By ERIC AVEDISSIAN/Sentinel staff | Posted: Thursday, July 5, 2018 10:09 am

ATLANTIC CITY — Six years after Hurricane Sandy ripped through the region in 2012, New Jersey's beaches have been restored and are in some cases better than they were before, according to experts who spoke June 26 at Stockton University's Carnegie Center.

The William J. Hughes Center for Public Policy and the Coastal Research Center at Stockton University hosted the Jersey Shore Beach Report, which offered a snapshot of beach replenishment throughout the state.

Almost 163 million cubic yards of sand have been placed on the state's beaches at a cost of more than \$1.2 billion in federal, state and local funding.

Michael Klein, interim executive director of the William J. Hughes Center for Public Policy, said sound public policy and partnerships among scientists and government agencies brought the beaches back from Hurricane Sandy.

"More than five years after Superstorm Sandy and its historic storm surge slammed into our coast, New Jersey beaches are back, and in some cases better than ever," Klein said. "They are all in great shape for the Fourth of July holiday and through the entire summer season."

He noted that the state recognized a need for scientific experts to evaluate damage from storms and make state and municipal governments eligible for federal restoration funds following Hurricane Gloria in 1985.

The Coastal Research Center's New Jersey Beach Profile Network was established in 1986 to monitor seasonal shoreline conditions following storms. The network encompasses 106 sites along the Atlantic Ocean from Raritan Bay to Delaware Bay.

Informed by research, the U.S. Army Corps of Engineers and the New Jersey Department of Environmental Protection's Division of Coastal Engineering began replenishing damaged beaches.

"Through well-informed public policy and cooperation among Stockton's scientists and federal and state agencies, New Jersey's 127 miles of coastline are preserved for public enjoyment and protected for our vulnerable wildlife," Klein said.

Stewart Farrell, executive director of Stockton's Coastal Research Center, described the aftereffects of Hurricane Sandy and subsequent beach replenishment efforts.

"Hurricane Sandy was an odd event; it was a dying hurricane that met up with a cold front that ran into a blocking high pressure system over Iceland which caused retrograde motion, which means it was moving from east to west, not southwest or northeast like they normally do, and progressed to make landfall north of Brigantine," Farrell said.

From Brigantine, ike tne to c

Farrell said northern Ocean County received the brunt of the storm, with Ortley Beach and Mantoloking suffering widespread devastation.

In 2013, Congress passed the Sandy Recovery Improvement Act, allowing the Army Corps to fund 100 percent of the restoration of authorized beach projects, constructed or not.

"Those efforts were material in restoring New Jersey beaches to the conditions we see today," Farrell said.

Beach-maintenance costs are broken down to 65 percent federal and 35 percent nonfederal funding, which is split between the state and municipalities. New Jersey foots the bill for 75 percent of the nonfederal share, while the municipalities fund 25 percent.

Farrell said the local share of any project is about \$87,500 for every \$1 million spent.

A Coastal Research Center survey confirmed that in 2015, the beaches were about where they were prior to Hurricane Sandy.

According to the Stockton University Coastal Research Center, New Jersey's beach projects required 162.5 million cubic yards of sand.

In Cape May County, 64.3 million cubic yards of sand were placed on local beaches. Of that, Ocean City placed 25 million cubic yards of sand compared to Avalon's beaches, which required 11 million cubic yards of sand.

Atlantic County moved 19.6 million cubic yards of sand, with Atlantic City beaches restored with 11.5 million cubic yards.

Statewide, \$1.2 billion was spent replenishing and restoring beaches. Cape May County's beach replenishment costs totaled \$370 million, while \$55 million was spent on Atlantic County's beaches. Monmouth County tops them all with \$440 million, while \$382 million was expended on Ocean City's shoreline.

Ocean City's beach-replenishment efforts cost a total of \$100 million, while \$64 million was spent on Avalon's beaches and \$45 million on Atlantic City.

David Rosenblatt, assistant commissioner for construction and engineering, with the DEP, said the beaches were ready for the summer crowds.

"I can confidently say ... that New Jersey is in a very good position for the tourism season. We have wide beaches that can and will be used for the normal sunning and beach concerts, and in the case of Wildwood, motorcycle and hotrod races," Rosenblatt said. "We're in a good position for hurricane season due to the large volume of sand in the dunes."

Rosenblatt said the DEP recognized the need for flood-mitigation efforts in back bay areas, including monthly high tides and storm tides.

"We will be focusing a lot more on the back bay communities and how to address their flooding concerns," Rosenblatt said, adding a new focus will be placed on regional resilience planning instead of spot-to-spot flooding efforts.

Rosenblatt said New Jersey beaches are in a "good position" regarding water quality.

"We have long been a leader in protecting water quality in our beaches. We have strong state and local water-monitoring partnerships that's really second to none in the nation," Rosenblatt said, adding more than 97 percent of the time, water quality is above state standards.

Keith Watson, project manager for the Army Corps' Philadelphia District, said ecosystem restoration or coastal storm damage reduction projects replenished beaches throughout the state.

"I'm happy to report at this time that these policies and strategy that we have employed and work together with, there are healthy, beautiful beaches out there in New Jersey up and down the coast that are ready for the upcoming hurricane season, but also there for tourists to take advantage of. That vital infrastructure is being protected as well as the beaches are open and ready for all this summer. Since Hurricane Sandy, this work has been nonstop," Watson said.

More than 40 million cubic yards of sand have been placed on beaches from Mantoloking to Cape May Point, enough sand to fill Lincoln Financial Field about eight times, Watson noted.

Locally, replenishment efforts include a \$1.5 million dune restoration and beach replenishment for North Wildwood that began in April. The project will replace sand lost during storms earlier in the year. About 150,000 cubic yards of sand will be moved from Wildwood to North Wildwood