



State of New Jersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION

Climate and Flood Resilience

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MEMORANDUM

TO: David Rosenblatt, Assistant Commissioner

FROM: William T. Dixon, Director 

DATE: August 06, 2020

SUBJECT: Initial Coastal Storm Survey & Damage Assessment
Atlantic Ocean, Delaware Bay and Raritan Bay shorelines
Tropical Storm Isaias August 4, 2020

SUMMARY:

The 2020 hurricane season is already off to a record pace with nine named storms forming by July 30, the most ever recorded since the satellite era began in 1966. Two of these named storms - Hanna and Isaias - became hurricanes and several of these storms have impacted New Jersey's weather and wave climate. Despite this increased activity and the impact to the local region, New Jersey has experienced a calm summer. A few medium- to long-period swells increased the surf several times however impacts to most beaches were minimal and short-lived. Despite the minimal impact to the State's beaches, several 'hot spot' locations were still worth watching. The Division of Coastal Engineering (DCE) and the respective municipalities continued to monitor those areas closely and keep in close communication with each other regarding the status of these locations. Additionally, several periodic nourishment projects recently completed in Cape May County and Monmouth County, alleviated some of the pressure at several traditional 'hot spot' locations.

On July 30th, a low-pressure system south of Puerto Rico strengthen enough to be categorized as Tropical Storm Isaias. Isaias tracked towards the northwest across the Dominican Republic towards the Bahamas when it became a hurricane near the Greater Antilles. Isaias weakened somewhat to a Tropical Storm as it approached Florida and eventually turned more towards the north-northwest paralleling the coast of Florida. Isaias briefly became a Hurricane again as it approached southern North Carolina where it made landfall in Ocean Isle Beach late on August 3rd. Isaias began to accelerate but only slowly weakened as it tracked generally parallel to the Mid-Atlantic Coast. Its inland track allowed for much of the stretch from North Carolina through New England to experience a short-lived but strong southerly wind, heavy rains, tornadic activity and a period of elevated surf and rough seas.

Long period swells increased the surf heights on Saturday August 1st and began a 5-day period of rough surf and elevated rip currents due to these swells, local wind conditions and the departing full moon (August 12th). The strongest winds, heaviest surf and highest tides peaked on Tuesday August 4th in New Jersey. While most of the Atlantic Coast of New Jersey only experienced tides near or just at minor flood stage, several locations susceptible to flooding from southerly winds such as the Delaware Bay and some of the backbays experienced tidal level near or at moderate flood stage. Fortunately, all exceedances only lasted one tidal cycle due the timing and the speed of the storm.

At the buoys off the New Jersey coast, sustained east-southeasterly, southeasterly and southerly sustained winds were recorded at over 50 mph with gusts exceeding 70 mph; gusts at inland reporting stations were recorded between 50 and 70 mph during the peak of the event. Seas heights ranged from 14 to 20 feet at nearby buoys. As a result, surf ranging from 4 to 8 feet developed with greater heights observed around jetties, groins, inlets, and piers throughout the state on August 4th.

Staff from DCE conducted a town-by-town visual pre-storm surveys on Monday August 3rd and post-storm surveys on Wednesday August 5th. The results of this assessment are contained in this report. During the compilation of this report, the surf conditions around the state ranged from 2 to 4 feet with variable winds under 15 mph. A detailed summary listed by municipality from north to south is enclosed.

Of the 79 areas surveyed, 75 were determined to have minor beach or dune erosion, 4 had moderate beach or dune erosion and 0 had major beach or dune erosion. Criteria for determining damage levels are listed below.

Please note that the storm damage assessments found herein were conducted in a rapid time interval with pre-storm and post-storm observations made immediately before and after the event in question. Please note that the changes documented in this report are from this event; pre-existing conditions (i.e. scarps in dunes prior to the event) and what caused these conditions are not always reported herein. It is often the Division's experience that much of the material eroded from the "dry" beach area has not been lost, but rather redistributed within the beach profile system, such as creation or enlargement of offshore sand bars. Our expectation is that much of material will return to the "dry" beach in time following the storm; this time frame may vary based on several contributing factors such as storm frequency and duration.

*** Damage Levels:**

Major erosion – consists of significant or total beach berm loss and/or significant erosion and scarping of the dunes

Moderate erosion – consists of significant scarping and/or significant sloped erosion of beach berm and/or minor erosion of the dunes

Minor erosion – consists of redistribution of sand within the beach profile or loss of sand without significant scarping or significant sloped erosion

LOCATION	INSPECTION NOTES	DAMAGE LEVEL*
PERTH AMBOY	Minor sloped erosion. No major incidents or damage reported.	Minor
SOUTH AMBOY	Minor sloped erosion. No major incidents or damage reported.	Minor
OLD BRIDGE	Minor sloped erosion. No major incidents or damage reported.	Minor
ABERDEEN	No major incidents or damage reported.	Minor
ABERDEEN CLIFFWOOD BEACH	Sloped erosion and redistribution of sand. Some wave runup/tide to the upper beach and near the road. No major incidents or damage observed or reported.	Minor
KEYPORT	Minor sloped erosion and redistribution of sand. Some wave runup/tide to the upper beach. No major incidents or damage observed or reported.	Minor
UNION BEACH	Up to 20' of sloped erosion, 1' - 2' in height. No major incidents or damage observed or reported.	Minor
KEANSBURG – BAYSHORE FLOODGATE	Minor sloped erosion and redistribution of sand. Some wave runup/tide to the upper beach. No major incidents or damage observed or reported. Gate was closed consistent with the Operations Manual.	Minor
KEANSBURG	Floodgate Facility to Point Comfort: Up to 20' of sloped erosion, 1' - 2' in height. Some wave runup/tide to the upper beach Point Comfort to Ideal Beach: Up to 20' of sloped erosion, 1' - 2' in height. Some wave runup/tide to the upper beach Ideal Beach to Pews Creek: Up to 20' of sloped erosion, 1' - 2' in height. Some wave runup/tide to the upper beach	Minor
MIDDLETOWN	Port Monmouth: Minor sloped erosion and redistribution of sand. Some wave runup/tide to the upper beach. No major incidents or damage observed or reported.	Minor
	Belford: Minor sloped erosion along the dike at the ferry terminal No major incidents or damage observed or reported.	Minor
	Leonardo: Minor sloped erosion and redistribution of sand.	Minor
ATLANTIC HIGHLANDS	Minor sloped erosion and redistribution of sand. No major incidents or damage observed or reported.	Minor
HIGHLANDS	Minor sloped erosion and redistribution of sand. No major incidents or damage observed or reported.	Minor
SEA BRIGHT	Up to 25' of sloped erosion, 1' - 3' in height. Some wave runup/tide to the upper beach/dune.	Minor
MONMOUTH BEACH	Riverview Road to Cottage Rd.: Minor sloped erosion and redistribution of sand. Some wave runup/tide to the upper beach/dune. No major incidents or damage observed or reported.	Minor
	Cottage Rd. to South end of Borough: Up to 20' of sloped erosion, 1' – 3' in height, with vertical beach scarps up to 2' in height near Valentine St. Some wave runup/tide to the upper beach/dune.	Minor

LONG BRANCH	Seven Presidents to Lake Takanassee: 20' to 40' of sloped erosion, 1' – 3' in height, with some isolated vertical beach scarps up to 4' in height near active beach fill. Some wave runup/tide to the upper beach. USACE beachfill activity near Brighton Ave.	Minor
	Lake Takanassee to Pullman Ave.: Up to 30' of sloped erosion, 1' – 3' in height, with isolated vertical beach scarps up to 2' in height. Some wave runup/tide to the upper beach.	Minor
DEAL	Minor sloped erosion and redistribution of sand with some isolated vertical beach scarps. Some wave runup/tide to the upper beach. No major incidents or damage observed or reported.	Minor
ALLENHURST	Minor sloped erosion and redistribution of sand with some isolated vertical beach scarps. Some wave runup/tide to the upper beach. No major incidents or damage observed or reported.	Minor
LOCH ARBOUR	Minor sloped erosion and redistribution of sand with some isolated vertical beach scarps. Some wave runup/tide to the upper beach. No major incidents or damage observed or reported.	Minor
ASBURY PARK	Minor sloped erosion and redistribution of sand with some isolated vertical beach scarps. Some wave runup/tide to the upper beach. No major incidents or damage observed or reported.	Minor
NEPTUNE OCEAN GROVE	Minor sloped erosion and redistribution of sand with some isolated vertical beach scarps. Some wave runup/tide to the upper beach. No major incidents or damage observed or reported.	Minor
BRADLEY BEACH	Minor sloped erosion and redistribution of sand with some isolated vertical beach scarps. Some wave runup/tide to the upper beach. No major incidents or damage observed or reported.	Minor
AVON	Minor sloped erosion and redistribution of sand with some isolated vertical beach scarps. Some wave runup/tide to the upper beach. No major incidents or damage observed or reported.	Minor
BELMAR	Minor sloped erosion and redistribution of sand with some isolated vertical beach scarps. Some wave runup/tide to the upper beach. No major incidents or damage observed or reported.	Minor
SPRING LAKE	Minor sloped erosion and redistribution of sand with some isolated vertical beach scarps. Some wave runup/tide to the upper beach. No major incidents or damage observed or reported.	Minor
SEA GIRT	Minor sloped erosion and redistribution of sand with some isolated vertical beach scarps. Some wave runup/tide to the upper beach. No major incidents or damage observed or reported.	Minor
MANASQUAN	Minor sloped erosion and redistribution of sand with some isolated vertical beach scarps. Some wave runup/tide to the upper beach. No major incidents or damage observed or reported.	Minor
POINT PLEASANT BEACH	Up to 25' of sloped erosion, 6' – 8' in height. Some wave runup/tide to the upper beach.	Minor

BAY HEAD	Up to 15' of sloped erosion, 5' – 6' in height, with vertical beach scarps up to 3' in height. Some wave runup/tide to the upper beach/dune.	Minor
MANTOLOKING	Up to 15' of sloped erosion, 5' – 6' in height, with various sections of vertical beach scarps up to 3' in height. Some wave runup/tide to the upper beach/dune.	Minor
BRICK	Up to 20' of sloped erosion, 5' – 6' in height, with various sections of vertical beach scarps up to 3' in height. Some wave runup/tide to the upper beach/dune.	Minor
TOMS RIVER NORMANDY BEACH through MONTEREY BEACH	Up to 20' of sloped erosion, 5' – 6' in height, with various sections of vertical beach scarps up to 4' in height. Some wave runup/tide to the upper beach/dune.	Minor
LAVALLETTE	Up to 20' of sloped erosion, 5' – 6' in height, with various sections of vertical beach scarps up to 3' in height. Some wave runup/tide to the upper beach/dune.	Minor
TOMS RIVER ORTLEY BEACH	Up to 70' of sloped erosion, 6' – 8' in height, with various sections of vertical beach scarps up to 3' in height. Some wave runup/tide to the upper beach/dune.	Minor
SEASIDE HEIGHTS	Up to 20' of sloped erosion, 5' – 6' in height, with various sections of vertical beach scarps up to 3' in height. Some wave runup/tide to the upper beach/dune.	Minor
SEASIDE PARK	Up to 40' of sloped erosion, 6' – 8' in height, with various sections of vertical beach scarps up to 3' in height. Some wave runup/tide to the upper beach.	Minor
BERKELEY TWP. S. SEASIDE PARK	Up to 40' of sloped erosion, 6' – 8' in height. Some wave runup/tide to the upper beach/dune.	Minor
ISLAND BEACH STATE PARK	No major incidents or damage reported to DCE at time of report.	Minor
BARNEGAT LIGHT	Up to 20' of sloped erosion, 2' – 3' in height. Some wave runup/tide to the upper beach/dune.	Minor
LONG BEACH TWP. LOVELADIES	Up to 20' of sloped erosion, 2' – 3' in height. Some wave runup/tide to the upper beach/dune.	Minor
HARVEY CEDARS	Up to 20' of sloped erosion, 2' – 3' in height. Some wave runup/tide to the upper beach/dune.	Minor
LONG BEACH TWP. NORTH BEACH	Up to 20' of sloped erosion, 2' – 3' in height. Some wave runup/tide to the upper beach/dune.	Minor
SURF CITY	Up to 20' of sloped erosion, 2' – 3' in height. Some wave runup/tide to the upper beach/dune.	Minor
SHIP BOTTOM	Up to 20' of sloped erosion, 2' – 3' in height. Some wave runup/tide to the upper beach/dune.	Minor
LONG BEACH TWP. BRANT BEACH through N. BEACH HAVEN	Up to 20' of sloped erosion, 2' – 3' in height. Some wave runup/tide to the upper beach/dune.	Minor
BEACH HAVEN	Up to 30' of sloped erosion, 2' – 3' in height. Some wave runup/tide to the upper beach/dune. Some additional vertical dune scarps near Belvior Ave., up to 5' in height.	Minor

LONG BEACH TWP. HOLGATE	Up to 40' of sloped erosion, 2' – 3' in height. Some wave runup/tide to the upper beach/dune	Minor
BRIGANTINE	Up to 20' of sloped erosion, 1' to 2' in height. Some wave runup/tide to the upper beach/dunes/revetment.	Minor
ATLANTIC CITY	Inlet Seawall area: No incidents or damage observed or reported.	Minor
	Inlet Jetty to Ventnor Border: Up to 20' of sloped erosion, 1' to 2' in height. Some wave runup/tide to the upper beach/dunes.	Minor
VENTNOR	Up to 20' of sloped erosion, 1' to 2' in height. Some wave runup/tide to the upper beach/dunes.	Minor
MARGATE	Up to 30' of sloped erosion, 1' to 2' in height. Some wave runup/tide to the upper beach/dunes.	Minor
LONGPORT	Up to 30' of sloped erosion, 1' to 2' in height. Some wave runup/tide to the upper beach/dunes.	Minor
OCEAN CITY	Up to 40' of sloped erosion, 1' – 3' in height. Some wave runup/tide to the upper beach/dunes. USACE beachfill activity near 6 th St.	Minor
UPPER TWP. STRATHMERE	Up to 30' of sloped erosion, 1' – 2' in height. Some wave runup/tide to the upper beach/dunes.	Minor
SEA ISLE CITY	Up to 40' of sloped erosion, 1' – 3' in height. Some wave runup/tide to the upper beach/dunes. Some ponding on the upper beach JFK Blvd. USACE beachfill activity near 89 th St.	Minor
AVALON	Up to 40' of sloped erosion, 1' – 2' in height. Some wave runup/tide to the upper beach/dunes.	Minor
STONE HARBOR	Up to 25' of sloped erosion, 1' - 2' feet in height. Some wave runup/tide to the upper beach/dunes.	Minor
NORTH WILDWOOD	Hereford Inlet & Surf Ave: Up to 20' of sloped erosion, 1' - 2' feet in height from New York Ave. through Surf Ave. No additional damage immediately reported to the seawall as of report. USACE seawall repair ongoing in Anglesea section of inlet.	Minor
	2nd Ave. to 15th Ave.: Up to 60' of sloped erosion, 1' - 3' in height. No beach between 2 nd Ave. and 3 rd Ave. Some vertical beach scarping up to 3' in height from 3 rd Ave. to 8 th Ave.	Minor
WILDWOOD CITY	Up to 35' of sloped erosion, 1' - 2' in height. Evidence of ponding on upper beach. Some wave runup/tide to the upper beach.	Minor
WILDWOOD CREST	Up to 40' of sloped erosion, 1' - 2' in height. Evidence of ponding on upper beach. Some wave runup/tide to the upper beach.	Minor
LOWER TWP. DIAMOND BEACH	Up to 35' of sloped erosion, 1' - 2' in height. Some wave runup/tide to the upper beach.	Minor
CAPE MAY CITY	Up to 20' of sloped erosion, 1' - 2' in height. Some wave runup/tide to the upper beach/dunes.	Minor
LOWER TWP. WEST CAPE MAY	Up to 20' of sloped erosion, 1' - 2' in height. Some wave runup/tide to the upper beach/dunes.	Minor
CAPE MAY POINT	Up to 20' of sloped erosion, 1' - 2' in height. Some vertical dune scarping near Surf Ave. up to 8' in height and 5' deep. Some wave runup/tide to the upper beach/dunes.	Minor

LOWER DELAWARE BAY	North Cape May/Villas: Up to 20' of sloped erosion, up to 2' in height. Wave runup/tide to the upper beach, dunes and to the vegetation line at several locations.	Minor
	Del Haven/Pierces Point/Reeds Beach: Up to 15' of sloped erosion, 1'-2' in height. Some wave runup/tide to the upper beach, to the vegetation line and to the bulkhead at several locations. Evidence of overwash observed near Reed's Beach.	Minor
DELAWARE BAY/RIVER	East Point: Moderate sloped erosion near lighthouse site. Wave runup/tide exposed additional geotubes however no damage observed. Moderate sloped erosion observed at East Point Rd./Bay Ave. intersection and along the gabions on Bay Ave. Concrete apron at seaward edge of the East Point Rd./Bay Ave. intersection damaged. Debris on and across Bay Ave. Pilings exposed along Bay Ave. Moderate flood stage observed nearby.	Moderate
	Heislerville: Signs of overtopping. Some scour and sloughing on the bayside of dike noted. 3' to 4' diameter sinkhole observed near 2 nd pipe (main pipe at center of dike). Crack/separation on landward side of dike near 2 nd pull off towards marina end. Potholes continue to be observed on dike. Moderate flood stage observed nearby.	Moderate
	Bivalve (Commercial): Additional evidence of damage to the gabions. Evidence of overwash/tidal flooding. Moderate flood stage observed nearby.	Minor
	Fortescue: Up to 30' of sloped erosion with notable vertical scarping of the dune face, up to 15' in height and 5' deep. Additional concrete rubble exposed. Sinkholes along bulkhead at New Jersey Ave. Bulkhead cap damaged. Moderate flood stage observed nearby.	Moderate
	Gandy's Beach: Moderate sloped erosion. Concrete Bin blocks displaced. Evidence of overwash observed. Debris and sand on the roads. Moderate flood stage observed nearby.	Moderate
	Lawrence Twp - (Bay Point): No major incidents or damage reported. Moderate flood stage observed nearby.	Minor
	Fairfield Township (Sea Breeze): No major incidents or damage reported. Minor flood stage observed nearby.	Minor
	Oakwood Beach: Up to 15' of sloped erosion; 1' - 2' in height. Wave runup/tide to the upper beach and fences at several locations. Additional beach losses at the south end with damaged noted to sand fence. Minor flood stage observed nearby.	Minor