



State of New Jersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION  
NATURAL & HISTORIC RESOURCES  
Office of Engineering & Construction

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Governor

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Lt. Governor

MEMORANDUM

TO: David Rosenblatt, Administrator  
*Benjamin Keiser*  
FROM: Benjamin Keiser, Manager  
DATE: March 15, 2010  
SUBJECT: Coastal Storm Survey & Damage Assessment  
Storm Activity Impact – March 12 - 15, 2010

SUMMARY:

The active storm season of 2009 and 2010 continued to affect the State of New Jersey this past weekend in the form of heavy wind-driven rains, strong onshore winds, rough seas, and high surf. This system began to impact the State on Friday, March 12, 2010 and is forecast to affect the region until Tuesday, March 16, 2010.

An area of disturbed weather moved eastward from the Mississippi Valley on Thursday, March 11, 2010. This system facilitated the development of a second area of low pressure into a strong coastal low near the Virginia and North Carolina coast on Friday, March 12, 2010. This coastal low tracked slowly north-northeast along the coast before stalling off of the New Jersey coast on Sunday, March 14, 2010. This system produced a period of strong east-northeasterly winds, heavy wind-driven rain, rough seas, and large surf. The winds switched out of the north and lessened in speed early on Sunday but moderate to large sized surf continued to plague the region.

Off of the New Jersey coast during this event, peak sustained winds were measured at approximately 45 miles per hour with gusts as high as 60 miles per hour. In addition, the largest nearshore sea heights were measured at nearly 22 feet; this resulted in surf heights ranging from 7 to 9 feet, with several areas along the New Jersey coastline experiencing even higher surf heights. The strong onshore winds, large surf heights, and increased water levels created varying degrees of erosion along the New Jersey coastline.

Five coastal inspectors from the Bureau of Coastal Engineering conducted a town by town survey of the New Jersey coastline on Monday, March 15, 2010, the results of which are included as part of this report. As this report was being compiled, surf heights ranged from 4 to 7 feet with northerly winds ranging from 10 to 20 miles per hour. A detailed summary listed by municipality from north to south follows this report.

Note: Wind data courtesy of the National Oceanic & Atmospheric Administration's National Data Buoy Center  
Wave heights courtesy of Steven's Institute's Davidson Lab NJ Coastal Monitoring Network  
Surge data courtesy of the National Oceanic & Atmospheric Administration's Meteorological Data Laboratory.

PERTH AMBOY	2'-3' sloped erosion reported.
SOUTH AMBOY	2'-3' sloped erosion reported.
OLD BRIDGE	15' wide vertical cut in dune from police station to Lawrence Blvd.
CLIFFWOOD BEACH	10' wide vertical cut in dune throughout municipality.
KEYPORT	Little measureable erosion from this storm event.
UNION BEACH	Little measureable erosion from this storm event.
KEANSBURG	20' wide cut in dune reported at Point Comfort. 6' vertical cliff in dune reported throughout rest of municipality. Public works brought in fill for the dune
BAYSHORE FLOODGATE	15' wide vertical cut in dune reported
PORT MONMOUTH	15' wide vertical cut in dune reported
BELFORD	12' wide x 500' long vertical cut in dune at ferry terminal.
LEONARDO	300 ' of dune stone core exposed at Burlington Ave.
ATLANTIC HIGHLANDS	Little measureable erosion from this storm event.
HIGHLANDS	Little measureable erosion from this storm event.
SEA BRIGHT	A 50% loss of dune was reported from the municipal beach to Sandy Hook. 4'-5' sloped erosion on the berm for the entire length of municipality.
MONMOUTH BEACH	4'-5' sloped erosion on the berm for the entire length of municipality.
LONG BRANCH	A 50% loss of dune was reported from north of Seven Presidents to Monmouth Beach. 4'-5' sloped erosion on the berm for the entire length of municipality.
ELBERON	4'-5' sloped erosion on the berm for the entire length of municipality.
ALLENHURST	4'-5' sloped erosion on the berm for the entire length of municipality.
DEAL	4'-5' sloped erosion on the berm for the entire length of municipality.
LOCH ARBOUR	4'-5' sloped erosion on the berm for the entire length of municipality.

ASBURY PARK	4'-5' sloped erosion on the berm for the entire length of municipality.
OCEAN GROVE	1'-2' sloped erosion x 20' to 30' wide for the entire length of municipality.
BRADLEY BEACH	2'-3' sloped erosion x 20' to 30' wide for the entire length of municipality.
AVON BY THE SEA	2'-3' sloped erosion x 20' to 30' wide for the entire length of municipality.
BELMAR	2'-3' sloped erosion x 20' to 30' wide for the entire length of municipality.
SPRING LAKE	3'-4' sloped erosion x 30' to 40' wide from Washington to Morris Ave. 2'-3' sloped erosion x 20' to 30' wide for the rest the of municipality.
SEA GIRT	3'-4' sloped erosion x 30' to 40' wide for the entire length of municipality.
MANASQUAN	3'-4' sloped erosion x 30' to 40' wide for the entire length of municipality. Road damage at the corner of 3 <sup>rd</sup> Ave and Riverside Drive was reported.
POINT PLEASANT	2'-3' sloped erosion x 30' to 40' wide for the entire length of municipality.
BAYHEAD	2'-3' sloped erosion x 30' to 40' wide for the entire length of municipality. Jetties are exposed.
MANTOLOKING	2'-3' sloped erosion x 30' to 40' wide for the entire length of municipality.
BRICKTOWN	3'-4' sloped erosion x 40' to 50' wide for the entire length of municipality. 3'-4' x 5' wide vertical cut in dune. Damage to dune fence at Faber Ave.
LAVALLETTE	3'-4' sloped erosion x 40' to 60' wide for the entire length of municipality
ORTLEY BEACH	3'-4' sloped erosion x 40' to 60' wide for the entire length of municipality. 8'x7' vertical dune cut at Fielder Ave. Damage to dune fence reported.
SEASIDE HEIGHTS	3'-4' sloped erosion x 30' to 40' wide for the entire length of municipality
SEASIDE PARK	3'-4' sloped erosion x 30' to 40' wide for the entire length of municipality
ISLAND BEACH STATE PARK	1' sloped erosion x 20' to 50' wide for the entire length of municipality.
BARNEGAT LIGHT	4'-5' sloped erosion x 75 wide on the berm for the entire length of municipality.
LOVELADIES	4'-5' sloped erosion x 75 wide on the berm for the entire length of municipality.
HARVEY CEDARS	3'-4' scarp on new fill. Damage to dune fence at northern end reported.

NORTH BEACH	15'x 30'x 1000' vertical cut in dune. Four houses are undermined at 1087 Long Beach Blvd. 4'-5' sloped erosion x 75 wide on the berm for the entire length of municipality.
SURF CITY	4' high x 10' wide vertical cut in dune from 11 <sup>th</sup> to 18 <sup>th</sup> St. 80' of handicap ramp has been washed away at 12 <sup>th</sup> St. 12'-15' high x 40' wide cut in dune from 18 <sup>th</sup> to 23 <sup>rd</sup> Street. 4'-5' sloped erosion x 75' wide on the berm for the entire length of municipality.
SHIP BOTTOM	3'-4'x 75'sloped erosion on the berm.
LONG BEACH TOWNSHIP	4'x 8'x 1200' vertical cut in dune at 117 <sup>th</sup> St. 10'x 20'x 1800' vertical cut in dune at 35 <sup>th</sup> St. 3'-4'x 75'sloped erosion on the berm.
BRANT BEACH	4'x 8'x 1200' vertical cut in dune at 47 <sup>th</sup> , 55 <sup>th</sup> , and 77 <sup>th</sup> St. 3'-4'x 75'sloped erosion on the berm.
BEACH HAVEN	3'-4'x 75'sloped erosion on the berm. All material placed at Merivale and Nelson Avenues by municipality has been lost. An additional 10' of roadway has been lost at Merivale Ave.
HOLGATE	3'-4'x 75'sloped erosion on the berm. 1600' long x 10' vertical x 16' wide cut in dune reported in residential area. Vehicle access has been cut off the Natural Area.
BRIGANTINE	2'-3'x 1500'x 25' vertical cut in berm at the refuge. 3'-3.5' flat erosion throughout rest of municipality.
ATLANTIC CITY	3'-3.5' flat erosion throughout municipality. Geotubes exposed at Delaware Ave.
VENTNOR	3'-3.5' flat erosion from Baltimore Ave to New Haven Ave. 3'-4' vertical cut in dune from New Haven to fishing pier.
MARGATE	2'-2.5' flat erosion throughout municipality.
LONGPORT	2'-2.5' flat erosion throughout municipality.
OCEAN CITY	4'-5' vertical cut in dune from 20 <sup>th</sup> St. to the music pier. 3'-3.5'x 30' wide jagged cut in berm from music pier to Seaspray Ave. 2'-3' flat erosion throughout rest of municipality.
STRATHMERE	Natural Area: 1' - 2' sloped erosion x 35' to 40' wide. No dune erosion observed. Oceanfront: 1' - 2' sloped erosion x 40' wide. Wave run up to dunetoe; no damage to dune.
WHALE BEACH	1' - 2' sloped erosion x 35' wide. Wave run up to dune toe; no damage to dune.

SEA ISLE CITY	1' - 2' sloped erosion x 45' wide. Wave run up to dune toe; no damage to dune. 40' dune fence damaged at 5 <sup>th</sup> St. 88 <sup>th</sup> - 93 <sup>rd</sup> - 4' x 2' cut to dune; 60' dune fence damaged.
AVALON	8 <sup>th</sup> - 33 <sup>rd</sup> : 2' - 3' heavy sloped erosion x 35' - 40' wide. 3' high x 6 wide' dune cut. 33 <sup>rd</sup> - 80 <sup>th</sup> : 1.5' - 2' sloped erosion x 35' wide.
STONE HARBOR	1' - 2' sloped erosion x 35' wide for the entire length of municipality. No new impact to the vertical cut reported from 99 <sup>th</sup> - 111 <sup>rd</sup> in 03/15/2010 report.
NORTH WILDWOOD	2 <sup>nd</sup> - 5 <sup>th</sup> : 2' - 3' sloped erosion x 50' wide with a 4' x 8' vertical dune cut @ 2 <sup>nd</sup> Ave. 6 <sup>th</sup> - 14 <sup>th</sup> : 2' - 3' sloped erosion x 50' wide. 14 <sup>th</sup> - 22 <sup>nd</sup> : 2' - 3' sloped erosion x 50' wide. Vertical cut to dune @ 15 <sup>th</sup> Ave. handicap access 3' high x 25' wide x 60' long. 22 <sup>nd</sup> - Municipal Border: 1' - 2' sloped erosion x 60' wide. Remnant dune @ 22 <sup>nd</sup> Ave. eroded completely (40' x 8' x 200')
WILDWOOD	2' - 3' sloped erosion by 100' wide throughout municipality. Public works onsite to excavate outfalls.
WILDWOOD CREST	2' - 3' sloped erosion by 100' wide throughout municipality. Public works onsite to excavate outfalls.
CAPE MAY CITY	Poverty Beach: 3' - 5' sloped erosion by 25' wide. Wash over sand in street at Wilmington and Beach Dr. 6' x 6' cut to 200' section of dune. Rest of Municipality: Wilmington - Stockton Place: 3' - 5' heavy sloped erosion by 30' wide. 100' of dune eroded from Wilmington to Brooklyn. Stockton Place - 2 <sup>nd</sup> Ave: 1.5' - 2.5' heavy sloped erosion by 30' wide.
CAPE MAY POINT BOROUGH	State Park: - 1' - 1.5' sloped erosion x 15' 30' wide. Cape May Point Borough: Lighthouse Ave to Coral Ave 1' - 1.5' sloped erosion x 30' wide. Coral Ave. to Sunset Ave. - 1' - 1.5' sloped erosion x 30' wide.
DELAWARE BAY	Townbank - No significant erosion occurred during this storm event. Villas - No significant erosion occurred during this storm event. Middle Township - No significant erosion occurred during this storm event. Reeds Beach - No significant erosion occurred.