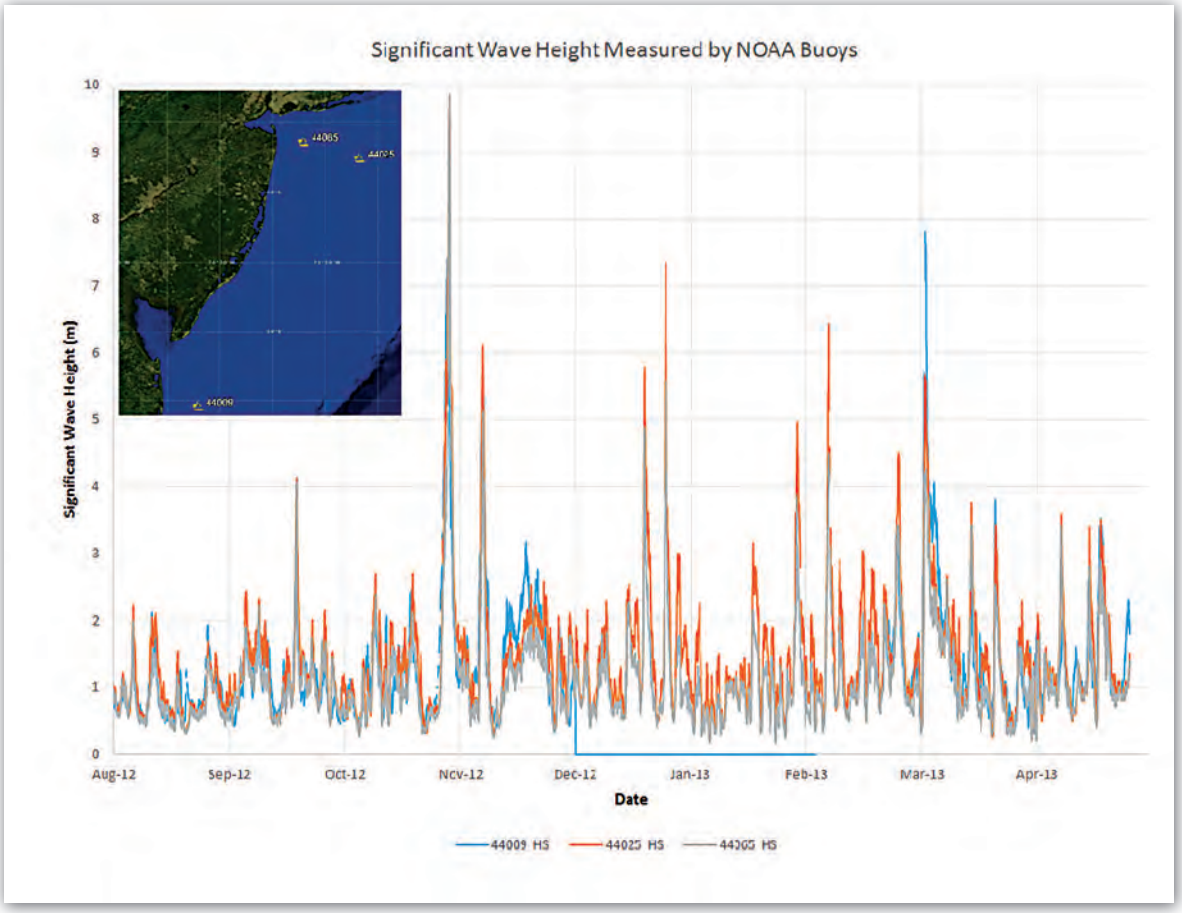
DR. JON K. MILLER

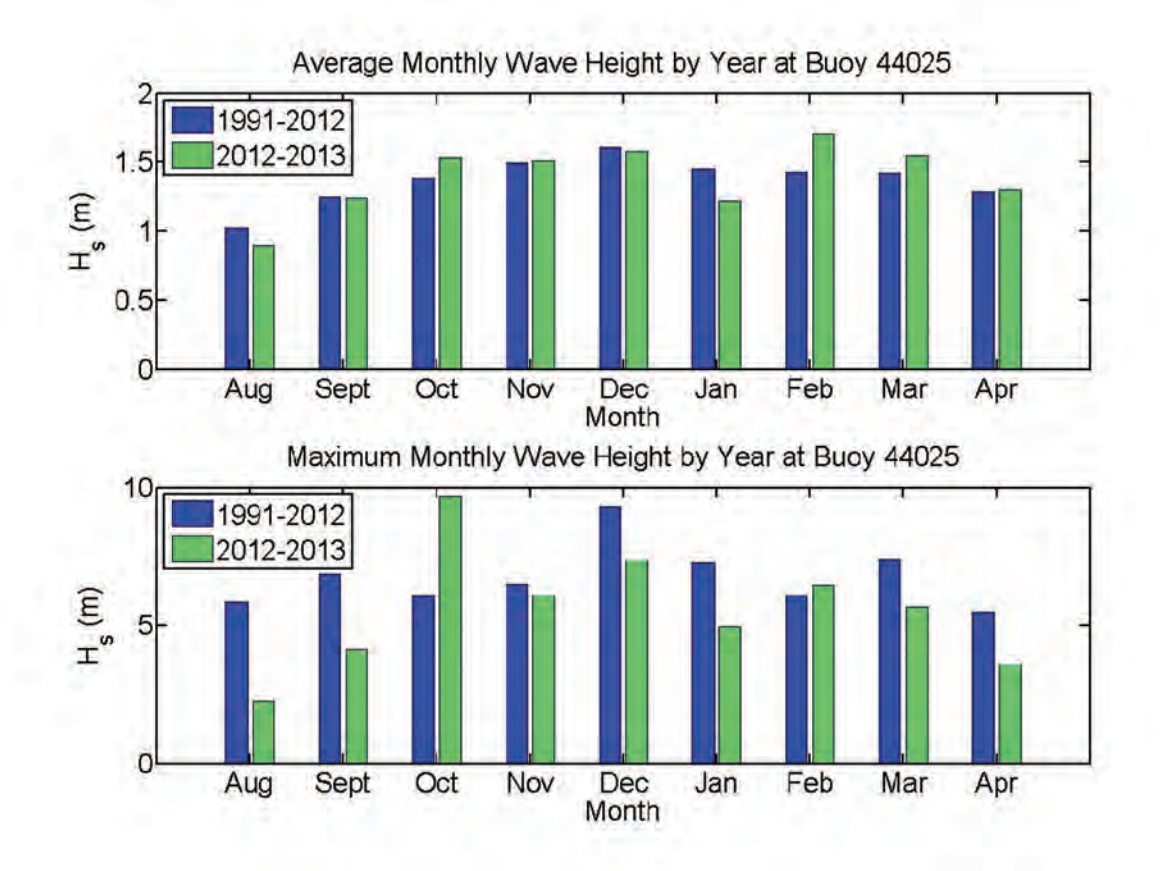
Overview

The winter of 2012-2013 will forever be remembered as the year of Superstorm Sandy. Coming some seven months after the 50th anniversary of the Ash Wednesday storm, Sandy ravaged the coastlines of New York and New Jersey with a destructive and deadly combination of storm surge and waves. When all was said and done, Sandy was blamed for three dozen deaths, 350,000 damaged or destroyed homes, and more than $30 billion in economic losses in New Jersey alone. Unfortunately, Sandy was not the only storm to batter the New Jersey Coast this past winter. A series of Nor'easters in November and December continued to assault the vulnerable coastline, wreaking havoc with the clean-up efforts in the most affected communities. After a brief respite in January, the spring brought several more storms which continued to chew away at an already compromised coastline. Typically, the spring and summer months bring the return of wave conditions favorable for naturally rebuilding the beaches; but unlike traditional winter storms which simply deposit beach sand in offshore bars, Sandy washed millions of cubic yards of sand into the streets, back bays, and far offshore. Unless mechanically moved back to the beach, this sand is effectively lost from the beach system, leaving the majority of New Jersey's beaches lower, narrower and more vulnerable to the next storm.

Coastal Storm Activity

Sandy was the most significant storm to impact the New Jersey coast in the past half century, but not the only notable





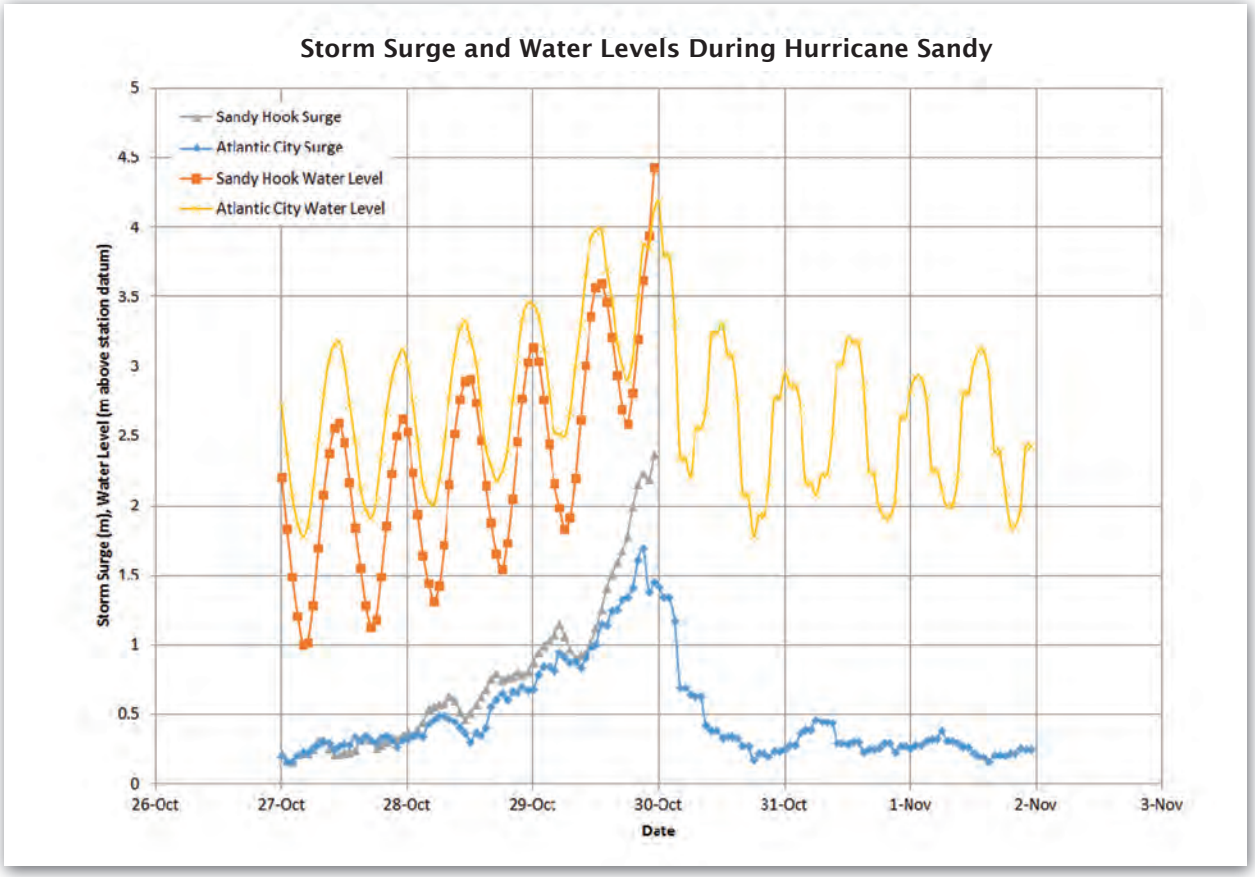
storm of the winter. Perhaps the most memorable Nor'easter was the storm that impacted the New Jersey coast the week following Sandy. From a coastal erosion and damage standpoint, the storm itself was not significant; however, Sandy left New Jersey's beaches in such a vulnerable state that even small storms posed an immediate threat. Fortunately most communities were able to create emergency sand berms that were sufficient to prevent additional major damage.

This winter's tempestuous weather pattern continued throughout November and December, culminating in two additional moderate to large Nor'easters. While neither storm had nearly the destructive impact of Sandy, both caused significant backbay flooding in communities already struggling to recover from Sandy. These storms were partially responsible for the perception that Sandy significantly altered the tidal hydraulics making backbay flooding more common than in years past. In addition, both storms continued to chew away at New Jersey's beaches, causing even more beach erosion. If there was a respite this past winter, it occurred during January when conditions moderated and there were few storms of note.

Mother Nature wasn't quite through however, as February and March brought a return to the stormy pattern that dominated the end of 2012. In particular, a storm in early March generated waves measured at over 25' at NOAA buoy 44009. This exceeded the largest waves measured during Sandy for this location. The March storm caused even more damage, resulting in significant beach erosion and compromising structures that had been exposed and weakened by Sandy. Although May can still bring a few surprises, April was relatively mild, hopefully signaling an early return to the calm summer conditions that will allow New Jersey's beaches to begin to recover.

Storm Outlook

The summer storm outlook based on the most recent report from the Tropical Meteorology Project at Colorado State University suggests enhanced tropical storm activity in 2013. Released on April 10, 2013, the report predicts a total of 18 named storms, including 9 hurricanes with 4 of them major (Category 3, 4 or 5). This is compared to historical median values of 12 named storms, 6.5 hurricanes, and 2 major hurricanes for the period from 1981-2010. The predicted increase in activity is due to an anomalously warm tropical Atlantic and a reduced likelihood of El Niño formation in the summer and fall. The report places the probability of a



hurricane making landfall somewhere on the East Coast at 81%, including a 48% chance of a major hurricane. While the probability of a hurricane making landfall in New Jersey remains fairly low at 2.3%, that number is nearly double the historical average (1.3%). In considering this forecast and any other, it is important to keep in mind that large storms can and do impact New Jersey, and that when they do, the results can be devastating.

This was never clearer than last October when Sandy highlighted the importance of being vigilant in our preparation in spite of the long range hurricane outlook. Last year's April forecast called for only 10 named storms and a less than one percent chance of a major hurricane making landfall in New Jersey. It is also important to correct a common misunderstanding with respect to the terminology we have adopted when discussing rare events. We frequently talk about the 100-year storm which can unfortunately give people a false sense of security. People are often left with the impression that a 100-year event will occur only once every 100 years and since Sandy occurred last year we're not due for another storm like her for another 99 years. In reality, the occurrence of Sandy last year has little to do with the probability of a similar storm occurring this year. In fact, if anything the long-term trends in global weather patterns that drive large-scale phenomena like tropical cyclones might point to a slightly higher probability of a similar storm than compared to the long-term average.

Future Outlook

More than any year in the past half century, New Jersey's beaches are in dire need of assistance. In many communities, beaches and dunes are being credited with saving lives, and reducing or eliminating damages during Sandy. In nearly all of these areas, additional sand is required if we are to stave off another superstorm. Rebuilding the beaches and dunes has and will take on many forms, from recycling the sand deposited within the communities, to large Federal beach nourishment projects, to local community dune building efforts. All of these efforts are essential if we are to restore the New Jersey coast to pre-Sandy conditions, and even more so if we are to embrace beaches and dunes as an important component of increasing our coastal community's resiliency to future storms like Sandy.

HURRICANE SANDY COLLIDES WITH THE NEW JERSEY COASTLINE

A Special Report for the 2013 State of the Shore Media Event

STEWART FARRELL, Ph.D.

Director, Richard Stockton College of New Jersey's Coastal Research Center

DR. STEWART FARRELL

The New Jersey Department of Environmental Protection (NJDEP) authorized the New Jersey Beach Profile Network (NJBPN) project in 1986. The project report is divided into four coastal county segments and provides a summary of beach changes for that county. This year is unique in that Hurricane Sandy had such a profound impact on the beach/dune systems of the State, especially in Monmouth and Ocean Counties. Therefore, most of the traditional remarks have been set aside in favor of a focus on what worked and how well things did or did not work to protect or defend public and private development in each county.

All major beach restoration or hard structure projects were reviewed for performance and effectiveness. Each segment of the coastline was individually published on the Coastal Research Center (CRC) website as soon as it was complete. This report attempts to combine all six Sandy reports plus a review of the seasonal changes prior to Sandy in a summary of this extraordinary event.

Introduction

The New Jersey Beach Profile Network (NJBPN) project provides local and regional information on coastal zone changes and is designed to document seasonal and storm-related damage assessments of the New Jersey shoreline. Each site has been visited annually in the fall since 1986. Semiannual visits, each spring and fall, began in 1994 following the passage of Public Law 93. The program was expanded to take surveys every spring following the winter Nor'easters and in the fall following summer beach accretion. In addition, new sites were established in the gaps of coverage and adjacent tidal inlet shorelines. The information collected consists of photographs of the beach/dune system at each site; a topographic profile of the dune, beach and seafloor to a minimum depth of 14-16 feet; and field notes on significant geologic changes. Also, construction activity is noted and necessary information regarding quantity and duration of such activity is gathered. The field data are used to generate graphical cross section plots, which can be used for comparison across the width of the active coastal zone. The cross section is also used to calculate sand volume and shoreline position changes. The 2012 report follows an in-depth analysis in 2011 looking across the 25-year history of the project and is the latest in a series of annual reports prepared for the New Jersey Department of Environmental Protection (NJDEP) that began in 1987.

Early morning November 2, 2012 on the oceanfront in Mantoloking, Ocean County, New Jersey - a hearth with no home.

The New Jersey Coastal Zone

The northern coast in Monmouth County is considered a headland beach (carved into older geologic sedimentary units that created a sandy beach backed by a bluff of the older sediments) which erode during serious storm events. As a matter of fact, the erosion loss to the armored bluff between 1962 and 2012 was very minimal due to the abundance of timber, rock, steel and concrete used to prevent it. The impact of Hurricane Sandy changed much of this by producing over 30-foot breaking waves that damaged or destroyed multiple levels of revetment or bulkhead construction frequently exposing the old sediments of the uplands to erosion. Several locations saw retreat in the order of 30 to 50 feet with the sediment distributed along the shoreline just as it has for thousands of years. Centuries of this sort of erosion had created two major sand spits, one to the north from Long Branch (Sandy Hook), and the other to the south from Bay Head (Mantoloking to Barnegat Inlet). To the south of Barnegat Inlet, barrier islands compose the remainder of the New Jersey coastline where individual islands are separated from the mainland by a series of bays and tidal lagoons. These islands provide no local sand supply to the beach and as a result the shoreline moves landward with rising sea level.

Sandy's impact strongly reinforced the time-honored thesis known to coastal geologists that time, storms and sea level rise all result in landward migration of the sand shoreline due to storm impacts. Sand is transported across the barrier beach into the bay or lagoon adding to the landward edge of the barrier and moving the entire coastal landform up the existing coastal plain slope that

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comprises the four coastal New Jersey counties. New inlets formed, overwash buried the salt marshes on Long Beach Island, and Barnegat Bay received tens of thousands of cubic yards of sand and debris that removed sediments from the beaches and dunes and transported them westward into the bays. Early recovery efforts as the CRC survey crews conducted the post-storm work were focused on removing this sand from the roads and properties on the islands and returning as much as possible to the beaches.

Storm Events in 2009-2012

Between December 1992 and November 2009, the New Jersey shoreline received just one Federal Presidential Disaster Declaration due to a northeast storm February 6, 1998 (applied only to Cape May and Atlantic Counties). Since the "Nor-Ida" combination storm of November 11, 2009 there have been three northeast disaster declarations and two hurricanes (Irene 2011 and Sandy 2012). The three northeast storms preceded Hurricane Irene, which made landfall in New Jersey as a strong tropical storm in late August. There was an additional Nor'easter October 29, 2011, but no declaration for that event.

Hurricane Sandy crossed the New Jersey coastline exactly a year later, also as the combination of a late season hurricane that was fading into a tropical storm and a strong cold front that wrapped around the hurricane circulation, generating an enhanced wind field that extended across a 1,200-mile diameter in the western Atlantic. A blocking high pressure cell over Greenland forced an unusual left-hand turn to the west and allowed Sandy to make an abnormal shoreline-perpendicular crossing just north of Atlantic City during the evening of Monday, October 29, 2012. This crossing point created two differing impacts between limited shoreline damage due to waves in Cape May and Atlantic Counties (flooding in the back bays excepted) and catastrophic shoreline losses in Ocean and Monmouth Counties extending into New York Harbor and Long Island. This extreme damage was compounded by storm surge flood tide elevations of up to 14 feet in New York Harbor and wave run-up on dunes of 24-foot elevation in Long Branch, New Jersey. The type of approach meant that the southern counties did not have a second high tide accompanied by 80 MPH onshore winds because the wind reversed direction as the storm center came on land. The northern counties saw the second high tide Monday night slash through battered dunes and pour waves and water across the barrier beaches and over almost all protective structures. The tidal surge flooded areas surrounding Barnegat Bay and pushed into Shark River, Manasquan River, Navesink and Shrewsbury Rivers, plus opened several coastal fresh water lakes to marine flooding for the first time in decades (Wreck Pond, Lake Como, Wesley Lake, Deal Lake, and Tackanassee Lake, all in Monmouth County).

The Richard Stockton College of New Jersey Coastal Research Center (CRC) initiated a post-storm survey and assessment of the New Jersey shoreline in response to severe beach erosion resulting from the impact and landfall of Hurricane Sandy. The field work started October 31, 2012 in Cape May County and continued northward into northern Monmouth County by November 26, 2012 as clean-up work continued to remove debris. Any sand excavated from roadways was being returned to the beach and is included in the survey cross section since it is now part of the post-Sandy beach.

As fate would have it all the sites in Cape May, Atlantic and Ocean Counties had been surveyed prior to October 29, 2012. Work had been completed in southern Monmouth County as well, leaving only the sites in Raritan Bay, on Sandy Hook and north of Long Branch to be surveyed to normal depths following Sandy.

The most recent event was a northeast storm that followed Hurricane Sandy on November 7, 2012 receiving a Federal Disaster Declaration.

Hurricane Sandy

The coastal segment between Long Branch to Sandy Hook was the shoreline where the New York District Army Corps of Engineers conducted its Phase I Shore Protection Project between 1994-1996 (initial contract for Monmouth Beach to Sea Bright) and 1997-1999 (for Monmouth Beach to Long Branch). There have been several maintenance contracts conducted in this reach to address erosional "hotspots" (1997, 1999, 2002, 2010 and currently in Monmouth Beach December 2012). The 2011 Coastal Center 25-year report evaluated the sand quantity remaining within this reach at the 12 sites within the project extent at between 14% and 116% of the initial placement volume. The Phase I reach between Sandy Hook National Seashore and the Elberon/Long Branch border did have several maintenance fills (1997, 1999, 2002, 2009, a minor addition in 2010 and the current project underway in late 2012). However, there are two significant points of erosion that have hampered the overall project success. There is a large rock groin at the Cottage Road site (#179) that blocks sand movement along the beach. Since sand moves north, this site is perpetually starved for sand moving into the area from the south. The second location is #173 at West End in Long Branch where the project ends moving south. Elberon and Deal did not participate in the initial project, so sand leaves West End moving north leaving erosion the only option. No sand arrives from the south except during a Nor'easter. The best evidence for this was the limited success for the 2009 maintenance project focused on the West End site that declined by over 50% between 2009 and 2011. The Morris Avenue location 5,000 feet north benefited within six months, however.

Another issue with the Long Branch to Sea Bright segment of the Army project was the failure to include a significant dune system in the original plan. The presence of the 28-foot-high Sea Bright seawall and a 20+ foot-high natural bluff in Long Branch armored with rock and steel meant that the dune was more or less

an afterthought to the project's effectiveness. Initially, two lines of sand fence were erected in Sea Bright with grass planted between them. No initial ridge of sand was designed or built, so the dune system evolved naturally as grass spread and the wind transported material toward the fencing. As a result, after 12 years the dune was irregular, varied greatly in width and elevation, and was positioned a considerable distance from the rock wall. There was no dune system in Long Branch due to a very high tourism usage. Grass plants did colonize at the toe of the rock revetment, but no consequential dunes developed.

The major observation was that Sandy's waves were dramatically higher upon breaking than they were further south, especially south of the center of rotation for the storm. Damage seen in Deal and Elberon demanded that waves exceeded 30 feet in NAVD 88 elevation levels on breaking on the bluff. The Pullman Avenue site saw two homes with foundation elevations at +28 feet destroyed and a third of the lot transformed into empty space where the land once stood. The Lake Tackanassee site was obliterated and the entire Long Branch boardwalk on the top of the bluff was destroyed. These huge breakers essentially bulldozed the berm, beach and irregular dune system to the base of the massive Sea Bright seawall, and then ramped up that slope, over the wall and slammed down onto the space between the highway and the wall. The gaps in the seawall were exploited in a devastating manner in the Borough of Sea Bright, especially in the town center where the municipal public beach is located in a gap in the rock seawall. Sandy just blasted through this gap with awful consequences.

Lake Tackanassee remained closed to tidal flow until a northeast storm March 6, 2013 opened this small estuary lake back to tidal circulation. Sandy toppled over a row of concrete barrier wall segments that remain in an irregular pattern along the beachface, but the ebb-flow drainage from the lake is restricted by an ancient corroded steel bulkhead that was long buried in sand landward of the concrete sections by about 150 feet. High tide submerges the entire entry with flow limited by the elevation difference between high and low tide. At low tide a drainage stream flows down a gradient from the remnants of the steel bulkhead to the low tide elevation at the ocean. This inlet will close naturally as sand is transported into the opening and generates a bay-mouth barrier above the average high tide elevation.

Beach/Dune Damage Assessment by Municipal Island Segment

Monmouth County

To measure the erosion, pre-existing New Jersey Beach Profile Network (NJBPN) monitoring sites were used to provide an accurate comparison and assessment of storm-related shoreline and beach volume changes. Using the data from those sites surveyed for the Fall 2012 NJBPN survey, completed in Monmouth County by October 12, 2012, provides a good baseline for damages that occurred during the hurricane. For those sites not yet surveyed, data from spring 2012 was used for comparison. Data collected at the 15 oceanfront beach profile locations was done November 12-26, 2012 using RTK GPS and extending from the reference location, across the dunes, beach and into the surf to wader depth and by traditional survey methods (swimmers going to -16 feet of water) at those sites not yet surveyed during the NJBPN Fall 2012 survey. By the 12th, it was clear that sand recovery was well under way as a berm had been deposited on the erosional surface generated by Sandy with a substantial offshore bar present in water less than 5 feet deep offshore. However, in some locations massive amounts of sand had been transported inland and were being returned to the beach. Very little sand was transported over the bluff or steel wall in Long Branch, but wave damage was evident from moving water. Substantial sand volumes were moved over the Sea Bright seawall and through the gaps in the rock wall. This was being hauled back to the beach. Six months later, some of the sand washed across the barriers into bays and lagoons is being excavated with a goal to return suitable material back to the beaches from where it came. Not all material deposited in the bays will prove to be sufficiently free of finer sediments or other debris to return to the beach.

Between Long Branch and Asbury Park, no beach replenishment had taken place under the New York Army Corps District's project, so there were few sand beaches to attenuate wave activity during Sandy.

Huge waves broke directly on the bluff comprising the shoreline and found each and every weakly built protective structure and all those that time had reduced in quality or consistency. Breaches exposed the geologic sediments making up Monmouth County revealing sedimentary cross sections not seen since the 19th Century. Damage was widespread and extensive in this zone. The Borough of Deal's wastewater pumping station was destroyed as was the venerable Phillips Avenue bathing pavilion to name just two sites impacted.

The Army Corps project resumed at Asbury Park and continued south to Manasquan Inlet. The beach width had been reduced since work was initially completed, but did serve to slow wave attack somewhat. Dune development was at a municipality-by-municipality basis with basic attention paid to consistent elevations and no opening at beach grade for pedestrians. Each weakness was thoroughly exploited by Hurricane Sandy to the flooding detriment of the municipal boardwalk or Ocean Avenue. Boardwalk damage was extensive in Belmar and Spring Lake, decreasing in Asbury Park. Water poured into the oceanfront region impacting homes and businesses. Boardwalk debris added to the damages. Each estuary lake south of Deal Lake became one with the sea again. Wreck Pond remained a tidal estuary, while Ocean Avenue resisted erosion, keeping the barrier to long-term tidal flow in place. Each lake was inundated with salt water and abundant debris, so clean-up work continues.

The Borough of Manasquan was a victim of flooding and wave damage as the beach/dune system failed extensively south of Riddle Way. Beach sand choked First Avenue after flowing through many of the beachfront homes. Flooding also spread up both the Manasquan and Shark River estuaries inland.

Ocean County

Ocean County probably took the hardest hit of all, receiving the full weight of the storm without much ever having been completed in the way of beach replenishment work. Herbert Street in the Borough of Mantoloking became the site of a storm inlet into Barnegat Bay, and combined with two other near-inlets being formed created a disaster of major proportions. All of northern Ocean County became a storm impact center with extensive dune failure, overwash, home destruction and complete chaos in terms of travel and access along the entire segment. The NJBPN site at 8th

Avenue in Ortley Beach simply ceased to exist: not much beach, no dune, boardwalk pilings, no Ocean Avenue, no curb, no sidewalk and no home landward of the profile reference location. The GPS took us to the reference site position and we found ourselves standing on a flat sand plane with a utility access manhole rising five feet above the sand where Ocean Avenue had been.

Long Beach Island provided a nearly perfect laboratory comparison between the original, natural beachfront's storm resistance and that found under the Philadelphia District U.S. Army Corps of Engineers Long Beach Island shore protection project's design. The Corps' project beach contains a 22-foot-elevation dune with 5:1 slopes to the beach berm that is built 100 feet in width before sloping at a 25:1 slope seaward until the pre-existing seafloor is reached. This design produced between a 225- and 240-foot wide beach above high tide with a very substantial dune backing up the beach before any development was encountered.

Work was to commence undertaking restoration of the entire island's oceanfront except the southern wildlife refuge land and Barnegat Light Borough because that beach actually exceeds the Army design. The private property easement issue stifled wholesale beach nourishment, so the Corps consented to conduct work where easements had been obtained from each owner. Ship Bottom was complete in 2007, Harvey Cedars in 2009, and Brant Beach in 2012.

Hurricane Sandy contained enough wave power and intensity to destroy the dunes in Holgate, caused widespread damage in Beach Haven, North Beach and Loveladies, with lower damage results in Surf City. There was a reassuring lack of property damage from wave activity anywhere within the footprint of the completed Corps beach project segments. The Army dune was eroded, the beach badly depleted, but the project performed well enough to have saved far more in storm damage than its expense of construction. Work is underway to restore each location to its design sand volume and if signed easements are in hand, continue within those areas now willing to accept the wider beach and improved storm protection.

For the first time in many decades the marsh properties and the mainland lagoon properties in Ocean County came under a storm's wrath. Since Barnegat Bay was flooded with about 11 feet elevation of water, the marshes were submerged under 5 feet of storm surge tide. The winds raised 3 to 5-foot waves in some cases that impacted homes along the marsh communities built east of the mainland edge into Barnegat Bay. Flooding and wave damage compounded the destruction seen along the Ocean County oceanfront.

Atlantic and Cape May Counties

Atlantic and Cape May Counties were south of the center of the storm's point of landfall along the New Jersey coast, making their experiences far less intense than those to the north. Dune construction paid off for almost everyone, beaches provided enough of a buffer to reduce wave energy to where the dunes or other

defenses could stop the damage. Flooding was still epidemic with some bayside damages seen in Absecon and Pleasantville.

The barrier islands of Cape May County survived the storm with narrower beaches, scarps cut into dunes and storm surge flooding along the bayshore. Post-storm surveys of the Wildwoods and Cape May City beaches found that more sand was on the berm after the storm than prior to it. Sand from offshore was pushed up and deposited on the berm adding up to 2.5 feet of material.

The reversal in wind direction did mean that the Delaware Bay became the wind fetch across which the now-inland storm churned up waves that impacted the western shoreline of Cape May County and communities to the west including the village of Fortescue. The lower level of storm protection and lighter house construction meant that the waves caused damage and considerable beach erosion. The impact of beach loss was to produce emergency restoration so that the up-coming horseshoe crab egg laying season could supply migratory shorebirds with their Cape May County fuel stop on their way to breeding grounds farther north.

All this damage, destruction as displacement came 50 years after the last serious event and within a cluster of storms that started November 11, 2009. Prior to that, there had been but one Federal Disaster Declaration since December 1992. The 1962 Ash Wednesday storm produced about the same damage per acre of affected developed shoreline, but there was far lower development density then. The size and complexity of the development was lower as well. Then it took about 5 years before everything was put right along the coast, so expect a similar experience this time. The major problem is the lack of experienced construction crews and availability of ready supplies of building materials to allow simultaneous restoration of every damaged structure, public or private. Adding to the issues is the variability in individuals' willingness to commit to the expense of restoration, deciding to build, re-build, repair or sell and leave the area. Believe it or not, there are owners of coastal property who are returning this May 2013, having left last September, flipping the electric breakers and wondering what that strange musty smell is and where that sizzling sound is coming from.

Governor Christie has arranged for the award of block grants, contracts for municipal re-construction, continued debris removal and utilization of the congressional authorization to spend from the $58 billion in Federal Hurricane Sandy assistance. The Federal and State money added to what the local municipalities and individual businesses and homeowners provide, will make the Sandy disaster a much discussed memory by 2020. Right now the beaches are all still there, the dunes are being re-formed and the man-made amenities are being restored as quickly as possible. The ocean is warming up as the sun adds its seasonal input that will allow continued enjoyment of New Jersey's greatest natural resource.

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